Unlocking the nature cure: barriers and mechanisms of nature-based interventions for adult mental health

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Abstract

Evidence demonstrates that nature-based interventions can be an effective treatment option for adults with mental illness. However, barriers to referral, uptake and attendance of these interventions need to be understood and addressed. This thesis explores the current knowledge base on the barriers and highlights the gap in the literature on the psychological, psychosocial, and physical barriers. Through a qualitative methodology, the psychosocial barriers were identified as the most common barrier. Social identity theory and tools from occupational therapy were then adopted in an experimental study design to test whether certain social barriers could be reduced, eliminated, or turned into enablers. Furthermore, the study explored whether the adopted theory would have an effect on a person's meaning in life, purpose in life, self-esteem and mental wellbeing. In a novel programme created at a community garden, participants gained the opportunity to experience being providers of social aid instead of recipients of social aid. The findings suggest that by using existing psychological theory from across several disciplines, it is possible to turn social barriers into enablers and increase positive affect. The thesis argues that the benefits to be gained from engaging in nature-based interventions, may need 'unlocking' and a new integrated model of nature-based interventions for adult mental health is presented based on the theory utilised within the study.

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Abbreviations

AHTA – American Horticultural Therapy Association

ANOVA – Analysis of variance

ANS – Autonomic nervous system

ART - Attention restoration theory

ASD – Autism spectrum disorder

BBC British Broadcasting Corporation

bpm – Beats per minute

CAQDAS – Computer-assisted qualitative data analysis software

CBT – Cognitive behavioural therapy

CMD – Common mental disorder

EEG – Electroencephalogram

GP – General practitioner

GRx – Green exercise

GSP – Green social prescribing

HR – Heart rate

HRV – Heart rate variability

IAPT – Improving access to psychological therapies

IPA – Interpretative phenomenological analysis

IPS – Individual placement support

LF/HF – Low frequency / high frequency

LOC – Locus of control

MAID – Medical assistance in dying

MBSR – Mindful-based stress reduction

MeSH – Medical subject headings

MIL – Meaning in life

MOHO – Model of human occupation

ms - Milliseconds

MWB – Mental wellbeing

NASP – National Academy of Social Prescribing

NBIs – Nature-based interventions

NHS – National Health Service

NICE – National Institute for Health and Care Excellence

OT – Occupational therapy

PCC – Population, concept, context

PICOS – Population, intervention, comparison, outcome, study design

PIL – Purpose in life

PIS – Participant information sheet

PNS – Parasympathetic nervous system

PPP – Psychological, psychosocial and physical

PTSD – Post traumatic stress disorder

QGDYP – Queer and gender diverse young people

RAS – Recovery assessment scale

RMSSD – Root mean square standard deviation

RSES – Rosenberg self-esteem scale

SD – Standard deviation

SDM – Shared decision making

SDRR – Standard deviation of the RR interval

SDT – Self-determination theory

SE – Self-esteem

Sed – Supported education

Sem – Supported employment

SIT – Social identity theory

SNRIs – Serotonin and norepinephrine reuptake inhibitors

SNS – Sympathetic nervous system

SP – Social prescribing

SSRIs – Selective serotonin reuptake inhibitors

TA – Thematic analysis

WEMWBS – Warwick-Edinburgh mental wellbeing scale

WHO – World Health Organisation

Thesis introduction and summary

The research presented in this thesis aimed to explore how to upscale nature-based interventions (NBIs) for adult mental health and begun by examining the barriers to referral, uptake and attendance of these interventions.

Chapter one describes the current mental health situation in the UK and introduces the terms community engagement, social prescribing and green social prescribing. It then describes the research on the barriers to NBI engagement and identifies that the literature remains focused on the organisational, political and practical barriers with little research on the personal service user experienced barriers such as the psychological, psychosocial and physical (PPP).

Chapter two used a scoping review to explore the current knowledge base on the PPP barriers. The review identified that the social elements had the greatest impact in terms of creating barriers and interrupting or preventing referral, uptake and attendance of NBIs.

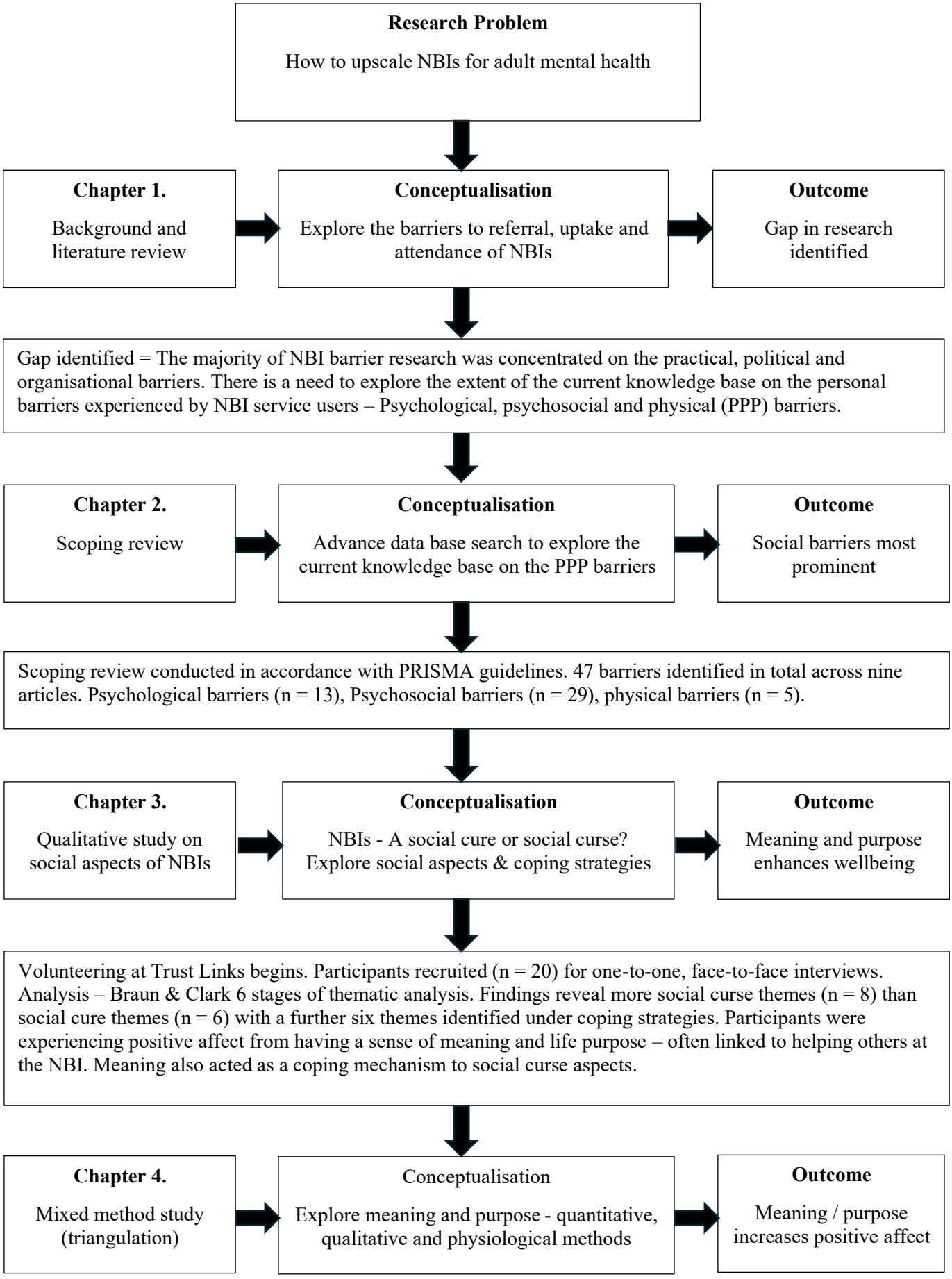
Chapter 3 responds to the results from the scoping review and introduces the concept of socialisation as enhancing wellbeing (social cure) and as a cause for inducing psychological harm (social curse) and investigates NBI service users' experiences of the social phenomenon through a series of face-to-face interviews. Several social concepts were identified that could be used or manipulated to create a more positively experienced intervention. These were (i) mental health stigma, (ii) social identity, and (iii) increasing the meaning and purpose behind the activities, particularly in the context of being able to help other people.

Chapter 4 applies the findings from chapter three in a practical capacity and describes the development of a novel NBI which presented participants with a horticultural-based activity that provided the opportunity to become providers of social care to a vulnerable population.

The novel NBI encompassed several theories from across different disciplines. These were social identity theory (SIT), which describes the processes through which people form a sense of self from the groups to which they belong to, the model of human occupation (MOHO), an occupation-focused approach which is centred on motivating a person to action, and Logotherapy, a meaning centred therapy which helps individuals find meaning and purpose in life. The outcomes were measured quantitatively, qualitatively, and biologically.

Chapter 5 provides a summary of the thesis as a whole and argues for a move away from situating NBIs in the medical model in favour of situating them in the biopsychosocial model. It describes the current theories, models and mechanisms that link nature to health and presents a new integrated model of NBIs for adult mental health incorporating the theory utilised in the creation of the novel NBI intervention in chapter 4.

Chapter 6 critically discusses the proposed integrated model of NBIs and provides recommendations for future research. It describes how the model fits within the National Health Service's 10-year health plan for England, how it could influence policy, and how it could be implemented in practice.


Research Problem
How to upscale NBIs for adult mental health
Chapter 1.
Background and literature review
Conceptualisation
Explore the barriers to referral, uptake and attendance of NBIs
Outcome
Gap in research identified
Gap identified = The majority of NBI barrier research was concentrated on the practical, political and organisational barriers. There is a need to explore the extent of the current knowledge base on the personal barriers experienced by NBI service users – Psychological, psychosocial and physical (PPP) barriers.
Chapter 2.
Scoping review
Conceptualisation
Advance data base search to explore the current knowledge base on the PPP barriers
Outcome
Social barriers most prominent
Scoping review conducted in accordance with PRISMA guidelines. 47 barriers identified in total across nine articles. Psychological barriers (n = 13), Psychosocial barriers (n = 29), physical barriers (n = 5).
Chapter 3.
Qualitative study on social aspects of NBIs
Conceptualisation
NBIs - A social cure or social curse? Explore social aspects & coping strategies
Outcome
Meaning and purpose enhances wellbeing
Volunteering at Trust Links begins. Participants recruited (n = 20) for one-to-one, face-to-face interviews. Analysis – Braun & Clark 6 stages of thematic analysis. Findings reveal more social curse themes (n = 8) than social cure themes (n = 6) with a further six themes identified under coping strategies. Participants were experiencing positive affect from having a sense of meaning and life purpose – often linked to helping others at the NBI. Meaning also acted as a coping mechanism to social curse aspects.
Chapter 4.
Mixed method study (triangulation)
Conceptualisation
Explore meaning and purpose - quantitative, qualitative and physiological methods
Outcome
Meaning / purpose increases positive affect

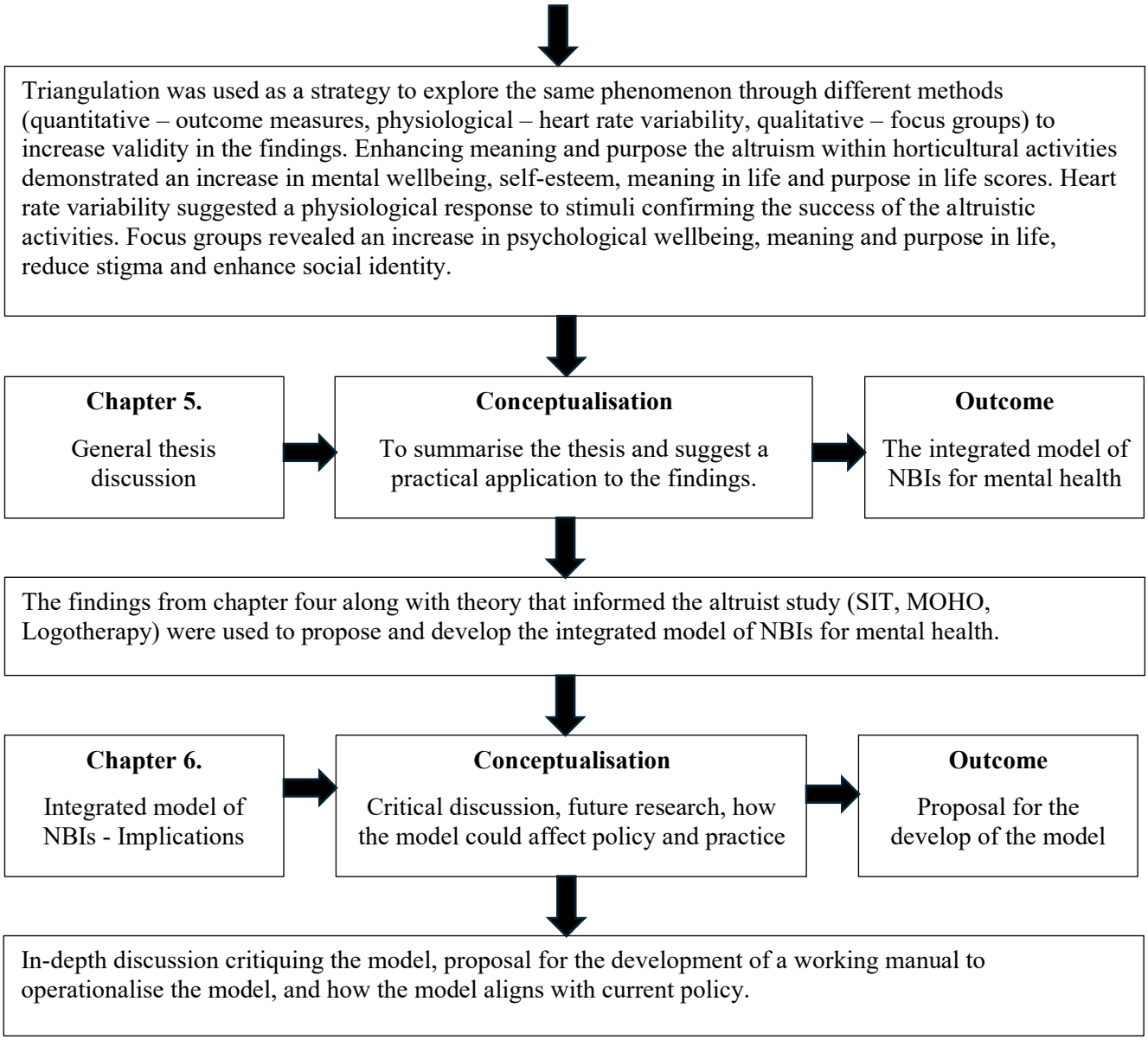


Figure 1. Schematic plan of thesis and research phases.

Chapter 1. Community engagement and the barriers affecting nature-based interventions for adult mental health

1.1 Adult mental health and community engagement

Mental health disorders contribute to the largest single cause of illness in the UK with one in four adults experiencing one or more diagnosable mental health disorders in any given year (National Health Service [NHS], 2022). Defined by the Diagnostic and Statistical Manual, a mental disorder is characterised by a clinically significant disturbance in an individual's cognition, emotional regulation, or behaviour (American Psychiatric Association [APA], 2013). The NHS recognises that there is a particular need for improvements in mental health care for young adults aged between 18-25 (NHS, 2019a) and aims to deliver a transformation in adult mental health services by 2023/24 (NHS, 2022). This aim, however, appears ongoing as evidenced by the UK Government's mental health and wellbeing plan, updated 17th May 2023, which declares a commitment to improve wellbeing in 'every area of the UK' by 2030 (Department of Health and Social Care, 2023). Within this revised plan, under the heading 'What Works', it is acknowledged that alongside the NHS Improving Access to Psychological Therapies [IAPT] programme, and psychotropic medication, there is evidence of the effectiveness of referral to community and voluntary sector interventions. Indeed, increasing care through referral to a range of community-based services, such as befriending groups, art classes or community gardening projects (National Academy for Social Prescribing [NASP], 2025), was described by the NHS in the realisation of their aims and were laid out in a framework titled 'The Community Mental Health Framework' (NHS, 2019b). Among the framework's key aims was the intention to improve quality of life by

directing adults towards participation in their communities and connecting them with meaningful activity. To achieve this, the framework recognised the need to create a network of 'community connectors' (more commonly described as link workers), whose role is to become familiar with the available social activities and resources provided in their local community. Link workers are trained to facilitate the transition from clinical care to community care, assess a person's ability to engage in activity, and adjust the level of support needed as required (NHS, 2019b).

Within this framework it is acknowledged that one potential barrier preventing community engagement is the increased level of support that may be required by some people to engage socially. The mental health charity 'Rethink Mental Illness' highlights how the link worker may need to support some people by accompanying them to their first community engagement session in order to facilitate the uptake of community engagement (Rethink Mental Illness, 2018). The entering of a new social environment can be very daunting even for people without a mental health disorder. For example, Christie et al. (2008) and Millman and McNamara (2018) conducted studies on the lived experience of students entering a university. The researchers revealed that psychological distress was experienced through the complex challenges of acquiring a new identity, and of the impact and social pressures of taking an existing identity (an identity formed out of the students' social background and social status), into their new environment. For instance, some students held negative beliefs about their socio-economic background and academic ability. Students reported entering university as bewildering and dislocating, feeling alienation and exclusion, not belonging, experiencing a crisis in confidence, and self-doubt. These studies provoke the question as to what psychological distress may be experienced by adults with mental health disorders on

entering a new social environment such as a community-based social engagement intervention.

A second possible barrier to participation concerns the statement in the community engagement framework that aims to 'connect people to meaningful activity' (NHS, 2019b). This statement requires some form of definition as to what constitutes meaningful activity. For instance, what society defines as meaningful activity and what activity a person finds as meaningful to them personally may be very different. An awareness of what constitutes an activity as being meaningful to any given person has been termed 'meaning salience' (Hooker, Masters, & Park, 2018), and it has been suggested that with greater meaning salience comes an increase in activity engagement (Hooker & Masters, 2018). Continuing the critique of meaningful activity, one should consider the issue that mental health disorders, such as depression, can render any activity meaningless regardless of how low or high the meaning salience is. Goldberg et al. (2002) argue that people experiencing depression may find it difficult to engage with meaningful activity as their symptoms could act as a barrier to perceiving any activity as meaningful. The researchers argue that an intervention based on meaningful activity may need to be carried out in conjunction with an intervention that addresses the symptoms of depression (Goldberg et al., 2002).

Another consideration to explore is that of assuming that social engagement is, within itself, psychologically beneficial. Rethink Mental Illness (2018) declares that strong social networks are essential to a good quality of life, however, an argument against this suggests that it is the quality and not quantity of social networks that is the key to a good quality of life (Carmichael et al., 2015). Additionally, it is possible to have a good network of social

contacts and still feel lonely (O'Rourke et al., 2018). Results from a study that identified subtypes of loneliness demonstrated that it is emotional loneliness and not social loneliness that is detrimental to one's mental health and that people desire close attachments to others rather than an extended social network (Hyland et al., 2019). Furthermore, a review of social participation interventions for people with mental health problems highlighted the importance of the quality of the social relationships and the need for a meaningful social role (Webber & Fendt-Newlin, 2017). The review identified nineteen social engagement interventions and concluded that the strongest social gains were found in the 'Supported Community Engagement' category of interventions. This category included interventions such as volunteer befriending where people were matched together with another person presenting with similar mental health disorders. This supportive dynamic of shared experience was found to be effective in reducing mental health symptoms (Webber & Fendt-Newlin, 2017). It may be the case that this form of intervention proved the most effective since it provided a non-judgemental space (Rethink Mental Illness, 2018).

Although it has been suggested that non-mental health specific community activities should be made accessible to people with mental health disorders (Rethink Mental Illness, 2018), there is a possibility here to feel discrimination and social stigma. Social stigma is the negative attitude towards individuals or groups (such as people experiencing mental health disorders) and is rooted in the misconception that people presenting with mental health symptoms are of a weaker character (Chatmon, 2020). This definition might explain why people (men in particular), do not seek professional mental health treatment (Chatmon, 2020). Even if stigma and discrimination are eliminated within a care service, stigma and discrimination can still be perceived which can be just as damaging. For example, a meta-analysis conducted by Schmitt et al. (2014) demonstrated that perceived discrimination was

strongly related to the wellbeing outcomes of sexual minorities, people with a physical disability, people considered overweight, and people with mental health disorders. The results of their analysis suggest that perceiving the self as a target of discrimination is psychologically harmful (Schmitt et al., 2014). In summary, the NHS is investing in community engagement as a mental health intervention, however, the framework for this intervention is based on the presumption that socialisation is beneficial for mental wellbeing. This assumption dismisses the less understood social processes that demonstrate socialisation to be psychologically harmful (Wakefield et al., 2019). In this light, the NHS should perhaps move forward with caution and acute awareness that socialisation is a heterogeneous construct.

1.2 Social prescribing, green social prescribing and nature-based interventions

Social prescribing, sometimes called community referral, allows health professionals such as those working in primary care e.g., GPs and practice nurses to refer people to local community-based non-clinical services (The Kings Fund, 2017 / 2020). Social prescribing (SP) is a community centred approach which addresses people's needs in a holistic manner by utilising the power of community engagement with the goal of empowering people to become independent in promoting their own health and wellbeing (The Kings Fund, 2017 / 2020). Through SP, a large social support network could be made accessible across the country encompassing a wide and diverse range of activities (NHS, 2019b). Activities that can be included under SP are potentially limitless however popular programmes include befriending, cooking, sports, and nature-based activities (The Kings Fund, 2017 / 2020). The UK government (Department of Health & Social Care, Gov.UK, 2021) has shown a particular interest in nature-based activities and has invested around £4 million for a cross-

government project focused on supporting referral to nature-based interventions by health professionals (termed green social prescribing) to improve physical and mental health across England (NHS England, 2025). Green social prescribing (GSP) can include referral onto local walking groups, community gardening, conservation volunteering, wilderness and bushcraft, farming, animal care, outdoor adventure activities, green gyms, open water swimming and arts and cultural activities which take place outdoors (Department of Health & Social Care, Gov.UK, 2021; NHS England, 2025). These activities would be 'prescribed' by link workers or other health professionals in accordance to the needs and circumstances of each individual (NHS England, 2025).

The literature recognises a variety of programme and intervention titles that describe the use of nature, the outdoors, and/or animals as treatments for health and wellbeing. For example, 'Green care' (Steigen et al., 2016), 'Ecotherapy' (Isham et al., 2025), 'Nature, eco and adventure therapy' (Buckley & Brough, 2017), 'Nature-assisted rehabilitation' (Währborg et al., 2014), 'Nature-assisted therapy' (Shorer et al., 2023), 'Nature-based health intervention' (Jessen et al., 2025), 'Nature-based therapy' (Bonham-Corcoran et al., 2022), 'Nature-based programmes' (Forbes et al., 2025), and 'Nature-based interventions' (Kaleta et al., 2025). Alongside these umbrella terms there are numerous intervention titles that provide a context to the nature component such as a farm environment i.e., 'Care farming' (Hine et al., 2008), 'Therapeutic farming' (Kim, 2024), 'Animal assisted therapy' (Koukourikos, 2019), or horticulture i.e., 'Therapeutic horticulture' (Mourão et al., 2022), 'Horticultural therapy' (Tu, 2022), and 'Social therapeutic horticulture' (Wood et al., 2025). Alongside these there is also 'Adventure therapy' (Gass et al., 2020) and 'Wilderness therapy' (Fernee et al., 2017) which incorporate extreme sports such as kayaking, climbing, mountain biking and bush craft skills. Each of these intervention titles also provide a definition as to what they are. For instance,

Green care is defined as a well-established international concept using animals, plants and nature in an active process to offer health-promoting activities for people (Steigen et al., 2016). Nature-based programmes has been defined as programmes that aim to enable health and wellbeing benefits through providing access to specifically designed, structured and facilitated group-based activities that engage people with nature (Baird et al., 2022), which is essentially the same definition provided for Nature–based interventions i.e., activities, programmes, or strategies which aim to improve a person's mental and physical health by involvement in a nature-based experience (Shanahan, 2019). Bonham-Corcoran et al. (2022) suggest that different intervention terminology can be used interchangeably and stated that nature-based therapy can also be referred to as green care, nature-assisted therapy, nature therapy or animal-assisted therapy.

This thesis has adopted the use of nature-based interventions (NBIs) as the preferred choice of terminology. The rationale for this is that it is the terminology being used by the National Academy for Social Prescribing (NASP) (NASP, 2025) and the National Health Service (NHS) England (NHS, 2022). Furthermore, its use among academic peers researching in this field is observably more prominent with a wide and diverse range of contexts and populations being explored. To illustrate, the terminology NBI has been used in research with older adults (Tong et al., 2025), young people in precarious situations (Obeng et al., 2023), vulnerable youth (Overbey et al., 2023), autistic children (Fan, et al., 2023), ADHD (Hood & Baumann, 2024), mental health and wellbeing (Shrestha et al., 2025), physical health conditions (Struthers et al., 2024), acquired brain injury (Norwood et al., 2025), perinatal depression (Walker-Mao et al., 2024), bereavement (Dean et al., 2023), long-term conditions (Taylor et al., 2022), and domestic violence (Young et al., 2023). This thesis uses the definition provided by Shanahan et al. (2019) which states *'nature–based experiences (NBIs) are*

programmes, activities or strategies that aim to engage people in nature–based experiences with the specific goal of achieving improved health and wellbeing'.

As an intervention for mental health, nature-based interventions (NBIs) remain quite unique among community engagement programmes. For instance, NBIs encompass multiple known therapeutic practises shown to be good for improving mental health such as interaction with nature (McMahan, & Estes, 2015), physical exercise (Chekroud et al., 2018), and socialisation (Wakefield et al., 2022). NBIs are diverse in their design and target population; for instance, animal assisted therapy is effective in reducing PTSD symptomatology (Hediger et al., 2021), horticultural therapy aims to address clients' specific therapeutic and rehabilitative goals, social therapeutic horticulture provides an intervention in a supportive social environment (Sempik, 2022), and adventure-based therapeutic programmes often target veterans as a means to address mental health while mitigating against the stigma veterans face in initiating traditional therapies such as counselling (Bettmann et al., 2022). NBIs also provide the potential to develop a range of practical skills which could lead onto work in the voluntary sector or indeed employment (Haller, 2006). The acquisition of a new skill set is significant as a resource for another NHS aim set out in their 'Long-term plan' to support people with mental health disorders gain employment through the 'Individual Placement and Support (IPS) programme (NHS, 2019b). Furthermore, NBIs offer a wide variety and choice of activity that can be adapted to suit people with a range of needs and levels of physical ability (Kennedy & Haller, 2006). NBIs can even be adapted to suit those who would prefer to engage passively by simply spending time in a natural environment, see research on 'forest bathing' for a review of the benefits of passive nature engagement (Wen et al., 2019). If the NHS is to utilise NBIs as a therapeutic intervention in the care of adults with mental health disorders, then there needs to be a clear understanding of what the

limitations are in terms of the barriers interrupting or preventing referral, uptake, and attendance.

1.3 Lack of barrier research

There is a significant acknowledgement in the literature for the need for research to be carried out on the barriers that could be interfering with referral, uptake, and attendance of NBIs. For instance, little is known about the challenges of community-led NBIs (He et al., 2022), and there is a need to identify the barriers to their effective use (Townsend, 2006) along with a detailed explanation of service users' participatory behaviour (Skayni, 2022) and whether NBIs result in outcomes of negative experience (Wilkie & Davinson, 2021). Additionally, Robinson et al. (2022) specifically address the concern over why access to green space is lower for racialised communities. Where barrier research has been conducted, limitations have included a need to discuss participant dropout and identify the reasons for leaving the NBI (Wood, Barton, & Wickes, 2022) and an acknowledgement from Harris (2017) that the views reported within her study may not represent those who failed to engage with the NBI.

Further to the acknowledgement of this gap in the literature is the appreciation that the population studied in NBI research may result in biased conclusions. This has been pointed out from several perspectives such as participants who consent to be interviewed are more engaged in the NBI (Barley et al., 2012), research populations are made up of those who choose to participate in NBIs with a lack of data from those who choose not to attend (Firby & Raine, 2021; Cuthbert et al., 2021), and research exploring the barriers to NBI participation has been based on clinicians' perceptions as opposed to service users' experience (Tambyah et al., 2022).

1.3.1 Organisational barriers

A preliminary review of the literature revealed a growing body of research into the barriers affecting referral, uptake, attendance and delivery of NBIs. However, the vast majority of the barriers discussed concerned the clinical aspects of NBIs such as the lack of evidence and outcome measurement tools (Van den Berg, 2017; Tambyah et al., 2022). Other issues highlighted included the organisational, practical, and bureaucratic challenges that stakeholders face when setting up and running NBIs. These include a need for transparency about what the NBI offers, unclear referral pathways, local availability of green spaces, funding issues, staffing challenges, and health and safety concerns (Jepson et al., 2010; Robinson et al., 2020; Wong, 2020).

One prominent barrier discussed in the literature takes place at the referral stage influenced by the cultural norms and the expectation that any visit to a GP would result in a diagnosis and prescription based on the medical model. Fixsen and Barrett (2022) point out that the GP's role to prescribe medication is deeply entrenched in western society and therefore drug-free alternatives may be greeted with some scepticism. This highlights the question of whether patients would accept referral to a NBI as a serious pathway to the treatment of mental health (Marx & More, 2022). A study by Tambyah et al. (2022) exploring mental health clinicians' perceptions on the barriers to NBI referral identified that several clinicians have the opinion that their patients would need to be persuaded into participation. This concept brings forth concerns over whether a persuasion approach is ethical, and furthermore, research demonstrates that in instances where a referral has been dictated rather than freely accepted, the known benefits associated with participation in NBIs have been diminished (Tester-Jones et al., 2020).

However, scepticism does not lie solely with the patient as a barrier to referral. This facet has been shown to be bidirectional since there is a lack of recognition of the health benefits of nature engagement by the health sector in general (Townsend, 2006; Shanahan et al., 2019), and a need for a culture change within healthcare to understand the value of GSP and aid the development of NBIs (McHale et al., 2020). Referral success, as suggested by Tambyah et al. (2022) is largely dependent on the personal interests in nature as a therapeutic medium of the mental health professional, a concept called GP buy-in (Fixsen et al., 2020) and one which was identified as a strong factor in NBI promotion in a study by Fixsen and Barrett (2022). GP hesitancy through a lack of awareness or a lack of interest are by no means the only variables interrupting the referral process. Clinicians have a duty of care towards their patients and an array of barriers highlighted in the literature reveal a series of issues that need addressing. For instance, a medical intervention needs to be evidence-based and therefore NBIs will depend on the scientific evidence demonstrating the relationship between nature exposure and health benefits whereby legitimising this form of treatment (Tambyah et al., 2022). A GP may feel hesitant about referring a patient without clear evidence that the treatment suits the diagnosis. For instance, Masterton et al. (2020) point out that time alone in the wilderness might not be appropriate for people diagnosed with psychosis. Although the evidence base is growing for the efficacy of nature as a health intervention, there is still a lack of explanatory frameworks, pathways and models describing the mechanisms of NBIs and how they promote health (Van den Berg, 2017). The evidence also needs to include clear outcome measures in the changes to behaviour or health throughout such interventions, a task that has been perceived as difficult beyond the observable behaviours of service users such as attendance and adherence data (McHale et al., 2020). More research is needed to demonstrate who will benefit from NBIs, the health conditions that will respond to this form of treatment, and the means by which engagement in nature work (Garside et al., 2020). Only once this

evidence becomes clear can clinicians confidently prescribe nature as an intervention knowing that patients are being matched to a treatment that is suitable for their condition (Marx & More, 2022). The importance of this 'matching' is not purely one of GP assurance and patient duty of care since a lack of tailoring SP interventions to patients' needs has been cited as one plausible reason for low uptake (Lawson et al., 2022).

Along with a lack of evidence, is a need for establishing clear and efficient referral pathways that connect the different stakeholders involved in GSP (Robinson et al., 2020). This may be an issue of some urgency since in some areas of the UK research has shown that there has been no NHS GSP referral pathway (Marx & More, 2022). Despite this, other research has raised concerns over how the formalisation of referral pathways could increase bureaucracy and regulation leading to an increase in health and safety policy, an increase in outcome measurement, ultimately leading to an increase in training for staff and volunteers (McHale et al., 2020). Insufficient human resources and skills has already been identified as a barrier to the implementation of NBIs (Marsh et al., 2018), which is significant since NBIs tend to be delivered by third sector organisations which are often small with capacity issues and can be reliant on volunteer labour for sustainability (McHale et al., 2020). Indeed, a NBI located in Scotland called 'Branching Out' can only provide sessions three times a year for a maximum of twelve participants (Marx & More, 2022). A limited number of available spaces, or individuals being placed on waiting lists has been identified as a barrier to GP referral (Wood, Polley, et al., 2022), whilst a perceived lack of available services has been reported as the most frequent constraint expressed by GPs (Robinson et al., 2020) along with identified gaps in service provision for specific patient groups (e.g., teenagers with brain damage) (Marx & More, 2022). The literature discussing the organisational barriers to NBIs have highlighted a complex web of challenges that need addressing with some researchers

suggesting that bureaucracy concerning the development of certain NBI initiatives such as social farms, has become too long and over complicated. For example, Lund et al. (2015) describe the requirement for cooperation with other agencies, changing quality control standards, uncertain annual budgets resulting in problematic long-term planning, and a limit to the length of the service providers' contracts (i.e., uncertainty whether another service provider would get next year's contract). Additionally, risk adverse culture and risk management strategies can be carried forward to such extremes as to block NBI initiatives altogether (Tambyah et al., 2022).

1.3.2 Forced participation

The review on organisational barriers briefly touched on a sensitive issue, as suggested by some clinicians, for the need to convince patients into NBI participation (Tambyah et al., 2022). While it is reported that people with mental ill health may lack motivation to attend such interventions (among other reasons), referrers should remain conscious of a patient's intrinsic motivation and past nature-based experiences (Tester-Jones et al., 2020). A qualitative study by Barley et al. (2012) revealed how one service user described being made to feel obliged to attend a NBI by his health care team and stated that he was not particularly happy about doing it. Indeed, perceived social pressure does increase the likelihood of people with mental ill health engaging in NBIs, however, it has also been linked with lower visit satisfaction and greater visit anxiety (Tester-Jones et al., 2020). Other research with adolescents in residential youth care institutions has shown that the effectiveness of a treatment can be threatened if a person feels coerced (de Valk et al., 2019), while a patient's own lack of motivation or willingness to engage is often a crucial barrier (Aughterson et al., 2020). Davis-Berman and Berman (2012), state that it is unclear how to manage a patient

who does not want to engage in a NBI or whether their opinion or preference for treatment should even be changed. In the research by Tambyah et al. (2022), one clinician reported that participants of NBIs should not be made to engage socially should they not want to, and perhaps this opinion should hold fast for engagement in NBIs in general. However, the participant who felt obliged to attend in the research by Barley et al. (2012), did report growing to like it. The prospect of lowering nature visit satisfaction, threatening the effectiveness of treatment, and exacerbating anxiety through persuaded participation is a problematic one, however, not pushing a person towards engagement might also prevent a person's future treatment success. Perhaps this case is demonstrative of a need for clearer patient understanding on what NBIs involve and how it works, whilst highlighting the overarching barrier at play to be how NBIs are 'packaged' and 'marketed', with a need to develop appropriate promotion material for these initiatives (McHale et al., 2020).

A theory that would support pushing a person towards NBI participation describes how humans have an innate preference for natural environments, a term called biophilia (Wilson, 1993). Research in support of the biophilia hypothesis demonstrates that when people are offered a choice in what scene they prefer to view, they gravitate towards images of savannah like biomes (Balling & Falk, 1982). Additionally, Park et al. (2010) describe the Japanese phenomenon and effects of 'Shin-rin yoku' (forest bathing) in support of biophilia. In this study, psychological and physiological measures were recorded from a group of participants who were asked to passively spend time in a forest environment. Results revealed that time spent in a forest could relieve tension, decrease depression, and lower pulse rate, blood pressure, and cortisol. Despite these intriguing findings, the notion of persuading a patient into engaging in a NBI in the hope of the processes of biophilia taking place should be approached with caution since not everyone experiences nature exposure as restorative. A

polar opposite concept termed ‘biophobia’ describes people with an aversion to nature and natural environments. Furthermore, Biophobia suggests that humans have evolved with innate psychological responses to perceived threats found in nature, for instance spiders or snakes (Joye & De Block, 2011), a phenomenon that has been used to explain the origins of typophobia which describes an intense fear of repetitive patterns often found on venomous animals (Kupfer & Fessler, 2018). Along with this built in sense of danger awareness, biophobia can also be found in people who have grown up in urban environments. For this population, an urban area may be considered more restorative than natural areas through processes of familiarity and material comfort, along with pleasurable experiences such as shopping or visiting cafes, entertainment venues, and historical places (Patuano, 2020). Caulkins et al. (2006) provide an example of the biophobia reaction with data highlighting how young women benefited less from hikes in the wilderness (in comparison to other participants), because of a high aversion to the outdoors. With the notion of biophobia in mind, NBI initiatives should consider that natural environments themselves can be a barrier that prevent some people from accessing the benefits of engaging in nature as described by the biophilia hypothesis.

1.3.3 Staff and volunteer barriers

NBIs have a tendency to be dependent on a work force of volunteers (McHale et al., 2020), a construct that concerns some stakeholders from the perspective of whether a programme is sustainable and able to fully support service users (Marsh et al., 2018). Although volunteers are considered in general to be positive contributors to NBIs, service users have pointed out some issues such as sporadic attendance and on occasion, dysfunctional relationships (Marsh

et al., 2018). Despite a claim made by Burls (2007), that many NBIs do not require qualified staff, there is an acknowledgement in the literature that insufficient human resources or skills could be an important barrier in providing support to service users with mental illness or physical difficulties (Marsh et al., 2018). He et al. (2022) also highlight that NBI staff lack skills in dealing with severe mental health issues. This sentiment brings the argument full circle in asking who NBIs are for and whether qualified clinicians or psychologists should make up part of the NBI team. One response to the level of training required by NBI staff suggests that it is imperative for instigators of NBIs to be fluent in two disciplinary 'languages'. The language of healthcare, and the language of nature (Bloomfield, 2017; Tambayah et al., 2022).

In a review of forty-nine articles exploring the international evidence for NBIs, Masterton et al. (2020) identified six studies that stressed the importance for employing confident and adequately qualified staff to coordinate the activities. Masterton et al. (2020) suggest that NBIs may fail in the absence of qualified staff and the availability of trained and confident employees with adequate experience are necessary to enable service users to increase in self-esteem and mental wellbeing, acquire new practical and psychological skills, and gain a sense of responsibility and life purpose.

Gaining a sense of responsibility and life purpose remains an important element on Norwegian care farms (Granerud & Eriksson, 2014), while an inability to provide meaningful activities contributes to participant lack of interest, boredom and an increasing likelihood of dropout (O' Brien et al., 2010; Wilson et al., 2010). Lack of meaningful activities as a cause for participant dropout has been reframed to blame some service users for having too high or

unrealistic expectations (Husk et al., 2020). However, perhaps with qualified staff trained in mental health care and accomplished in the delivery of meaningful nature-based activity, one could argue that participant expectations could be met. Another reason for participant dropout, as suggested by Lawson et al. (2022), may be the inability of staff to be able to tailor activities to the requirements of a given service user. To meet participant expectations therefore, activities would need to be coordinated to the desires of the individuals. A review of community engagement programmes in general, (Husk et al., 2020) explored what approaches work and in what circumstances. The review identified that adherence to SP programmes, and the quality of the programme delivered, can be affected by how competent, qualified, or well-trained the programme leader is. Husk et al. (2020) revealed that participants of SP interventions reported good SP activity leaders to be non-judgemental, compassionate, and able to provide personal attention and advice. The authors conclude that attendance appears to be influenced directly by the SP activity leader and that poorly trained staff can act as a barrier. Richards et al. (2020) suggest a model of outdoor mental health intervention that indicates the significance of the combination of professionalism, competence, responsibility, and leadership within the delivery of NBIs. The model suggests an integrated approach that utilises a multidisciplinary team of professionals working collaboratively (Richards et al., 2020).

The UK does not currently utilise any model of NBI delivery that either highlights the importance of highly qualified staff, or the need for an integrated approach with a multidisciplinary team. The delivery of NBIs without specific codes of practice or a regulatory body is not unique to the UK, rather the delivery of NBIs appears unregulated in general. This is of great concern when reflecting on the evidence for the need of skilled and qualified staff. Despite this, one specific form of NBI called horticultural therapy (a

professionally conducted treatment that uses horticulture to achieve therapeutic or rehabilitative goals) does have a regulating body, at least in the USA. The American Horticultural Therapy Association (AHTA) is the only organisation that recognises and registers horticultural therapists in America. The AHTA ensures that professional competencies have been achieved based on standardised academic requirements and professional training. Professionally registered horticultural therapists are expected to adhere to the AHTA code of ethics while the AHTA's standards for practise for horticultural therapy describe the expectations of professional conduct and delivery of a horticultural therapy service. To be eligible for professional registration a candidate must have a relevant bachelors degree and must have completed a 480-hour supervised internship in horticultural therapy (AHTA, 2022). This approach is far more attuned to the suggestion that NBI staff should be fluent in the language of health care and nature (Bloomfield, 2017; Tambayah et al., 2022). Furthermore, it highlights a gap in the literature for a need to explore adherence and dropout differences between services that employ staff under strict guidance set out by regulating bodies with those NBIs operating with no regulating body who often rely on staff from the volunteer sector.

1.4 Psychological, and psychosocial barriers

1.4.1 Stigma and discrimination as a barrier

People living with mental ill health remain one of the most stigmatised populations in society (Stuart, 2008). Contemporary research on stigma continues to refer to Goffman's 1963 book, 'Stigma: Notes on the Management of Spoiled Identity' for the definitive definition of what

stigma is (Link & Phelan, 2001; Major & O'Brien, 2005; Stuart, 2008; Klik et al., 2019), and therefore this review shall do the same. According to Goffman (1963) stigma is an "attribute that is deeply discrediting" and transforms a person "from a whole and usual person to a tainted, discounted one." (p. 3). It is important to note that stigma does not exist within a person but lies within a social context (Major & O'Brien, 2005). Indeed, Link and Phelan (2001) describe four social components of the stigma process. (i) The identification of human differences, (ii) the attachment of undesirable characteristics through cultural beliefs, (iii) a degree of separation being created, and (iv) the stigmatised person experiences discrimination and loss of status. The third component, degree of separation, refers to an 'us' and 'them' approach to group identities which is described by Tajfel & Turner (1979) in social identity theory and has also been detected in NBI research. For example, in a study by Whatley et al. (2015) the staff of a supported community garden programme disclosed that they had instances of volunteers who distanced themselves from service users and noted how one particular volunteer referred to service users as 'them'. Whether this data confirms the identification of a negative attitude towards service users or the stigmatising of this population, remains unclear. What has been made clear however, is that service users desire to be treated without prejudice, as human beings rather than as a mental health diagnosis, and that the attitudes of NBI staff must appear non-judgemental (Hassink et al., 2010).

The attachment of a stigmatised label as described by component four, leads to a downward placement of social status, however, Link and Phelan (2001) suggest that lower social status in itself can become the basis for discrimination. This element in the stigma process can also be found in NBI research. For instance, Crossley (2018) highlighted how at Scotswood Community Garden, a session that focused purely on mental health was dropped as the staff acknowledged a potential for stigma to be experienced from attendance. Sentiments to this

effect have also been identified where mental health service users of NBIs have expressed a dislike of feeling ‘on display’ (Murray et al., 2019), suggesting an awareness of stigma. In other research, a similar concept was shared where NBI service users reported how being less exposed through a fenced off garden was important to them (Sidenius et al., 2017). Furthermore, discrimination has been identified in research on social farms where farmers were detected as having a prejudice for carrying out activities with vulnerable people (Nazzaro et al., 2021), while research by Marsh et al. (2018) suggested how some people view gardening itself to be a low-status activity. Here, gardening was described as a not particularly high-profile activity and that the primary function of a NBI was socialisation and gaining a healthy lifestyle (Marsh et al., 2018).

The concepts described within the stigma process, and within social identity theory, might explain why some service users choose not to identify themselves as taking part in a mental health intervention. For instance, the literature often relates how NBIs are made to feel inclusive by ensuring that no distinction is made between service users and staff. This is reflected in the titles given to service users such as ‘volunteers’ (Harris, 2017), ‘members’ (Wood, Polley, et al., 2022), and ‘co-workers’ (Barley et al., 2012). Although inclusivity is the term used to describe the action of utilising the same terminology for staff and service users, it could also be construed as a strategy to achieve positive identities and manage being devalued (Tajfel & Turner, 1979). A review submitted to the Department for Environment Food & Rural Affairs (DEFRA) by Garside et al. (2020) highlights how a number of NBIs aim to reduce stigma attached to people with mental health disorders by deliberately using the same terminology for everyone working in the gardens. Whatley et al. (2015) note how participants in their research reported that it was a good thing that you could not differentiate between service users and volunteers and that the intervention was seen as more of a

community resource than a mental health service. Comparatively, Stevens (2018) describes the reframing of a service user's identity from 'patient' to 'volunteer' as a fundamental step.

The development of an identity that separates a person from the label of 'patient' or 'mentally ill' may be a barrier or facilitator for whether a person accepts a referral onto a NBI. Aughterson et al. (2020) for example, report how programmes labelled as mental health interventions can act as a barrier to attendance. This phenomenon appears particularly pronounced for certain populations such as military veterans where the labelling of an outdoor activity as 'therapy' produces a significant barrier (Bettmann et al., 2019; Bettmann et al., 2020). The de-medicalisation of NBIs, and the common terminology used for all people involved goes some way to prevent stigmatisation, however, the process is perhaps more complicated since the act of help-seeking itself can lead to an acknowledgement and connection to a mental health label (Klik et al., 2019). Social identification as a depressed person for instance, can magnify the perception of stigma, and reduce a person's wellbeing (Cruwys & Gunaseelan, 2016). Since stigma poses another threat to one's health and wellbeing, it is not unreasonable to conclude that one may choose to distance themselves from a low social status identification such as a mental health group in search of a more favourable social identity (Tajfel & Turner, 1979). Perhaps an answer to successful attendance of a mental health intervention comes down to one's own subjectivity. In a study on people with depression, Cruwys and Gunaseelan (2016) discuss how all of their participants belonged to the social category of 'depressed' however, it was only those participants who self-defined as such that were subjected to the potential of harmful social processes. Furthermore, the researchers suggested that behaviour was shaped by whether participants internalised the depression label. This research demonstrates that it may not be the official group category that is important, rather how one negotiates their identity and

psychological connection to the group (Cruwys & Gunaseelan, 2016). This construct potentially adds another dynamic to the success of NBIs. Subjective social identity, or a strategy of reframing identity may be another variable to add to the mechanisms that contribute to positive change (i.e., nature, social interaction, activity, and exercise), since the reframing would affect one's behaviour. A line of enquiry therefore presents itself with this notion. Perhaps one difference between people who are willing to engage in NBIs and those who are not, is whether they have successfully renegotiated their identity as observed in the literature. For instance, through the identification and internalisation of being a volunteer utilising a community resource as opposed to a victim of mental health care in need of therapy.

1.4.2 Cultural barriers

Individuals requiring mental health treatment will face potential barriers that will need to be overcome, however, additional barriers such as ethnicity, culture, language, and faith will also be experienced by people from ethnic minorities (Improving Access to Psychological Therapies [IAPT], 2009). Ethnic minorities may also experience different rates of mental ill-health with increased fear of stigma and a lack of culturally sensitive health services (Rethink Mental Illness, 2023). The prevalence of common mental disorders (CMDs) has been assessed with results indicating CMD prevalence is highest in the Black population (Ahmad et al., 2022). Despite this, the receipt of mental health treatment is reported lower for all ethnic minority groups in comparison to White groups with the Black population being the lowest (Ahmad et al., 2022). The UK is a multicultural country with a government census that lists 18 ethnic groups (Race Disparity Unit, Gov.UK, 2021), it is therefore important to

understand any barriers that may deter or prevent the ethnic minority groups from accessing nature and NBIs.

There is some cultural research to be found in NBI literature, however, it remains very sparse. Albert (2022) carried out an in-depth exploration into the Māori population of New Zealand when participating in NBIs (known in New Zealand as green exercise or GRx). Interviews with the Māori revealed the importance of a Māori influenced programme; however, non-Māori coordinators were not always capable of addressing the participants from a cultural perspective. One interesting element of an attempt at cultural responsiveness was the fact that if the foundation of a GRx programme was not embedded in the Māori culture, and was seen to be an 'add-on', then the outcome was detrimental to the success of the treatment. Generally, clinicians have stressed the need for culturally sensitive mental health services and research has explored whether cultural responsiveness were related to patient satisfaction and perceived treatment outcomes. Research conducted in California exploring the influence of race and ethnicity in clients' experiences of mental health treatment demonstrated that a cultural element embedded within treatment was considered important to ethnic minority patients while an exclusion of culturally sensitive treatment led to a lack of satisfaction with treatment (Meyer & Zane, 2013).

In other research, barriers suggested have included language, feeling unwelcome or out of place, cultural beliefs (Roe et al., 2016; Das et al., 2017; Skayni, 2022), and having a low affinity to nature (Morris & O Brien, 2011; Razani et al., 2020). It is possible that a lack of affinity to nature might not be a true representation of the psychological processes at play preventing ethnic minorities engaging with green spaces. For instance, 'The Countryside Charity' funded research to explore the barriers to engaging with nature for 'people of colour'

[sic]. Interview responses for not engaging included, a lack of media representation of ethnic minorities enjoying nature, anxiety around an unknown environment due to city living, a feeling of structured racism, (i.e., that natural environments were reserved for the White middle-class population), and a loss of nature connectedness through generations of non-access to nature (Hussain, 2021). Although a non-mental health intervention, 'Wanderlust Women' a hiking group set up for Muslim women and run by a female Muslim activity leader is demonstrating that there is a huge demand for this population to access nature albeit in the safety of an experienced facilitator who shares the same gender and ethnicity as the clients (Patel, 2023). One other possible misrepresentation of lack of affinity to nature concerns what natural environments have come to represent for certain ethnicities. For example, White people have come to associate natural environments as places of relaxation and recreation whereas African Americans may see such places as reminders of their subjugation and oppression (Uchida, 2003).

1.5 Chapter one conclusion

This literature review has revealed a paucity of research into the psychological, psychosocial, and physical (PPP) barriers that may deter adults with mental health disorders from participating in a NBI. In order to achieve the aim set out by the UK government of upscaling NBIs, the PPP barriers experienced by service users must be explored and understood. Therefore, there is a need for a scoping review of the PPP barriers to identify the available evidence, highlight the gaps in the literature, and ascertain the current knowledge base in this area.

Chapter 2. A scoping review of the psychological, psychosocial, and physical barriers

A version of this chapter has been published as a research article. The reference for this is:

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2.1 Introduction

Social interventions are increasingly being used for the treatment of mental disorders. Whilst the term social intervention has not been clearly defined, it has been referred to as "an intervention that promotes interpersonal-level interaction, by targeting social capital and social support within groups or communities" (Nagy and Moore, 2017). NBIs are one type of social intervention which involve any activity that takes place in the natural environment. A recent systematic review and meta-analysis exploring the effectiveness of NBIs for adults with mental disorders revealed improvements in depression, anxiety, and positive affect (Coventry et al., 2021). NBIs are used globally, with activities such as 'forest bathing' in Japan, South Korea, Poland, China, and Taiwan (Wen et al., 2019), 'mood walks' in Canada (Morrison, 2017) and care farming in the Netherlands (Hassink et al., 2020). Despite the positive impact of NBIs as a mental health intervention, there is a growing body of research into the barriers affecting NBIs such as clinical, organisational, practical, and bureaucratic barriers (reviewed in chapter one). There is however a lack of research on the personal

barriers such as the psychological (relating to a person's mind or thoughts), psychosocial (concerning processes that are both social and psychological, for instance social phobia) and physical barriers which concern the qualities connected with a person's body as opposed to their mind (Collins Dictionary, 2022). The purpose of the scoping review is to identify the current knowledge base on the above personal barriers and identify gaps in the knowledge to direct future research. Full review aims are described in 2.2 Objectives. The exploration of physical barriers should be included in the review since mental health disorders can cause a lack of motivation and lethargy (Rogers et al., 2021) while the side effects of mental health medication can cause cognitive and physical deficits (Lam et al., 2012; Morrison et al., 2015). These aspects, being referred to collectively within the thesis as PPP barriers, could prevent referral, uptake, and attendance of NBIs. Furthermore, there is a lack of personal barrier research from the perspective of the service user. Additionally, other frameworks demonstrate that the processes relied upon within the NBI paradigm, i.e., nature engagement and socialisation could themselves act as barriers to attendance. For instance, biophobia describes an aversion to nature (Ulrich, 1993) while social identity theory discusses how social processes can be detrimental to wellbeing (Tajfel and Turner, 1979). Given the commitment and investment in NBIs as a treatment for adults with mental health disorders, understanding the potential barriers that this population may encounter is essential to refining the intervention, increasing attendance and engagement, and reducing dropouts. The scoping review will address the gap in the literature and specifically focus on the PPP barriers affecting referral, uptake and attendance of NBIs for adult mental health.

2.2 Objectives

The objectives of this scoping review are to (i) Explore the breadth of evidence available in the literature on the psychological, psychosocial, and physical barriers (PPP) interrupting or preventing referral, uptake, and attendance of NBIs in the adult mental health population. (ii) Identify the known barriers and present the results descriptively and on a theme-based framework generated by the researcher. (iii) Provide a summary of the evidence which can be used to identify gaps in the literature and inform the direction of future research. The study will also provide the first in depth research into the PPP barriers of NBI participation and could inform health care providers of the extent to which PPP barriers prevent NBIs from providing a therapeutic complimentary resource towards adult mental health care. The research question for this scoping review is: What are the known psychological, psychosocial, and physical barriers interrupting or preventing referral, uptake, and attendance of nature-based interventions in adults with mental health disorders?

The definition of the term 'barrier' used in this review is as follows: An impediment to desired outcome or growth psychologically, emotionally, socially, personally, professionally, or spiritually. Barriers are used within this context as concerns expressed by varying stakeholders as anxieties, difficulties, issues, challenges, problems, etcetera, felt when confronted with participation of a NBI.

2.3 Methods

The scoping review was undertaken following the 22-item PRISMA checklist for completing scoping reviews (Preferred reporting items for systematic reviews and meta-analysis extension for scoping reviews (PRISMA-ScR) checklist), Tricco et al. (2018).

2.3.1 Inclusion criteria

The inclusion and exclusion criteria (Table 1) for this review were formulated using the PCC method (population, concept, context), as described in the Joanna Briggs Institute manual for scoping reviews (Peters et al., 2017). This was chosen over the PICOS criteria often used in systematic reviews since no comparisons or critical appraisals were being conducted in this research. The population is adults with mental health disorders (as defined by the Diagnostic and Statistical Manual in chapter 1 section 1.1), the concept is psychological, psychosocial, and physical barriers to referral, uptake and attendance, and the context is nature-based interventions (NBIs). Under the criteria of adults with mental health disorders, loneliness has been included since loneliness can lead to mental health disorders. For example, a review of loneliness and psychiatric disorders revealed that there is a correlation between loneliness and depression, stress, personality disorder, and suicidal ideation. (Victor & Yang, 2012; Mushtaq et al., 2014). NBIs are defined here as nature-based structured programmes and activities that involve either green or blue environments. These activities include (but not limited to), care farming, community gardening and food growing projects, as well as conservation, green gyms, green exercise, such as walking, cycling or local Park Runs (Department of Health & Social Care, Gov.UK, 2021). All published sources of evidence originating from any country will be included with the single limitation that the source be written in English.

The inclusion and exclusion criteria are the mechanisms by which studies were eliminated or included in the review. This was pre-determined based on the research question and objectives of the review prior to conducting the review, however, due to the exploratory nature of scoping reviews, further inclusion and exclusion criteria may continue post hoc as

suggested by Arksey and O' Malley (2005), based on the number of references generated and through continued familiarisation of the literature. Foreign language articles were excluded due to time, cost, and resource limitations, although it will be noted that relevant data may be missed. An inclusion time span has been generated starting from 1973 to the present day. This is based on the emergence of utilising nature as a mental health intervention in 1973 with the creation of the American Therapeutic Horticulture Association.

Table 1. Inclusion and exclusion criteria

	Inclusion	**Exclusion**
Population	Adults (18 – 65) with mental health disorders including loneliness	Children and adolescents (0 – 17), older adults (66+) and non-mental health specific
Barriers	Psychological, psychosocial, and physical (PPP barriers)	Non-PPP barriers such as organisational, governmental, practical, logistics, funding, and staffing issues
Intervention	Nature-based intervention (Any activity that involves nature-based engagement)	Other forms of community engagement not based in nature
Country	Any country	
Language	English	Non-English language
Study Period	1973 to present day	Before 1973
Evidence Source	Electronic databases, journals, thesis & dissertations, grey literature, books, Green social prescribing organisations	Non-English language sources

Table 1 shows the criteria by which a source of evidence was either included or excluded from the review.

2.3.2 Literature search

The search strategy was directed by the keywords formulated through the study population, concept, and context as outlined by the research question. The keywords are presented in section 2.3.3. The search strategy aimed to be as comprehensive as possible within the time and resource limitations (Peters et al., 2020). The search strategy included electronic database searching using databases identified through the University of Essex library for their range and relevance in content to the current review. The electronic database searches took place between 21st December 2022 and 6th January 2023 and included PubMed for life sciences and the health care system, Medline, which is the largest health science database and although included in the PubMed interface, Medline allows for a more focused search with the closest match of results to the terms used (University of Essex, 2023). Other databases included Web of Science for psychology and social sciences, PsychInfo for psychological, behavioural, and social science, and CINAHL which covers nursing, allied health, and social work. Reference and citation searching was conducted by checking the reference and citation lists of relevant studies generated in the database search. Hand searching through key journals such as the Journal of Therapeutic Horticulture and the International Journal of Environmental Research and Public Health was conducted to search for any relevant articles missed in the database search. A search of university dissertations and theses was conducted through EThOS, Open Dissertations and PROQuest dissertation and thesis databases, Web of Science Conference Proceedings (social science) was also searched for emerging data, and a grey literature search was conducted utilising Google Scholar, The Kings Fund, Gov.UK, Social Care Institute for Excellence, and MedNar, which is a medically focused search engine. A book search was also conducted through the University of Essex library for relevant titles and a Google search of relevant organisations such as Thrive (the largest therapeutic horticulture charity in the

UK), the American Therapeutic Horticulture Association, and other associated nature-based mental health care organisations in order to generate further possible primary sources.

2.3.3 Search strategy

The search strategy utilised the keywords and 'phrase searching' combined with the use of boolean operators in the articles full text. The boolean operator 'OR' linked keywords with MeSH headings where available, for instance, there were no MeSH headings for concept three (barriers). This method was chosen following database search guidance from the University of Essex library as using MeSH headings alone would miss out on new articles that haven't been included whereas using newer MeSH headings would not capture older articles. Therefore, the use of a combination of MeSH and keywords is considered to be the most comprehensive search strategy. Truncation symbols were employed to search for different word endings and plurals, and both English and American spelling variations were included. Limiters used within the searches were, adults 18 years +, English language, and the date of 1973 onwards (the establishment of the American therapeutic horticultural association). The expander option 'apply equivalent subjects' box was checked where available to include similar topics that may have made use of differing terminology not identified in the search string. The use of MeSH headings, truncation, and limiters were adapted to the parameters of each database. The searches were carried out one concept at a time then combined in a fourth search to produce the final result (see Table 2 and 3 for a search example).

Table 2. PubMesh headings and keywords

PubMed MeSH Headings
Concept 1. “Gardening”[Mesh] OR “Horticultural Therapy”[Mesh] Concept 2. (“Mental Disorders”[Mesh]) OR (“Mental Health”[Mesh] OR “Community Mental Health Services”[Mesh]) Concept 3. No relevant MeSH headings available
Keywords concept 1.
Green social prescribing, green prescription, ecotherapy, community gardening, care farming, nature-based interventions, nature-based programmes, nature-based organisations, nature-based health intervention, green care, social therapeutic horticulture, horticultural therapy, peer outdoor exposure therapy, green health partnerships, green health referral, green health prescription
Keywords concept 2.
Adult mental health, mental illness, mental disorder, mental ill-health, poor mental health, mental wellbeing, loneliness, social isolation, psychosocial well-being
Keywords concept 3.
Barriers, obstacles, challenges, difficulties, issues, accessibility, negatives, facilitators, enablers, psychological, psychosocial, physical

Table 2 shows the MeSH headings and keywords used to build the database search string.

Table 3. PubMed search string

Search	PubMed - Search String	Search Field	Results	Date
#1	("Gardening"[Mesh] OR "Horticultural Therapy"[Mesh]) OR ("Green social prescribing" [tw] OR "green prescri*" [tw] OR ecotherapy [tw] OR "community garden*" [tw] OR "care farm*" [tw] OR "nature-based intervention(s)" [tw] OR "nature-based progra*" [tw] OR "nature-based organisation(s)" [tw] OR "nature-based organization(s)" [tw] OR "nature-based health intervention(s)" [tw] OR "green care" [tw] OR "social therapeutic horticulture" [tw] OR "horticultural therapy" [tw] OR "peer outdoor exposure therapy" [tw] OR "green health partnerships" [tw] OR "green health referral" [tw] OR "green health prescription(s)" [tw])	Text	1586	05/01/2023
#2	(("Mental Disorders"[Mesh]) OR ("Mental Health"[Mesh] OR "Community Mental Health Services"[Mesh])) OR ("Mental health" [tw] OR "mental illness" [tw] OR "mental disorder" [tw] OR "mental ill-health" [tw] OR "poor mental health" [tw] OR "mental well-being" [tw] OR "mental wellbeing" [tw] OR "mental well being" [tw] OR "social isolation" [tw] OR "psychosocial well-being" [tw] OR "psychosocial wellbeing" [tw] OR "psychosocial well being" [tw] OR loneliness [tw])	Text	1,474,766	05/01/2023
#3	Barrier(s) [tw] OR obstacle(s) [tw] OR challenge(s) [tw] OR difficult* [tw] OR issue(s) [tw] OR accessibility [tw] OR negative(s) [tw] OR facilitator(s) [tw] OR enabler(s) [tw] OR psychological [tw] OR psychosocial [tw] OR physical [tw]	Text	2,827,176	05/01/2023
#4	#1 AND #2 AND #3	Text	156	05/01/2023

Table 3 shows the search string used in the PubMed database search.

2.3.4 Study selection

All electronic database searches, subsequent hand searching, and initial phase of the selection process was conducted by the author. References were managed in EndNote™ 20 (Clarivate, 2020) where duplicates were identified and removed. Initial selection of relevant articles was

based on title and abstract screening with the remaining articles (n = 32) read in full. The full text review was carried out by the author and the research supervisor independently with reasons for exclusion documented. Differences in selection were resolved by discussion. Selection of evidence was based on the inclusion criteria as described in the inclusion and exclusion criteria table (Table 1), and the definition of barriers table (Table 4). The psychological and psychosocial definitions of barriers were compiled through familiarisation with the literature and the aid of the definitions provided by the NHS advice sheet on mental health conditions (NHS, 2023). Examination of the full articles identified for inclusion in the reference list determined the final outcome for inclusion in the scoping review.

Table 4. Definition of barriers

Barrier	**Definition**	**Examples**
Psychological	Relating to a person's mind or thoughts	Perceived stigma or discrimination Cultural or religious background / beliefs Biophobia – dislike of nature activity Dislike of physical activity Lack of confidence Low self-esteem Lack of motivation Mental health symptoms Alteration in medication (if no specifics of barrier are discussed include in the psychological category)
Psychosocial	Concerning processes that are both social and psychological	Social phobia / shyness Afraid of not fitting in Confrontation with other service users Isolation and loneliness Feeling of exclusion Socio-economic comparisons
Physical	Concerning the qualities connected with a person's body as opposed to their mind	Medication affecting physical performance Lethargy Physical difficulties / level of fitness

Table 4 shows the barrier definitions used by the reviewers to classify the PPP barriers

2.3.5 Data charting process and data extraction

The extracted data was managed in a table created in Microsoft Word on a data charting tool (Table 5) based on the template by Peters et al. (2017) and adapted to the requirements of the current review. The data charting tool contained the key information of the source such as the name of author/s, date of publication, country of origin, population details, study design, intervention type and duration, and outcomes or findings that relate to the research question. Each reference extracted for inclusion on the charting form was assigned a number which was used again throughout the synthesis of the results in place of referencing. Data extraction of the final identified articles was charted by two reviewers, the author (MB) and the supervisor (CW) independently, with any inconsistencies discussed. A critical appraisal was not carried out since it was not relevant to the aims of the review (Tricco et al., 2018).

2.3.6 Synthesis of results

Synthesis of the results collated from each identified article were charted onto a table (Table 6), which categorises the data by the broader barrier definition, i.e., psychological, psychosocial, or physical, and by the barriers specifics (i.e., social anxiety), and also allows for a frequency count of the PPP barriers to be conducted (shown by article numbers in the parentheses). The results were also presented in depth descriptively. For clarity and to aid replicability, the definitions of barriers table was utilised as a guide in categorising the identified barriers into one of the three barrier themes (psychological, psychosocial, physical).

2.4 Results

2.4.1 Selection of sources of evidence

The electronic database search produced 827 results with the additional searches (MedNar, Google Scholar, hand searching relevant journals, reference lists and citations) identifying a further 48 results. A total of 742 irrelevant topics were removed along with the duplicates (n = 29), leaving a total of 104 records for screening. Title and abstract screening eliminated a further 72 records while the 32 records remaining were assessed by reading the full text. Of these records, three were excluded due to the population being non mental health specific with a further record excluded for the NBI activity not being an organised mental health intervention. One record reported on community engagement in general rather than specifically NBIs. Eight records made a small acknowledgement towards social difficulties but did not actually report on these as barriers in the respective studies, and likewise a further six records discussed potential barriers that were not part of the results. Three records reported on barriers from an organisation perspective, and one study reported on the need for barrier research to be carried out. A total of nine studies were identified for inclusion by the author (MB) and research supervisor (CW), with any inclusion uncertainties discussed between both reviewers. The results of the search strategy can be viewed in the PRISMA flow diagram (Figure 2).

2.4.2 Characteristics of sources of evidence

All studies included in the review were qualitative in design utilising semi-structured interviews which took place face-to-face, over the telephone, online using Skype or Teams, and in focus groups. In total across the nine studies, 167 stakeholders were interviewed. These included 85 NBI service users and 82 NBI providers described across the studies as GPs, mental health clinicians, link workers, social workers, board members, managers, coordinators, and volunteers. Five studies reported on age which ranged from 20 years to 91 years. Although the study reporting the high age of 91 (Barley et al., 2012) was outside the age inclusion criteria, the study population concerned was adults in general ranging from 38 - 91 and not specific to older adults and therefore 91 would be an outlier. Only four studies reported on gender with a total of 19 service users being male, and 18 service users being female (Kyriakopoulos, 2011; Barley et al., 2012; Harris, 2017). Tambayah et al. (2022) reported their mental health clinician population as 80 percent female.

The NBIs reported in the studies (where stated), were gardens; with four studies describing gardens run by charities (Barley et al., 2012; Harris, 2017; Sidenius et al., 2017; Wood, Polley, et al., 2022) and one study describing community gardens (Marsh et al., 2018), care farms (Iancu et al., 2014), and adventure therapy (Kyriakopoulos, 2011). The remaining two studies did not report on the specifics of the NBI and merely used the terms ‘nature-based interventions’ (Tambayah et al., 2022), and ‘green social prescribing’ (Fixsen & Barrett 2022). Intervention duration across the nine studies ranged from six weeks to eight years, with one study reporting a single day (Kyriakopoulos, 2011). Three studies did not report on duration (Marsh et al., 2018; Fixsen & Barrett, 2022; Tambayah et al., 2022). The countries

of origin represented in the included review were UK (n = 5), Australia (n = 2), Netherlands (n = 1), and Denmark (n = 1). Of the aims expressed across the nine studies, five explored the general views and experiences of service users with no specific aims to examine barriers (Kyriakopoulos, 2011; Barley et al., 2012; Iancu et al., 2014; Harris, 2017; Sidenius et al., 2017), three explored NBI providers' perceptions and responses to the implementation and function of NBIs (Marsh et al., 2018; Fixsen & Barrett, 2022; Tambyah et al., 2022) with only one of these specifically looking at the challenges (Fixsen & Barrett, 2022), and one study explored the impact of NBIs on the mental health of service users along with a specific aim to identify barriers and facilitators (Wood, Polley, et al., 2022).

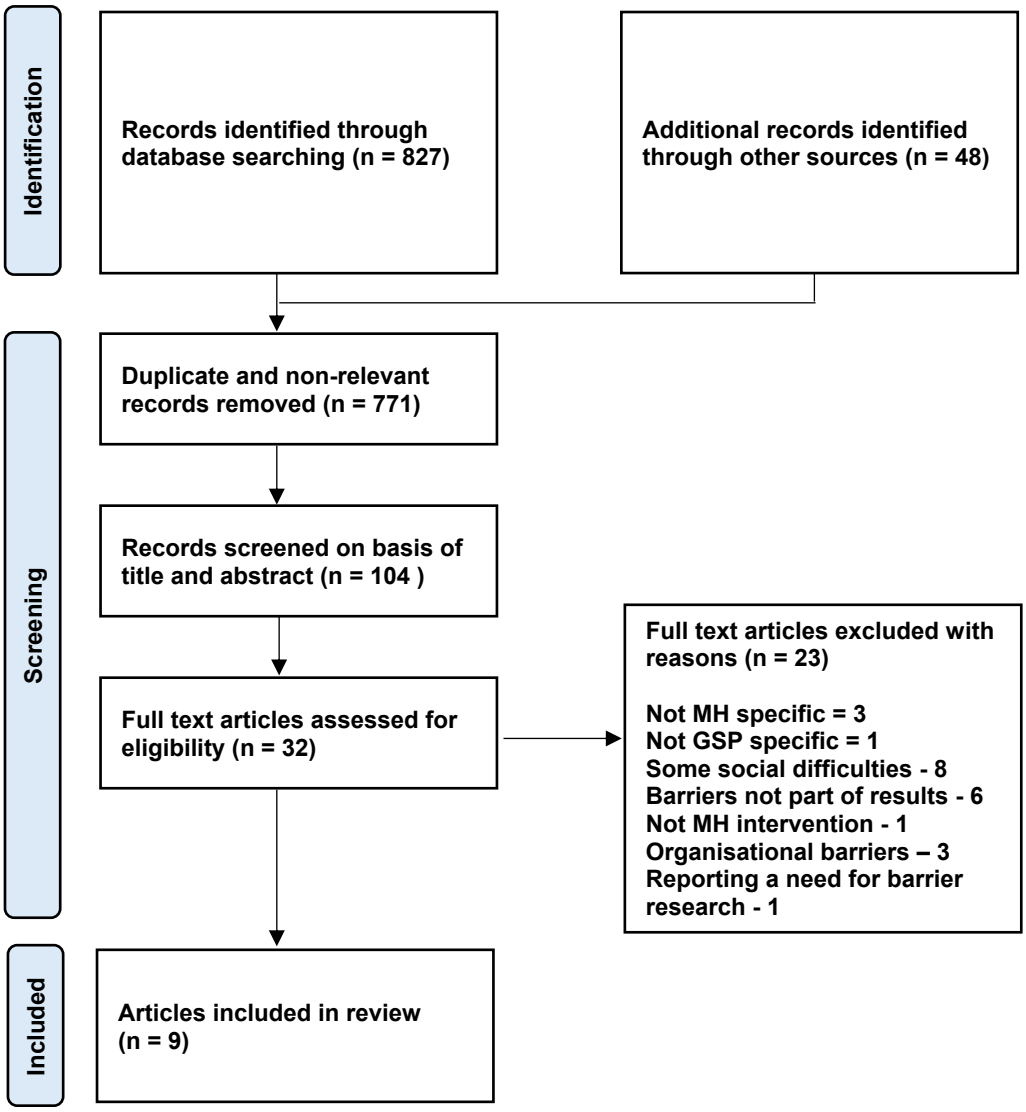

Figure 2. PRISMA flow chart (Tricco et al., 2018).

Table 5. Data charting tool (Peters et al., 2017)

Study ID Nº.	Authors, Date and location	Study Design	Setting	Population	Intervention (duration)	Barrier outcomes and findings
1	Barley, Robinson, & Sikorski. (2012). London, England	Qualitative - semi-structured interviews	Primary care based horticultural & arts rehabilitation project, Sydenham Garden	16 adult mental health service users referred to as co-workers. 9 male 7 female. Age 38 - 91	Various attendance 2 - 4 years (n =4) 1 - 2 years (n =2) 3 - 12 months (n=5) 6 weeks (n =1)	Initial apprehension. Support needed to attend. Forced attendance. Participants claiming ownership, achievement comparisons. Resentment and exclusion feelings.
2	Fixsen, & Barrett. (2022). England & Scotland	Qualitative interviews via Skype, Teams, Telephone 30 - 60 min interviews	4 different NBI programmes in Scotland (n =3) and England (n =1)	Interviewees various stakeholders (n = 28) GP's, link workers, managers, volunteers, researchers	No data given on any particular NBI service attendance or duration	Cultural expectations - to be prescribed medication. NBI not greeted with enthusiasm. Building trust with link workers. Stigma, social judgement on body ideals to outdoor recreation activities.
3	Harris. (2017). England	Qualitative - 2 Focus groups	1 acre walled garden run by a charity	Adult mental health service users with regular programme attendance (n =15) 7 male 8 female	Weekly gardening sessions up to 4 per week - open ended attendance. Average attendance 4.3 years	Deterioration in mental health (discussed as a temporary barrier) Lack of agency Lack of confidence to attend without a link worker.
4	Iancu, Zweekhorst, Veltman, van Balkom, Bunders (2014). Netherlands	Qualitative - semi-structured interviews	13 care farms in 2 provinces in the Netherlands. 1 run by a mental health service, 12 owned privately	14 care farm service users. Age 18 yrs + (mean age 39.6 yrs). Predominantly Male	No data on any particular care farm attendance or duration	Mental health deterioration, tiredness, lack motivation. Social issues, peer relationships burdensome, arguments, not wanting to listen to others' mental health problems.

5	Kyriakopoulos (2011). UK	Qualitative - semi-structured interviews. 35 - 45 mins	A major UK university. Adventure Therapy (AT) location not given	9 students / service users (only 6 interviews transcribed). White British, F = 3 age 20 - 22, M = 3 age 20 - 25	Combined one-to-one counselling (10 - 15 sessions) before AT, half day information and ice breaker session, one day of AT	Intense feelings of anxiety, fear of negative judgement, fear of not fitting in, isolation and rejection, fear of being a disappointment to others.
6	Marsh, Brennan & Vandenberg. (2018). Tasmania	Qualitative semi-structured face-to-face interviews (n =16) and telephone interviews (n =12) Interviews at a garden site (n =16)	Community gardens in various locations. Veterans & families garden plot.	Interviewees (n = 26). Coordinators, volunteers, board members, managers, visiting social workers and other service providers	No data given on any particular NBI service attendance or duration	Volunteer attendance sporadic and volunteer relations were sometimes dysfunctional. Mental illness and lack of confidence, service users want someone to support them and to accompany them to the programme.
7	Sidenius, Stigsdotter, Varning Poulsen, & Bondas. (2017). Horsholm, Denmark	Qualitative Semi-structured interviews approx. 20 mins	Nacadia Therapy Garden	14 Nacadia service users with stress related diagnosis from ICD-10. Age 20 - 60	3 days per week, for 3 hours per day. Up to a maximum of 10 weeks	Initial start challenges – hesitant, anticipation. Social difficulties - how to interact with others, desire to withdraw socially, need to develop social coping strategies. Poor mental health - difficult to find a suitable location / activity.
8	Tambyah, Olcoń, Allan, Destry, & Astell-Burt. (2022). Australia	Qualitative Semi-structured interviews	NBI within community mental health services, Illawarra	Mental health clinicians (n =15) with a range or 2 - 40 years' experience. Age 28 - 61. 80% female	No data on any particular NBI service attendance or duration	Mental health symptoms - lack of motivation, anxiety, panic attacks, socialising fears, social judgement, social comparison. Scepticism of NBI, GP buy-in, Medical model, no nature connection, physical limitations, lack of energy, not liking the activity.

9	Wood, Polley, Barton, & Wicks. (2022). Essex. UK	Qualitative Semi-structured interviews via zoom (n =10) & telephone (n =3) 20min -1hr 23min and focus groups x 4. Total = 20 garden members. 30min - 1hr.	Trust links mental health charity. Growing Together = 4 therapeutic garden sites.	Staff (n =5), volunteers (n =5), link workers (n =2), primary care mental health team (n =1). 20 service users (called members)	Attendance ranging from 4 months to 8 years	Unknown aspects of NBI. Meeting new people. Mental ill health. Changes to medication or failure to take medication. Upsetting other members & negative perception of social encounters. Physical health conditions, inability to engage, increased awareness of limitations.

Table 5 shows the characteristics of the nine sources of evidence included in the review

2.4.3 Results of individual sources of evidence

None of the nine studies identified for inclusion specifically or solely focused on the psychological, psychosocial, or physical barriers (in whatever form i.e., as challenges, difficulties, issues, or concerns) as written in the aims of this scoping review. The current research therefore extracted data by screening through all the themes presented across the entire interview data set of all nine studies. Some theme titles denoted that the data was barrier relevant such as 'Barriers to referral, uptake and engagement', from Wood, Polley, et al. (2022), while other themes gave no indication that they would contain barrier data, for example, 'Improved wellbeing' and 'Ownership' as described in Barley et al. (2012). The majority of barriers were standalone barriers unique to the study that generated them (n = 36) with some barriers demonstrating possible universality (n = 11). Despite this, a synthesis of the results was possible by reducing the 47 identified barriers down into 10 themed barriers by grouping similar concepts together as shown in Table 6. For clarity, Table 7 describes each of the 47 barriers and provides an example extract for each barrier from one of the included studies.

Table 6. Synthesis of results showing barrier groups by category

Psychological Group	Mental Health	Referral	Activity		
Barriers	Mental health deterioration (3, 4, 6, 8, 9) Lack of confidence (3,5,6) Anxiety (5,8) Medication (9) Lack of self-esteem (9)	NBI hesitancy (2,7,8,9) GP buy-in (8) Forced attendance (1) Loss of agency (3) Medical model expectation (2)	Lack of Motivation (4,5,8) Dislike of activity (8) Lack of nature connectedness (8)		
Psychosocial Group	Social	Peers	Perception	Support	Public
Barriers	Social phobia (4, 5, 7, 8, 9) Judgment (2,5,8) Stigma (2,8) Dwelling on patient identity (4) Development of coping strategy (7) Need to withdraw socially (7)	Not fitting in (5,8) Achievement comparisons (1) Peer garden ownership (1) Resentment (1) Peer arguments (4) Burdensome peer relationships (4) Volunteer attendance (6) Volunteer relationships (6) Social Comparisons (8) Upset by peers (7)	Exclusion (1) Isolation and rejection (5) Disappointment to others (5) Upsetting others (9) Negative social encounters (9) Done wrong (9)	Supported Attendance (1,3,6) Initial apprehension (1) Link worker relationship (2) Additional intervention required (5)	Dislike public space (7,8) Socially undesirable (8) Panic attack in public (8)
Physical Group	Physical Health	Energy			
	Poor physical health (8,9) Inability to engage (9) Awareness of limitations (9)	Lack of energy (8) Tiredness (4)			

Table 6 shows the three PPP barrier groups and their barrier subgroups (study ID numbers in parentheses.

Table 7. Barrier definitions and example extracts

Barrier (Alphabetical Order)	Description of Barrier	Example Extract from Article (ID in Parenthesis)
Additional Intervention Required	Having a need to undertake counselling prior to participation in a NBI	On the day I would have been a little bit too scared but the counselling kind of gave that little bit of extra push to go all the way. (5)
Anxiety	Feelings of excessive worry, fear, dread etc…	…this feeling of anxiety started to develop from the moment they accepted the referral to the outdoor transaction, gradually increasing in intensity as the event day drew closer… (5)
Achievement Comparisons	Comparing your accomplishments with others	…well there's a lot more people in this garden, I'll be honest, they've done a lot more work to what I've done… (1)
Awareness of Limitations	Partaking in activity highlights service users' physical abilities	Sometimes it's difficult when you want to do something and your physical problems mean you are going to suffer afterwards… (9)
Burdensome peer relationships	Socialising with other service users is a burden	Negative accounts of peer relationship were reported by the majority of participants on care farms. They described the relationships based on peer status as burdensome… (4)
Development of Coping Strategy	Developing a way to cope with participating in a NBI	…it took several participants some time to develop strategies to cope with the presence of others, and to get along with the other participants… (7)
Disappointment to Others	Worrying about not living up to other people's expectations	…they feared … being a disappointment to others. (5)
Dislike of Activity	Not enjoying the activities available through the NBI	A lot of people just don't like exercise. (8)
Dislike Public Space	Not wanting to be participating in a NBI in public	The perception of being less exposed and being sheltered from the outer world in the fenced-off garden seemed to be an important part of creating a safe environment… (7)
Done Wrong	Believing you have made an error	… I sometimes think I've done wrong and it stops me coming again because I think to myself, I shouldn't have done that… (9)
Dwelling on Patient Identities	A dislike of being identified as a mental health patient	…users were more likely to share personal problems, to constantly refer to situations related to mental disorders, and therefore to dwell on their patient roles. These participants avoided sharing their own problems with other users and disliked it when other users brought up their issues. (4)
Exclusion	Feeling like you are being left out or excluded	It's a woman's only group in the morning, which I felt a bit miffed about, because I felt it's a community garden, I'm part of the community, why can't I be here? (1)
Forced Attendance	Feeling like you are being persuaded or coerced to attend an NBI	I wasn't 100% over happy about doing it. I felt like I was a bit obliged to do it, so I'm not happy about being obliged to do it… (1)
GP Buy-In	Clinician needs to be personally enthusiastic about NBIs in order to 'sell' it to the patient	Their willingness to recommend NBIs to consumers appeared to be linked with their personal connection with nature. (8)
Inability to Engage	Having limited ability to fully engage with the NBI activities	For one member, their inability to engage fully in gardening tasks and the recognition that their condition was degenerative gave them the 'hump'. (9)

Initial Apprehension	Apprehension felt after referral or at the joining of a NBI	Several coworkers recalled initial apprehension: 'I was a bit worried, but after a couple of weeks, I sort of settled in.' (1)
Isolation and Rejection	Not being welcomed by other people or being left out of the group	…they feared becoming the recipient of other group members' negative judgements, not fitting in, becoming isolated and rejected… (5)
Judgement	Worried about being judged by other service users	…she's worried about people watching her while she's walking and what they think of her. (8)
Lack of Confidence	Not feeling confident enough to attend or participate in a NBI	…without the prior counselling they would not even have considered participating in the outdoor event because they would have lacked the required confidence… (5)
Lack of Energy	Not feeling energetic enough to participate in a physical mental health intervention	Lack of motivation, lack of energy, lack of belief in the process… (8)
Lack of Motivation	A lack of desire or willingness to engage in a NBI	…clinicians claimed that lack of motivation when depressed…would be a major hindrance to participation. (8)
Lack of Nature Connectedness	Not feeling a connection to nature therefore not benefiting holistically from nature engagement	One clinician described her consumer's response to a recommendation to spend more time in nature…the idea of going for a bushwalk just seemed quite weird to her like, 'Why? Why would you do that? (8)
Lack of Self-Esteem	Being self-critical and feeling inferior to other people	Staff described how members are often lonely and isolated or lack confidence and self-esteem when they join. (9)
Link Worker Relationship	The Link Worker is a professional that makes up part of the clinical team in the green social prescribing pathway	The Link Worker was often a client's first point of call, so building a trusting relationship was paramount… (2)
Loss of Agency	Inability to make decisions or have control over one's life	…an episode of ill-health and accompanying loss of agency…may inhibit engagement in that moment. (3)
Medical Model Expectation	The expectation to receive pharmaceuticals or an evidence-based treatment such as CBT	Patients' notions about the role of the GP as there to prescribe medications were deeply entrenched in western society… (2)
Medication	Undesirable side effects from taking prescribed medication or failure to take medication	Staff and members described how declines in mental health, changes to medication or failure to take medication could cause members to disengage. (9)
Mental Health Deterioration	A period of poor mental health or decline in mental wellbeing	Reasons put forward centred upon personal explanations in relation to poor mental health emphasising the ups and downs characteristic of mental health distress: 'I'm just trying to explain that it can be, it's mental health… (3)
NBI Hesitancy	A reluctance to engage in a NBI or having a disbelief in the benefits of a NBI as a treatment for mental health disorders	Clinicians perceived that some consumers might not be willing to participate in NBIs due to scepticism and unawareness of its benefits. Clinicians highlighted that some people are oblivious to the natural environment and thus dismissive of its health/wellbeing benefits. (8)
Need to Withdraw Socially	A desire to remove oneself from social engagement	So, when I feel good, I choose something social and when I don't feel so good, I choose something more withdrawn where I can be myself. (7)
Negative Social Encounters	Experiencing a social encounter in a negative way	…their mental health status negatively affected their perception of social encounters… (9)

Not Fitting In	Feeling out of place and unable to join in	… fear of having to socialize and/or not fitting into the group… (8)
Panic Attack in Public	Concern over people witnessing a panic attack episode	…consumers with anxiety and social phobia might feel uneasy about being in public spaces and concerned about a potential panic attack in front of others. (8)
Poor Physical Health	An impairment of normal physical function	…members with physical health conditions described how tasks could exacerbate issues… (9)
Peer Arguments	Arguments between service users of NBIs	… as peers, they argued… (4)
Peer Garden Ownership	Service users taking ownership over an area of a community garden	…the sense of ownership led to feelings of resentment when things did not go their way, such as: when their ideas had not been carried out; when, on one afternoon, men are excluded; or in tensions between groups over use of space… (1)
Resentment	A feeling of being treated unfairly	Cause as soon as I put [suggest] something, I get pulled back cause someone else has got it all. (1)
Social Comparisons	The evaluation of oneself or their abilities or traits	…sometimes, people, young people within that age group, the person who's sort of presenting well is going to be like, "I'm not unwell like that person, I'm not coming". (8)
Social Phobia	Having a fear of social situations	The most pronounced challenge that needed to be overcome was getting to know, and getting on with, the other participants… (7)
Socially Undesirable	Feeling embarrassed partaking in a social activity or behaviour. A concern over social status	…socially it would not be considered a "cool thing to do". (8)
Stigma	A set of negative beliefs held by a group or society	Due to existing mental health stigma, some consumers could feel ashamed to walk with the group in a community setting. (8)
Supported Attendance	The need to have someone accompanying you in order to attend a NBI	To help with this nervousness in attending, some coworkers reported being accompanied, initially, by a healthcare worker. (1)
Tiredness	A decline in strength and energy	Several participants on both care farms and day centres referred to periods of deterioration, when they felt tired… (4)
Upset by Peers	Service users cause distress to others	Some were worried about the disturbances other participants might cause them… (7)
Upsetting Others	Concern over being a cause of distress to other service users	One member spoke of concerns around upsetting other members as a barrier to regularly attending… (9)
Volunteer Attendance	The reliance on volunteers to commit long term and help run NBIs	… some participants noted that volunteers were sporadic attendees …the reliance on volunteer labour was thought to hamper sustainable activities in some instances. Insufficient human resources or skills are an important barrier to being able to engage… (6)
Volunteer Relationships	The quality of relationships between service user and volunteers	… volunteer relations were sometimes dysfunctional. (6)

Table 7 shows a definition for all 47 barriers with an illustrative extract

2.4.4 Synthesis of results

Psychological groups

The psychological barriers identified in this review can be catalogued into three distinct barrier groups labelled mental health, referral, and activity. The mental health group contains five barriers of which deterioration in mental health was the most prevalent barrier and described within Iancu et al. (2014), Marsh et al. (2018), Tambyah et al. (2022), Wood, Polley et al. (2020), and Harris (2017), although Harris commented that mental health acted as a temporary barrier. Tambyah et al. (2022), stated that both mental health symptoms and management were barriers, as did Wood, Polley et al. (2022), however, their data elaborated on the management barriers and reported that changes to medication, and the failure to take medication acted as barriers. Further psychological barriers that were identified by more than one study included a lack of confidence (n = 2), and anxiety (n = 2). Lack of confidence was identified by Harris (2017) and Marsh et al. (2018) although neither study reported this barrier through data generated by a service user. Both studies described lack of confidence as a suspected reason for service users not attending without support, however, one data extract was the opinion of a volunteer (Harris 2017), and the other the opinion of a community gardener (Marsh et al., 2018). Anxiety was mentioned as a potential barrier in two studies, Tambyah et al. (2022) and Kyriakopoulos (2011). Tambyah discussed anxiety as a mental health symptom linking it in with social phobia while Kyriakopoulos reported how service users developed an intense feeling of anxiety prior to the intervention at referral stage. This anxiety increased as the intervention start date got closer. Akin to Tambyah, all reasons for the anxiety were related to the social aspects of NBIs. Finally, lack of self-esteem was

identified by one study (Wood, Polley et al., 2022), however, as with the barrier 'lack of confidence', the self-esteem barrier was not reported by a service user. In this instance, a staff member suggested that service users often lack self-esteem when they join.

The referral group contains five barriers. These are, forced attendance, loss of agency, GP buy-in, GSP hesitancy, and medical model expectation. GP buy-in was the second most reported barrier across the psychological barrier groups (n = 4). Tambyah et al. (2022) highlighted a level of scepticism, a lack of awareness of NBIs, and a lack of belief in NBIs. This barrier is bi-directional however, as Fixsen and Barrett (2022) reported that referral is influenced by the interest or lack thereof of the GP, and a patient's expectations to be prescribed medicine. Notable standalone barriers in the referral group of barriers include hesitancy and anticipation on joining a NBI (Sidenius et al. (2017), the unknown aspects of joining a NBI (Wood, Polley et al., 2022), loss of agency (that is the ability to act autonomously or independently), (Harris, 2017) and forced attendance (Barley et al., 2012). The forced attendance was only reported by one service user and was discussed not as a barrier to participation, but as a barrier to benefiting from the known health benefits of NBIs. In this study, participation was done so less than enthusiastically with the service user reporting being unhappy about doing it.

The activity barrier group contains three barriers. Lack of motivation, a dislike of the activity, and not feeling connected to nature. Lack of motivation appears to be linked to different psychological facets. Tambyah et al. (2022) and Iancu et al. (2014) both describe a lack of motivation as a symptom of mental health deterioration, however, Tambyah also considers lack of motivation as a barrier in response to the intervention i.e., a disbelief in NBIs, and to

the activity i.e., a dislike of physical activity. This barrier, therefore, could be considered a mental health barrier, a referral stage barrier, and an activity barrier. A lack of nature connectedness is a significant barrier since NBIs involve nature engagement. This barrier could manifest itself because of the specifics of the intervention, i.e., nature-based activity, or could quite plausibly occur at referral stage. For instance, clinicians have suggested that some people are oblivious to the natural environment, sceptical of its health benefits, and see no value in participation (Tambyah et al., 2022). One clinician described that a client responded to the suggestion of participating in a NBI with the question of why would a person want to do that (Tambyah et al., 2022). The third barrier categorised here was a dislike of the activity and was discussed solely around the possibility of service users not wanting to participate in physical activity. For example, a dislike of walking, and a dislike of exercise in general (Tambyah et al., 2022). In this study, clinicians believed that service users would be reluctant to join a NBI if they were not physically fit.

Psychosocial groups

The largest amount of data was collected in the psychosocial barrier category and was represented across all nine studies. Four studies created themes specifically on social aspects which were titled ‘Social support and relationships’, (Wood, Polley, et al., 2022), ‘Relationships’ (Barley et al., 2012), ‘The social domain’ (Iancu et al., 2014), and ‘Changing interpersonal relationships towards group members’ (Kyriakopoulos, 2011), although only Iancu et al. (2014) and Kyriakopoulos (2011) actually coded psychosocial difficulties under these themes. Wood, Polley, et al. (2022) stated how service users received more support from each other than they did from staff although there was no mention of staff as being a

barrier in any way. A total of 28 individual barriers were identified in the psychosocial category and grouped into 5 themed groups labelled Social, Peers, Perception, Support, and Public.

Within the social group, the most frequently occurring barrier was that of social phobia, or fear of socialising and was reported over five studies (Kyriakopoulos, 2011; Iancu et al., 2014; Sidenius et al., 2017; Tambyah et al., 2022; Wood, Polley, et al., 2022). The mechanisms behind why this barrier exists is unexplored, however, a fear of social judgement could be a contributing factor since it was the second most frequently reported barrier in this group (n = 3). The final barrier in the social group that was identified in more than one study was stigma (n = 2). Stigma was described by Fixsen and Barrett (2022) as a result of low socioeconomic status (albeit in the discussion section after the results). It is unclear whether this is in response to findings in the study, however, the two locations featured in the research were both located within the ten percent most socioeconomically deprived areas of Scotland and northern England. Tambyah et al. (2022) was the second study to report on stigma with data from clinicians suggesting that stigma can arise from socialising in a mixed abilities group, or through association with a mental health group. One clinician stated that some consumers might feel ashamed to be seen in public with a mental health group. Another data extract indicated that service users may not want to socially identify with people deemed unwell if they themselves did not identify with this label. The last three barriers catalogued in the social group were all standalone barriers unique to the study that identified them. These were dwelling on patient identities, which was described as the sharing of mental health problems, a dislike of hearing about others' mental health problems (Iancu et al., 2014), the ability to be able to develop a social interaction coping strategy, and a need to be able to withdraw socially and work alone (Sidenius et al., 2017).

The Peer group of barriers was by far the largest grouping of barriers (n = 10) however, all barriers were standalone barriers but one, ‘not fitting in’, which was identified by Tambyah et al. (2022) and Kyriakopoulos (2011), though neither study elaborated on the reasons for this barrier. In Barley et al. (2012), despite the research having a theme for relationships, which was found to contain only positive findings, three barriers were reported in relation to peer relationships under a different theme titled ‘Ownership’. These included outcome comparisons with other service users over activity-based achievement, elements of some service users taking ownership over areas of the garden, and resentment towards other service users (as a result of the ownership). Other research identifying barriers involving peers included, making social comparisons with other service users (Tambyah et al., 2022), concern from some service users over whether group peers would cause them disturbances (Sidenius et al., 2017), arguments between peers, and peer relationships described as burdensome (Iancu et al., 2014). As well as negative peer relationships, there were a few concerns reported around volunteer relationships. Data extracts that remained unique to just Marsh et al. (2018) described how NBIs rely upon volunteers to provide enough staff to carry out the activities. Data extracts for this topic demonstrated that attendance from volunteers could be sporadic and that relationships with volunteers were sometimes dysfunctional.

The Support group contained three barriers of which only one barrier, attendance, was identified in multiple studies (n = 3). Supported attendance was reported by Barley et al. (2012) who identified how some service users felt too nervous to attend alone, while the data generated in Marsh et al. (2018) and Harris (2017) attributed supported attendance to a lack of confidence and mental illness. Supported attendance was discussed as a persistent barrier in Harris (2017) with one interviewee stating that when the assisted attendance stops, service users do not have the confidence to return alone. Another form of support comes from the job

role of the link worker, who is often the first point of call after referral. A suggested barrier associated with the link worker is that it is of paramount importance that a trusting relationship is built between service user and link worker (Fixsen & Barrett, 2022). The third barrier in the support group is initial anxiety. This barrier was reported in Barley et al. (2012) under the theme 'Joining and motivations' with data describing how service users experienced initial apprehension, felt worried from the first couple of weeks, and chose not to attend until they were persuaded to do so. This initial anxiety to attend was alleviated through being accompanied to the intervention.

All the barriers catalogued in the Public group (n = 3), came from the study by Tambyah et al. (2022). Mental health clinicians in this study were concerned that being in a public space and the possibility of suffering a panic attack in public were potential barriers to service users with social phobia. One clinician described how a client of theirs was worried about people watching her and what they might be thinking of her. Furthermore, Tambyah et al. (2022) described how clinicians thought that group dynamics would present challenges to some service users. An example suggested was that younger participants may consider being grouped together with older people, or people less physically able, as socially uncool.

The final group to discuss in the psychosocial barrier groups is the Perception group. This group contains six potential barriers identified across three studies, and, as the group label suggests, are all perceived barriers existing in the minds of the service user. Wood, Polley, et al. (2022) identified a total of three perceived barriers which were concerns over upsetting other service users, a negative perception of social encounters, and believing in having done something wrong. This last perception was reported by one service user who admitted that

the belief in having ‘done wrong’ would result in them not returning to the intervention. Kyriakopoulos (2011) identified two perceived barriers which were related and included concerns over being a disappointment to other service users, and subsequently, worrying over becoming isolated and rejected. The last barrier catalogued in this group was perceived exclusion (Barley et al. (2012). Exclusion was perceived when things did not go the way a service user wanted it, when ideas put forward were not carried out, and not understanding why men cannot attend a women only session.

Physical groups

The physical barriers were the least reported barriers only occurring in three out of the nine studies. A total of five barriers were reported (poor physical health, inability to engage, awareness of limitations, lack of energy, and tiredness). These have been divided into two distinct groups, the physical health group, and the energy group. Of these five barriers only one barrier (poor physical health), was reported in more than one study (n = 2). Wood, Polley, et al. (2022) identified how taking part in physical activity could exacerbate physical health problems. One data extract from their study stated how physical engagement might result in some form of suffering afterwards. Furthermore, data suggested that physical health issues resulted in an inability to engage fully in gardening tasks which led to an increased awareness of degenerative conditions (Wood, Polley, et al., 2022). The second study did not identify poor physical health as a barrier, rather the barrier is suggested by a clinician. Here the clinician believed that physical limitations may contribute to a reluctance to join NBIs (Tambyah et al., 2022). The second physical barrier group (the energy group), contained lack of energy, which again, was a suggested barrier by a mental health clinician (Tambyah et al.,

2022). Tiredness was the only other barrier to be catalogued in this group, however, the origin of the reported tiredness is not transparent within the results, although there is a suggestion that it may be linked to a deterioration in mental health (Iancu et al., 2014).

2.5 Discussion

2.5.1 Summary of evidence

This scoping review is the first to explore what is known about the PPP barriers experienced by adult service users of NBIs for mental health disorders. The psychosocial barriers were the most numerous (n = 29) followed by the psychological barriers (n = 13) then physical barriers (n = 5). Mental health, a fear of socialising, and a disbelief in NBIs as a treatment for mental disorder were the most frequently identified individual barriers. The evidence identified in this review demonstrates a paucity of research on the PPP barriers with some studies obtaining data on barriers incidentally through explorations of the general experiences of service users as opposed to exploring barriers through a focused lens. The majority of data identified were standalone extracts unique to the study that identified them. This may be expected given the nature of qualitative research and the fact that such a small body of relevant research was identified. Despite this there were a range of barriers reported which included a number of commonly occurring barriers.

Firstly, the most frequently disclosed psychological barrier was a deterioration in mental health. This could also have an effect on many other reported barriers such as confidence, motivation, self-esteem, anxiety, depression, and social difficulties since results from an

American-based national comorbidity survey suggested comorbidity is the rule across all psychiatric disorders (Kessler et al., 1994). Close behind the mental health barrier for frequency was a hesitation in NBI uptake. This finding supports the discussion in the literature on the cultural norms of the western medical model to be prescribed medication, and indeed an account of an expected medical approach to treatment was identified in this review (Fixsen & Barrett, 2022). Further data in support of this was an account of GP buy-in (Tambyah et al., 2022) where the success of the NBI referral is determined by the enthusiasm and personal belief system of the mental health practitioner in order to positively encourage or influence the client. Available research exploring patient treatment preferences is limited, however, existing research demonstrates around 50 percent of patients have an expectation to receive a prescription for pharmaceuticals (Himmel et al., 1997; Wu et al., 2017). Furthermore, patient treatment preferences are positively associated with doctor's medical decision making and prescribing behaviour, a correlation that extended to all drug types (Rinaldi, Bullo, & Schulz, 2025).

Another standalone data extract, albeit a significant one, refers to a feeling of forced attendance (Barley et al., 2012). This notion was also discussed in the literature and described the potential for this perceived coercion to lead to a reduction in intervention satisfaction and increased anxiety. Although not disclosed within the study, the reduction in intervention satisfaction may manifest itself since forced participation takes a person's autonomy away which is suggested to be one of the basic psychological needs for life satisfaction (Deci & Ryan, 2000). Finally, two findings in the psychological category stated a dislike for the activity. One data extract referred to a dislike of physical activity, and the other provided possible evidence in support of the biophobia hypothesis, with a lack of understanding why one would want to engage in nature at all. These extracts provide ammunition to the question

of what constitutes as meaningful activity. The availability of personally meaningful activities may be lacking in NBIs, or community engagement initiatives in general. For example, a systematic review on facilitators and barriers of delivering SP services revealed limited services and activities that may not suit service users' needs, while SP link workers reported difficulties to refer service users to appropriate services and activities (Pescheny et al., 2018). Furthermore, a reason described for patient disengagement from SP interventions was a lack of interest and low motivation to initiate engagement. Although not stated, the limited scope of community engagement services may lead to patients being referred to a programme that is merely available rather than suitable, and the lack of interest and low motivation observed in referrers could manifest from a mismatching of community engagement activity type with the service user. Indeed, with the suggestion of limited community engagement services in one's locality, it could be difficult to deliver activities that fulfil the meaningful activity definition as presented in occupational therapy, i.e., self-chosen derived from personal interests, preferences, values, motivations, pleasure and sense of importance (Trombly, 1995). Additionally, Hooker, Masters, Vagnini and Rush, (2020) report that most researchers exploring the effect of meaningful activity on a person's wellbeing pre-determine which activities are 'meaningful' further demonstrating a disregard for the importance of activities that are personally meaningful.

A frequency count of the psychosocial barriers revealed a similar pattern to the psychological results, that the majority of the barriers were standalone statements. This suggests that the barriers were personally subjective experiences linked to individuals, however, there were a few commonly occurring psychosocial barriers also. The most frequently discussed barrier was social phobia or the fear of socialising. This finding reflects a recent UK governmental report on NBIs where the most common 'attitudinal' barrier identified was not wanting to

take part in activities with unknown people (Department of Health & Social Care, Gov.UK, 2023). Extracts in this scoping review mirror this notion where one service user describes the need to remove themselves away from the social aspects when they do not feel like engaging, while other data reported the need for coping strategies to be developed in order to socialise (Sidenius et al., 2017). There is no exploration however, of what could become of a service user who is unable to develop a socialising coping strategy. This is a challenging concept since NBIs as a mental health treatment rely on socialisation as one of its active mechanisms for positive change. However, some research claims that the socialisation is the most enjoyed and salient aspect of NBIs (Barley et al., 2012).

Another frequently mentioned barrier in the psychosocial category was the need to be accompanied to the NBI by a member of the mental health support team. This required support system was not necessarily a one-off occurrence to initiate first contact, it was suggested that for some, continued support was needed in order to maintain attendance (Harris, 2017). This finding supports the discussion in chapter one on the psychological distress experienced when entering a new social environment, i.e., bewildering and dislocating, feeling alienation, and exclusion, and lacking confidence (Christie et al., 2008; Millman & McNamara, 2018). If a non-mental health population can experience this level of distress, one can only surmise that a population clinically diagnosed with mental health issues would experience a heightened version of this when entering a new social environment. Kyriakopoulos (2011) provided similar data with a population of university students who reported experiencing intense levels of anxiety at the thought of participating in a NBI and first needed counselling to facilitate engagement. This finding was despite the study excluding people with low motivation to participate, extreme levels of distress, active suicidal ideation, in receipt of psychotherapy for anxiety or depression from a psychiatrist, drug or

alcohol dependency, physical illness, or impairment. A lack of self-confidence to engage with community initiatives in general has been widely reported and service users have described how they would have avoided the community service if not for their link worker facilitating the initial engagement (Moffatt et al., 2017; Wildman et al., 2019).

The concept of socialisation as causing harm is termed the social curse (Kellezi & Reicher, 2012; Jetton, 2018), and this review has identified data that supports this concept. Iancu et al. (2014) reported negative social encounters among NBI service users where peer relationships were described as burdensome, with accounts of arguments occurring between peers. There was also data that described a dislike of the tendency of individuals to dwell on patient identities. This extract is worthy of further investigation since it resonates with the research that demonstrates how some NBI service users like to distance themselves away from their patient identities and instead identify themselves as volunteers (Harris, 2017). Social identity theory (SIT, Tajfel and Turner, 1979) can be used to explain why dwelling on patient identities would upset some service users as it could prevent the successful identity transformation from a patient receiving health care, to perceiving oneself as a valued worker supporting a community garden. SIT postulates that people will want to remove themselves from a negative group identity and therefore being identified as a mental health service user, which is a stigmatised identity (Stuart, 2008), may be a potential barrier to NBI programme attendance. Further accounts of stigma were identified in this review such as the activity being socially undesirable (Tambyah et al., 2022), having low socioeconomic status, presenting with health issues, social division, and social judgement (Fixsen & Barrett, 2022).

The physical category contained the least barrier data. Wood, Polley, et al. (2022) identified poor physical health, physical limitations, and an awareness of one's own limitations as barriers and highlighted how the physical difficulties to engage in activity led to an increased awareness of degenerative conditions. This finding could have psychological implications such as increased depression through increased awareness of physical ill-health. For instance, Goldberg (2010) states that depression and chronic physical illness are reciprocal and suggests several pathways that chronic physical illness causes depression including the suffering of pain and a fear of disability. Furthermore, the increased awareness of a lack of ability could lead to social comparisons with other service users who are more capable, which could exacerbate certain mental health conditions further. This concept, however, is left unexplored and requires additional research to determine the psychological sequelae that could present with increased awareness of disabilities.

2.5.2 Limitations

The review is not without limitations. The results were determined by the development of the search string and the specific keywords used, although, in the attempt to be as comprehensive as possible, this review used the expander option 'apply equivalent subjects' box (where available), to include similar topics that may have made use of differing terminology not identified in the search string. One exclusion criterion, that of non-English language articles, could have limited the results, however, the foreign language exclusion was necessary due to time and resource limitations. The participant population presents another limitation due to multiple factors. First, not all studies explored the experiences of the service users and instead relied on other stakeholders and mental health clinicians' perceptions of what they thought

would be barriers. Secondly, the service user population explored in the studies were in attendance of a NBI. Therefore, the voice of service users unable to accept referral or maintain their attendance is not represented. Furthermore, the barriers explored in this scoping review are specific to the age range dictated by the review question and therefore a different set of barriers could present for older adults and a youth population. The scoping review process is explorative in nature and due to this approach, no attempts were made to assess the quality of the included studies. The absence of critical appraisal consequently results in an uncertainty around the quality of the results presented. A logical next step as more research in this area becomes available is to include a quality assessment. The strengths in this study lie in the fact that it has highlighted an urgent need for further research into the PPP barriers and has demonstrated that the mechanisms of affect described to be of therapeutic benefit to the service user i.e., socialisation, nature, and activity, cannot necessarily be relied upon.

2.5.3 Chapter two conclusion

In order to realise the UK government's aim of upscaling NBIs for adult mental health care, it is of paramount importance that the barriers preventing referral, uptake and attendance are understood. To the author's knowledge, this scoping review is the first to explore the psychological, psychosocial, and physical (PPP) barriers experienced by adults with mental health disorders and has highlighted an urgent need for further research in this area, particularly the social elements of NBIs. The nine articles included in this review revealed a lack of research that focuses solely on the PPP barriers, with no research representing those who drop out or who do not accept referral. Therefore, future research should aim to recruit a

sample who either refused referral or dropped out of a NBI. This population, however, may be hard to obtain and so research that explored the initial barriers that service users of NBIs faced and how they overcame them would be of benefit. Although socialisation is suggested to be beneficial for psychological wellbeing**,** the findings within this review demonstrate that the majority of barriers are experienced through the social elements of NBIs. Therefore, to understand how the social elements are experienced, and whether they contribute to the social cure or social curse concepts, qualitative research needs to be conducted with a population of NBI service users to generate primary source data built on lived experience.

Chapter 3. A social cure or a social curse?

3.1 Introduction

Nature-based interventions (NBIs) are a form of community engagement which aim to benefit people with mental health problems, long-term conditions and the socially isolated. Evidence suggests that these interventions can increase self-esteem, raise confidence, improve mental wellbeing, and reduce anxiety and depression (Chatterjee et al., 2018). Whilst there are a variety of activities available through NBIs known to increase wellbeing such as nature engagement and physical activity, there is a great emphasis on the social aspects to act as the therapeutic tool, a construct termed the 'social cure' (Jetten et al., 2012). Research on the benefits of NBIs suggest the social aspects are the most salient component contributing to a person's wellbeing (Barely et al., 2012; Harris, 2017). However, the social aspects of NBIs have also been shown to cause high levels of distress (Kyriakopoulos, 2011; Sidenius et al., 2017; Tambyah et al., 2022). Sitting alongside the social cure concept lies evidence for the negative aspects of socialisation termed the 'social curse' (Kellezi & Reicher, 2012; Jetton, 2018; Wakefield et al., 2019).

3.1.1 The social cure

Humans are social animals who have evolved to live in social groups (Haslam et al., 2009). This sentiment is shared by Tajfel and Turner (1979, 1986) in social identity theory (SIT). Whether these groups are made up of family, friends, shared interests, sports teams, or religious identification, they provide an individual with a sense of social identity and an

internalised sense of self that is shared with other group members. The individual gains a psychological feeling of belonging and acquires a sense of being ‘we’ and ‘us’ rather than ‘I’, (Turner, 1982). These theories form the basis for the social cure perspective (Haslam et al., 2018) which describes how social identities enhance wellbeing through a sense of rich psychological resources. Group membership offers a perceived sense of social support and with it enhances one’s resilience which helps overcome adversity (Haslam et al., 2005). When social identities become internalised, the way a person thinks and behaves can alter, resulting in a person’s attention shifting from self to group (Hogg & Williams, 2000). Internalising of identities can be observed in sports events with winning or losing provoking strong personal emotions (Mackie et al., 2000). The clinical implication for this phenomenon is that a person’s negative attributions and any associated depression can be altered outside of a clinical setting by means of connection with meaningful social groups (Cruwys et al., 2015). The list of research demonstrating positive effects of social groups is exhaustive. Some of the benefits include an increase in perceived support (Haslam et al., 2012), reduced anxiety, (Cruwys et al., 2015), an increase in self-esteem (Jetten et al., 2015), and a sense of life purpose, increased self-worth, and the ability to feel distinctive, special, and successful (Haslam et al., 2009). Further evidence suggests that social connections create emotional bonding, provide a sense of personal security, offer cognitive stimulation, and allow people to achieve goals that would be unattainable in isolation (Haslam et al., 2009).

3.1.2 The social curse

Although research demonstrates that interaction with other people is beneficial to wellbeing, it should not be considered as a guarantee. Tajfel and Turner (1979) demonstrate that social

identities and social processes can also have a negative impact on psychological wellbeing. This takes place through a process of social comparisons, the internalisation of a low-status social identity, stigma and discrimination. The concept of socialisation proving a burden instead of a resource is termed the 'social curse' (Kellezi & Reicher, 2012; Jetton, 2018; Wakefield et al., 2019). Through social comparisons and in-group bias, SIT (Tajfel & Turner, 1979, 1986) demonstrates that for some, participation in social enterprises could result in psychological harm. Stigma, and the effects it can have on an individual, or indeed a group, can prevent the positive processes of social engagement and have a detrimental impact on wellbeing. Through stigma, discrimination and inequality, research into the social cure is revealing evidence for group experiences to be more in keeping with the concept of the social curse (Wakefield et al., 2019). Stigmatised and discriminated identities can be experienced in the realms of a person's race, ethnicity, gender, sexual orientation, physical or cognitive disabilities, and mental illness (Schmitt et al., 2014). Stigma and discrimination can be real or perceived and even perceived discrimination can decrease wellbeing in stigmatised individuals and people identifying as being in a low-status group. Additionally, perceived discrimination predicts a greater increase in negative health outcomes for people with mental health issues (Schmitt et al., 2014).

The suggestion that discrimination can come from being in a low-status group supports SIT and the assumption that acceptance goes beyond the individual (Tajfel & Turner, 1979). An awareness of being part of a stigmatised and low-status group could be felt by people with mental health issues. Receiving a low-status social identity is a particularly troublesome concept for any programme offering a service to people with mental health disorders since people tend to disidentify with stigmatised groups (Schmitt et al., 2014). On this point, Tajfel

and Turner (1979) suggest; “Where a group lacks positive distinctiveness, members will be motivated either to leave that group physically or dissociate themselves from it psychologically” (p. 34). Evidence suggests that giving up an identity associated with stigma can be beneficial to a person’s wellbeing (Dingle et al., 2015).

SIT (Tajfel & Turner, 1979), and self-categorisation theory (Turner et al., 1987) can be utilised to explain the difficulties within the social processes involved in joining a mental health programme and accepting a low-status identity. Self-categorisation theory illustrates the difficulty in classifying the self as a person in need, while SIT highlights the negative implications of accepting this identity. These psychological dilemmas are illustrated in research observing peoples’ use of foodbanks. Foodbanks offer aid in the form of free food to people referred to the service (Bowe et al., 2019). With the cost-of-living crisis the scheme appears harmless however, a person’s social status and identity become challenged since on receiving food aid, one is demonstrating a level of dependency and incompetence through acknowledgement and acceptance that they are unable to provide for themselves (Nadler & Chernyak-Hai, 2014). The dynamics involved in the transaction of aid within the context of foodbank use also highlights the processes involved in group comparisons since a power and status difference is identified between aid worker and service user. This group comparison has the damaging potential to reinforce a stigmatised identity (Bowe et al., 2019). The negative psychological outcomes observed in foodbank use could be considered an exemplar of all programmes involving helping transactions and the findings could be extrapolated and applied to other helping scenarios presented in a stigmatised environment (Bowe et al., 2019). The social concepts described above could be experienced by participants attending mental

health programmes and therefore service users may experience difficulties in accepting a referral or attending the intervention.

Within NBI literature, there are a number of occurrences where the social aspects provide support for the social curse. For instance, Richardson et al. (2020) revealed that participants shared how joining a programme was a daunting experience that took them beyond their comfort zone. This experience was reiterated in research by Sidenius et al. (2017) where getting to know other people was deemed the greatest challenge and participants had to develop coping strategies to socialise. Indeed, anxiety has been expressed on joining a NBI and having to socialise (Hanson et al., 2016), with becoming a member of a group described as a big transition for service users, and one that was experienced as exhausting (Nordh et al., 2009). Further social challenges include isolation through difficulties interacting with others (Cook, 2008; Woodford et al., 2017), feeling guilty if physical or mental illness resulted in reduced participation (Parkinson et al., 2011), and fear of not fitting in, being a disappointment to others and being judged negatively (Kyriakopoulos, 2011). Reflected in the fear of being judged negatively comes the concern over body image, particularly when accessing outdoor spaces (Fixsen & Barrett, 2022). Social stereotypes associated with outdoor activity can lead to an expectation of certain body ideals (Hindley, 2020). This was expressed by participants of a walking programme where there was a relief felt that no-one turned up wearing fitness attire, and that the participants were all shapes and sizes (Hanson et al., 2016). These constructs are not unique to this study and similar concerns have been reported in other research such as feeling inexperienced, not wanting to engage due to a lack of knowledge, and not wanting to look foolish (Connor, 2020).

Additional evidence revealing social difficulties have included arguments and peer conflict (Grabbe et al., 2013), burdensome peer relationships and a dislike for people dwelling on their patient identities (Iancu et al., 2014), preferring to be with animals over people since interaction with people was deemed far too complex (Granerud & Eriksson, 2014), peer resentment through some service users taking ownership of areas of a garden (Barley et al., 2012), and the need for group dynamics to be facilitated due to difficulties in socialising (Parkinson et al., 2011).

In summary and in response to the research that declares the social aspects of NBIs to be the element that provides the most health benefits, one should consider the facets outlined in SIT, service users' statements highlighted in chapter two, and the following sentiment revealed by participants in a nature walking group study by Hanson et al. (2016), in which the social aspects were considered the least attractive part of the whole intervention. In Jetten, Haslem, and Alexander's book on the social cure (Jetton et al., 2012), the notion of the social curse is illustrated by the fate of the protagonists in Jean Paul Sartre's play called Huis Clos. Here the protagonists are sent to hell together and while awaiting the machines of torture (that never manifest), they come to realise that the hell they have been subjected to is in fact being stuck with other people (Haslam et al., 2012, p.158). The argument therefore as to whether the social dimensions of NBIs are the most or least instrumental aspect of positive change is perhaps best settled with the caveat presented by Granerud and Eriksson (2014) in the reflection they make on social interaction as one of being beneficial to wellbeing but, only if one enjoys the company, and only if one gets on with the group.

3.1.3 Rationale, aims and study context

The study is data led and influenced by a report produced by the UK government that states the social elements are the number one 'attitudinal' barrier to NBI attendance (Department of Health & Social Care, Gov.UK, 2023). In addition, the current research follows on from the scoping review that also demonstrates the psychosocial elements of NBIs can be a major barrier to referral, uptake and attendance (Burrell et al., 2024). As very little research exists on the psychosocial barriers as experienced and expressed by service users themselves, there is an urgent need for more research into whether the social aspects can act as a barrier to participation in NBIs. This research is important since NBIs heavily rely on socialisation as one of the mechanisms for positive change. The proposed research will add further evidence towards the social cure versus social curse dichotomy currently discussed in the literature. The aims of the research are to (i) explore whether service users of NBIs experience any psychosocial barriers to referral, uptake, and/or attendance and identify what these barriers are, (ii) determine whether there are any strategies employed or developed by service users to help them cope or negotiate their way around any psychosocial barriers experienced, (iii) identify what social processes are acting as a social cure and enhancing wellbeing.

3.2 Methodology

3.2.1 Positionality Statement

I joined Growing Together (GT) with previous experiences of working within horticultural therapy and relevant qualifications such as a MSc in applied psychology, an award in social

therapeutic horticulture (STH), a certificate in person-centred counselling and level 3 NVQ in horticulture. I felt this made me a skilled and knowledgeable member of staff, however, my identity at GT was fluid. I believe I began as an authority figure, an outsider – the unknown university researcher, and I was aware members kept a cautious distance from me. Over several months of working alongside the members and showing willing to get stuck into the gardening activities my identity shifted. It was still acknowledged that I was there for research purposes, but I was also accepted as a fellow GT member. Once this transition had been made there was a noticeable difference in social interaction with some members seeking me out for counselling sessions and others wanting gardening advice, and many just sharing in a joke and a laugh. The casual friendships built with the members allowed for a closeness and access to an otherwise hard to reach population. I also learned about the members' personal situations and mental health diagnoses, although this was incidental and not part of the research aims. This form of social relationship is one reason why I believe the self-reporting (whether it was narratives described during interviews or the completion of outcome measures) were true representations void of any response bias on the part of the participant.

I would be naive if I declared my situated knowledge did not influence the design of the study. I was already aware of social identity theory, for instance, and knew of certain hypotheses for social identity enhancement that could be tested in the GT context (i.e., hypothesis H3a described within chapter four). My volunteering had made me aware that GT members enjoyed helping others, although I do not think I really discovered this was a mechanism that was enhancing psychological wellbeing until after the analysis of the interview data in chapter three. Perhaps without my previous psychological knowledge I would not have focused on this mechanism so intently.

There was an attempt made to maintain a detached objectivity within the construction of the interview schedules. For instance, it was through reflection on how my professional background could influence my research questions that led me to consciously construct the interview schedules from previous findings only (e.g. the social barriers identified in the scoping review results were used to construct the interview schedule in chapter three).

Although my research aims informed my methodology, i.e., using interviews and TA (chapter 3) and focus groups and IPA (chapter 4), my volunteering and the relationships that had been built gave me confidence that my participants would be willing to openly share their lived experience. Without the volunteering I do not believe my participants would have been comfortable sharing their true feelings nor would they have felt happy doing so in a group situation. Essentially, the volunteering allowed me access to a vulnerable population, to conduct interviews and focus groups and collect sufficient data.

3.2.2 Reflexivity, epistemological and ontological assumptions

The researcher acknowledges that qualitative research processes are influenced by subjective perspectives (Olmos-Vega et al., 2023). The researcher became a volunteer at the NBI for a total of two years and volunteering commenced for three months prior to any data collection. A reflexive journal was kept throughout this process. The engagement in reflexivity allowed the researcher to account for how subjectivity affected their inquiry (Olmos-Vega et al., 2023). For instance, by the time interviews took place, the researcher was aware that trusting relationships had been built between researcher and participants and that the researcher's identity at the NBI had shifted from visiting university researcher to just another NBI

member working in the garden. This methodology was chosen to facilitate the researcher reaching a population of people affected by social anxiety and other mental health issues. Evidence for the success of this approach was obtained verbally through participants declaring that they would not have taken part in interviews had they not have previously known the researcher. The volunteering also helped to break down any power dynamics that might have otherwise been present in a participant and researcher scenario. Increased participant confidence and comfort levels along with reduced anxiety was also observed which may have allowed for a relaxed, non-stressful interview. Based on the length of the interviews (30 minutes to one hour 30 minutes), and the volume of data generated (311 A4 pages), the volunteering appears to have created an environment where the participants felt comfortable to open up and discuss the interview topics freely.

Although eliminating researcher influence is problematic or even impossible (Levasseur 2003; Pillow, 2003), to reduce researcher influence the interview schedule (Appendix D) was entirely constructed from the findings of the scoping review in chapter two (Burrell et al., 2024). Despite this approach, as the interviews were semi-structured, the researcher's responses to answers and follow up questions may have reflected personal biases, interests or situated knowledge. For instance, the researcher's knowledge of social identity theory may have had an impact on the formulation of follow up questions not pre-constructed in the interview schedule along with the way the data was read, interpreted and reported. An ontological position of 'subtle realism' is acknowledged in that social realities are interpreted by the individual and can then be subsequently further interpreted by the researcher (a detailed discussion of subtle realism is provided in section 4.4.6). From an epistemological stance, both inductive and deductive processes were observed where induction makes use of the presented evidence as the genesis towards a conclusion while deduction makes use of

theoretical hypotheses (such as those presented in social identity theory research), in support of a conclusion (Ritchie & Lewis, 2003).

3.2.3 Trust Links

Gardening is an easily accessible activity within the NBI paradigm, therefore, the study aimed to recruit participants from Trust Links - an independent charity based in Essex that aims to improve mental health and wellbeing. Trust Links work with around 4,000 people each year across six gardens and offer therapeutic gardening through their 'Growing Together' project where clients can participate in a range of gardening activities. The therapeutic gardening programme is described by Trust Links as a safe, welcoming and inclusive space for adults, improving mental health, physical health and wellbeing through a range of gardening activities. The six therapeutic community gardens are all located in the county of Essex and are based at: Westcliff, Shoeburyness, Rochford, Thundersley, Cressing Temple and Basildon. Across these gardens service users can experience a range of activities including growing fruits, vegetables, and flowers, caring for chickens, beehives and wildlife ponds. Some sites provide poly tunnels, potting sheds, wildlife areas and workshops and offer the opportunity to complete a City and Guilds diploma in practical horticulture. Typically, the garden programmes run for one day per week between 9am and 4pm. Trust Links also run women only groups (Shoeburyness), a community shed workshop for men to work together on DIY projects (Thundersley), and a shop where service users can be involved in selling the garden produce to the public (Westcliff).

3.2.4 Participants

A purposive sampling strategy was used to establish a sample of adult participants aged 18-65 years who have experiences of attending the 'Growing Together' mental health programme at Trust Links. The purposive sample included service users that were observed by the researcher to have difficulties engaging in social interaction and service users who the charity Trust Links suggested for inclusion based on their knowledge of those service users who had previously experienced social anxiety at the NBI. Existing attendees of Trust Links were invited to take part in a face-to-face semi-structured interview with the researcher. The researcher informed potential participants about the study through a presentation made at Trust Links. A participant recruitment email pro-forma and the participant information sheet were made available to the charity to allow them to forward the study details on to their service users. Any individual who wanted to take part in the study was invited to reply to the recruitment email via a member of staff at Trust Links or via the researcher directly, either by email or in person during the researcher's attendance at garden sessions. The number of participants suggested for interviews for a medium size research project is between 10 to 20 interviews (Braun & Clark, 2013, p.48). This study aimed to recruit the upper limits as suggested by Braun and Clark. Interview consent was done in the presence of the researcher before the interview. To make the study viable the researcher gained a volunteer position with the charity Trust Links and worked alongside their service users (called members) building therapeutic and trusting relationships with them.

3.2.5 Design and procedure

Since the study is explorative, it utilises a qualitative methodology to gain an insight into the subjective experiences of those who attend Trust Links' 'Growing Together' mental health programme. The proposed research utilised in-depth semi-structured interviews, which were held with current service users (n = 20). An interview schedule containing a set of open-ended questions was constructed based on the research aims and the psychosocial barriers identified in chapter two, the scoping review. The questions were all related to social factors and included four topic themes: Support, Relationships, Stigma, and Mental Health. The full interview schedule can be viewed in appendix D.

Following ethical approval, granted by the University of Essex (ethics application ID: ETH2223-2330), volunteering at Trust Links began at three different garden sites. A research diary was kept as a reflexive exercise, but more importantly to make observational notes on the social interaction between members and their social behaviours. This exercise aided with the purposive sampling. Once suitable participants were identified, i.e., those demonstrating social awkwardness or avoidance, a list was compiled of relevant potential participants and Trust Links invited those members to take part in the research. The participant information sheet (PIS) was attached to the invitation email used by Trust Links to invite members, however, all participants who showed an interest in the research were read the PIS by the researcher to make sure that all information was understood and to give the participant a chance to ask questions. The consent form and the interviews were completed a week later to give the participants time to consider the information. The interviews were held in a private area at the participants' preferred garden site on their scheduled day of attendance. Interviews were structured to last a maximum of 45 minutes; however, participants were not abruptly cut off if they were engrossed in conversation. The interviews were carried out by the researcher and recorded using a digital recording device. Following recording, the interviews were

transcribed for subsequent analysis. All interview data was anonymised prior to analysis to ensure anonymity of data.

3.2.6 Data analysis

Data analysis was carried out using thematic analysis (TA), a method used for identifying themes and patterns across a dataset (Braun & Clark, 2013). Both inductive TA and theoretical TA were utilised to generate codes, categories, and themes from a bottom-up approach, where the researcher is led by the data, and a 'top-down' method where the researcher makes use of existing theory to examine the data (Braun & Clark, 2013). The analysis followed the six-stage phases of TA as described by Braun and Clark (2006). These include familiarisation with the data (stage 1), generating initial codes (stage 2), identifying themes (stage 3), reviewing themes (stage 4), defining and naming themes (stage 5), and producing the report (stage 6). Codes were derived from the pattern-based analysis conducted across the entire data set and the data extracts were used as illustrative examples to signify the prevalence of the theme (Braun & Clark, 2006). A saliency analysis was also conducted to help identify relevant data not detected through the pattern-based analysis since TA ignores the importance of coded excerpts that do not recur regardless of how important they may be. This is because non-recurring codes, by definition, cannot be thematic (Buetow, 2010). The saliency analysis was conducted as conceptualised by Buetow (2010) and enhances TA by identifying the degree to which each code is important and whether the codes advance understanding and address the research question.

Interviews were transcribed by hand in Microsoft Word. This was done to enhance the familiarisation of the data, and to allow the researcher to add in any relevant behaviours such as when a participant laughed, sighed, paused, spoke quietly or spoke with emphasis, and to note emotional responses. Transcripts were typed up in Microsoft Word and printed out as a hard copy to enhance familiarisation and data coding by avoiding the risk of computer assisted qualitative data analysis software (CAQDAS) technology mediating data distancing, reduced immersion, and reduced insight (Braun & Clark, 2013, p219). TA stages one to three (data familiarisation, coding and identifying themes) was conducted with a hard copy, while stages four to six (reviewing themes, defining and naming themes, and producing the report) was managed in Microsoft Word. All coded data was allocated ID numbers during data analysis to ensure data extracts were traceable back to their original interview transcript. Participant numbers were replaced by pseudonyms for the purpose of producing the report.

3.3 Results

A total of 20 interviews were conducted from participants in attendance of Trust Links' 'Growing Together' mental health programme. The participants' mean age was 43.5 (SD ± 11.5) and the gender split was male (n = 14) and female (n = 6) or 70% male and 30% female. Three overarching themes, 'Social Curse', 'Social Cure', and 'Coping Strategies' were used to organise a further 20 sub-themes identified during coding that related to the research aims. These themes and sub-themes are depicted in Table 8. A further ten data extracts were identified under the saliency analysis as significant to the research interests of social processes that act within the context of a social cure, curse, or coping strategy. Results from the saliency analysis are embedded within the TA results and presented in the relevant

sections. Additional data extracts in support of those selected for the results can be found in appendix F.

Table 8. Thematic analysis - themes and sub-themes

Theme	Sub-theme	Description	Participant
Social Curse (Social Barriers)	You have the right to remain silent	Describes how sharing or hearing mental health discussions can cause distress.	Jack, Walter, Ben, Felicia, Lydia, Sidney Matthew, Gerald, Greg, Oliver
	One bad apple can spoil the barrel	Describes how one particular person can disrupt the therapeutic experience for other service users and create an uncomfortable environment. Antisocial behaviour, intolerance of other people and the need to isolate oneself can be outcomes of a deterioration in mental health.	Jack, Paul, Harriet, Daniel, Simon, Ben, Felicia, Lydia, Sidney, Anthony, Emily, Matthew, Gerald, Greg, Edward, Penelope
	Shall I compare thee	Describes how service users compare themselves to other service users.	Walter, Paul, Daniel, Ben, Felicia, Lydia, Sidney, Anthony, Emma, Matthew, Gerald, Greg, Edward
	As long as I know them, it's alright	Describes the fear, nervousness and anxiety experienced from attending a NBI and over meeting people for the first time or engaging in social interaction with new people. Some service users observe others before socially engaging with them, while too many people attending the programme can be overwhelming.	Peter, Jack, Walter, Paul, Julie, Daniel, Simon, Ben, Felicia, Lydia, Sidney, Anthony, Emily, Matthew, Gerald, Greg, Edward
	I can't stand losing you	Describes the upsetting effects of having a friend drop out of the programme, or when friends argue and fall out or become a burden through over-reliance.	Peter, Daniel, Simon, Sidney, Anthony, Emily, Gerald, Edward
	We're not worthy	Describes how service users perceive themselves as not worth being known or worth someone else's time. Service users can ruminate over not being good enough, doing something wrong, and upsetting other people.	Peter, Walter, Julie, Daniel, Ben, Felicia, Sidney, Emily, Matthew, Gerald, Oliver, Edward
	There's no going back	Describes how an event or experience will cause service users to feel like they cannot return to the NBI.	Walter, Paul, Daniel, Ben, Felicia, Sidney, Gerald
	Where no one knows your name	Describes a desire to keep NBI attendance discrete, to avoid being seen in attendance by acquaintances or to create a pretence that the NBI is a place of work or an allotment.	Peter, Jack, Walter, Paul, Harriet, Julie, Daniel, Ben, Felicia, Lydia, Sidney, Anthony, Emily,

		Interviewees discuss stigma and how they perceive the general public's attitudes and behaviours to be towards people with mental disorders.	Matthew, Gerald, Greg, Oliver, Edward
Social Cure (Enhanced Wellbeing)	It's good to talk	Describes how sharing mental health problems with other service users provides a therapeutic experience.	Walter, Harriet, Julie, Daniel, Simon, Anthony, Emily, Greg, Oliver, Edward
	Where sheep may safely graze	Describes how service users experience the NBI as a safe place and a space that offers social experimentation without judgement or consequence.	Jack, Paul, Daniel, Simon, Anthony, Emily, Matthew, Gerald, Oliver, Edward
	Autonomy leads to engagement	Describes the importance of agency and free will over a variety of intervention processes including referral, attendance and activities undertaken.	Peter, Walter, Simon, Felicia, Lydia, Sidney, Matthew, Gerald, Greg, Oliver, Edward
	Just being there	Describes how being amongst other people, even without socialising can reduce loneliness and isolation.	Jack, Harriet, Julie, Daniel, Felicia, Lydia
	We are family	Describes the good relationships that service users have built and the sense that they belong to a community of people that offer a support network both inside and outside the NBI. Service users describe a heightened awareness of other people's needs and mental health problems and show empathy towards each other.	Peter, Walter, Paul, Harriet, Julie, Daniel, Simon, Ben, Lydia, Sidney, Anthony, Emily, Matthew, Gerald, Greg, Edward
	We rise by lifting others	Describes the psychological benefits felt when service users experience helping other people. Service users come to recognise that other people enjoy their company and their contribution to the garden is valued.	Walter, Julie, Daniel, Ben, Anthony, Matthew, Gerald, Greg, Edward
Coping Strategies	I get by with a little help	Describes the need for support from friends, family or social workers to facilitate attendance and social engagement.	Peter, Jack, Paul, Harriet, Julie, Daniel, Lydia, Sidney, Anthony, Emily, Matthew
	The trick is to keep busy	Describes how engaging in activity is being used as a distraction from social engagement and over-thinking.	Peter, Paul, Julie, Daniel, Simon, Ben, Lydia, Sidney, Anthony, Matthew, Gerald
	I want to be alone	Describes the need to completely isolate oneself from other people on the programme.	Jack, Walter, Harriet, Julie, Daniel, Simon, Lydia, Sidney, Anthony, Emily,

		Avoiding eye contact helps avoid social engagement and makes the person feel invisible.	Matthew, Greg, Edward
	The impossible takes a little longer	Describes how service users are using the programme as a form of graded exposure therapy.	Peter, Walter, Julie, Daniel, Simon, Ben, Lydia, Sidney, Anthony, Emily, Matthew, Gerald, Greg
	Those who have a purpose can endure	Describes how service users can endure the social barriers if they have a greater purpose they wish to achieve.	Jack, Paul, Daniel, Ben, Lydia, Sidney, Anthony, Emily, Matthew, Gerald, Greg, Oliver
	I think, therefore I can	Describes determination, perseverance, the building up of stamina and resilience and the need to prepare oneself mentally before attending a session at the NBI.	Harriet, Daniel, Simon, Lydia, Sidney, Anthony, Emily, Matthew, Gerald, Edward

Table 8 shows the themes and sub-themes identified in the thematic analysis

3.3.1 Social curse themes

The data revealed an array of psychosocial barriers that could be contributing to causing the service users' distress. Under the overarching theme title of 'Social curse' the social barriers identified were divided into eight distinct sub-themes which were labelled, 'As long as I know them it's alright', 'You have the right to remain silent', 'One bad apple can spoil the barrel', 'Shall I compare thee', 'We're not worthy', 'Where no one knows your name', 'I can't stand losing you' and 'There's no going back'.

<u>As long as I know them, it's alright</u>

This sub-theme encapsulates the complexity of social anxiety. There is a lot of social anxiety experienced with joining the NBI and other service users recognise that new starters are

uncomfortable on their first day. It was suggested by more than one interviewee that what people may prefer for their first day of attendance is to come on a day when there are not so many people present, or before other service users arrive, just to experience the place initially without having to negotiate the social aspects. As one interviewee discussed, you have to be feeling good or positive or "in the right frame of mind" in order to face your social anxiety. Interviewees described needing time to adjust to being in a social environment before being able to engage socially, especially in the case of additional co-morbidities such as Autism Spectrum Disorder (ASD). The time scales for adjusting to the social environment altered dramatically from needing 30 seconds to process who a person is to needing a month to be comfortable talking to people. One interviewee described being aware that they were "outside the circle of people", however, they also suggested that they did not wish to be part of the group, while another described being too anxious to attend the NBI Christmas party despite having personally worked hard to set the event up.

> *"It did make me, like anxious, cos it was a new situation, erm, I, it was coming to a place I didn't know, erm, so, initially I was, a, erm, a bit wary about it, but, erm, I'm glad I've kept coming"* Lydia.

> *"...we had someone here two months ago who wanted to start here called* [name] *and he erm, was here for two weeks, one week and then the following week he didn't come back and he was with somebody and I kind of feel he distanced himself through confidence and anxiety of other people and I just wondered in that context whether, he'd have preferred, I dunno, if there'd been nobody around..."* Daniel.

For several service users, the amount of people attending the intervention, or the sharing of the same space can cause distress, especially if the numbers start to increase. Participants described struggling in larger groups and having difficulty coping with meeting too many

new people at once. Two interviewees discussed people they knew who wouldn't be able to attend the NBI since there were too many people in a limited space, and for one service user, it was suggested that the growth in participant numbers has led them to partially disengage from the NBI.

> *"I like a private space because if there's too many people I become very, erm, anxious, erm, and then I become erm, less talkative actually because I'm anxious and there's too many people around me"* Anthony.

> *"Well, we haven't seen* [member's name] *here for a couple of weeks…because the group has got bigger, she has become more distant"* Peter.

Meeting new people was discussed as a challenge with service users describing a mix of emotions including feeling anxious, nervous, scared, uncomfortable and lacking confidence. Service users found it easier to be approached by someone than to approach somebody themselves, although being approached was experienced with anxiety and suspicion as to why they were being approached. Nonetheless being approached remained the easier option since service users described needing facilitated introductions and facilitated social engagement (as illustrated in the theme 'I get by with a little help'). Furthermore, some service users described finding it very difficult to start a conversation through not knowing what to say.

> *"Hmm, erm, incredibly anxious, erm, I really don't do very well with meeting knew people, like, at all, erm, so, erm, it, it takes me a really long time to er, feel comfortable talking to, to anyone really, hmm…sometimes I just struggle with what to say to people, erm, and some days I, just don't have anything to say and I just want to, erm, keep to myself…And I, hmm, especially starting a conversation I, I can't start conversations so it's, yes, erm, also the, just the anxiety sometimes it just, I , I can't talk to people"* Lydia.

> *"Yeah, I still find it hard to approach new people… I suppose, yeah if they approached me it would be better…it's still not easy no* (social engagement)*, just to begin with, after a while though I get to know them a little bit then it's ok…"* Julie.

A number of service users described observing other people from afar before approaching them themselves. This performance is carried out in an attempt to get an idea of what the other people are like, how they behave, and how they interact socially. On the scenario of being approached, without already knowing something about the person that was doing the approaching, one service user stated that they would become defensive and described that 'the shutters would come down' until they had worked out who that person was.

> *"At no point in my life has it* (meeting new people) *ever been enjoyable…I kind of erm, watch them with other people to see what they're like, before I talk to them"* Simon.

There were several service users who described feeling isolated or rejected whilst attending the NBI. Some interviewees blamed themselves for their isolation attributing it to their social anxiety or to their fragile state of mind, for instance, being oversensitive or overreacting to a trivial scenario. Likewise, some people felt they did not fit in with the existing group, again, attributing the isolation towards the self. A few interviewees on the other hand, attributed their feelings of isolation or rejection on to the NBI staff. In these instances, interviewees described rejection through perceiving that staff were giving more time to other service users and that staff did not have much time for them.

> *"Erm, yeah, I haven't, there's some people that I'll sort of talk to if they talk to me but, I'm, haven't really, yeah, made any particular friends, but that's more on, a me issue than anything else…"* Lydia.

> *"…not having* [key worker name] *support so regularly as I'd liked to possibly because* [member name] *was getting that level of support that might be where I felt kind of,* [pause] *rejected…"* Daniel.

You have the right to remain silent

This sub-theme illustrates how the sharing of mental health issues is not always welcomed and for some, talking about their mental health, or indeed listening to other people talking about mental health, can be experienced as challenging and distressing. Although some people interviewed in this study enjoy sharing their mental health issues, for the people identified under this theme, they use the NBI as an escape from their mental health problems and therefore have little desire to share in conversations concerning mental health. These NBI attendees do not want the holistic environment, that of being immersed in nature, disrupted through unwanted exposure to other people's mental health problems.

> *"I must say I found, I heard a couple of conversations which I found really quite tough to hear…erm, yeah, so I must admit that, I don't always want to hear, and, I think my family sometimes think why do you go to these groups for mental health…they say can't you just be with more positive uplifting people"* Felicia.

The act of talking or listening to other people talking about mental health, or hearing how people are struggling to cope, can act as a negative emotional trigger. This 'trigger' was described as increasing anxiety, causing distress and through feeling over empathetic towards the person disclosing the information.

> *"Erm, I personally try to avoid it, I don't, hmm, I don't really enjoy talking about or listening to other people talk about mental health…I've heard people complain about erm, because, they also don't want to hear about mental health talks, so erm, so I usually tend to try to avoid it if I hear it… it can just be a little bit triggering sometimes, I, hmm, sometimes it can upset sort of, my anxiety, or anything, and I just, I just don't enjoy hearing how other people, erm, cope or don't cope"* Lydia.

> *"Erm, it depends who you're speaking to really doesn't it, how people, if people are manic when they're talking about it, I can't deal with that because it would blow my head and I generally, the next thought in my head is who's caused this for that person"* Matthew.

Despite a desire to keep one's personal mental health issues discrete, the environment created by the intervention appears to encourage or cause some service users to disclose and reveal more about themselves than they feel comfortable with. On reflection, interviewees stated a regret for the disclosure of personal issues while other service users described a concern over burdening other people with their problems, a position described as being 'toxic'. When some people open up about their mental health, they find they can erupt with a volcanic like explosion and pour their emotions out on the person listening. This process was described by one service user as 'vomiting on people'.

> *"I'm a sharer kind of thing, I'll tell people things that I think afterwards, you didn't need to say that at all…"* Walter.

> *"Sometimes* (will talk to) *clients* (service users) *but I don't like talking to clients cos I don't want to be toxic...yeah, and so I don't like opening up, cos my, yeah I tend to vomit on people. That's just me"* Gerald.

There were further negative impacts experienced after disclosure which included the feeling that the other person was not really listening or interested in what was being shared and being careful who you choose to talk to. One interviewer explained that 'you've got to pick your friends, some people will just be nasty and other people you can talk to'. There was also a feeling of being betrayed after disclosure due to the recipient of the disclosure sharing the information with professionals in authoritative positions. The betrayal was felt despite the service user being made aware of the NBI staff's responsibilities and duty of care.

"I want to express myself and someone comes cold you know I've had a couple of experiences of that" Greg.

"I was betrayed quite a lot but, I don't know if [facilitator's name] *or* [facilitator's name], *they probably had to tell her something* (the support worker) *I've got no privacy…my phone went mad and mum went like just keep your mouth stomped with those sort of people cos they've got to do that, that's what they're there for…"* Jack.

"I think it's good to talk, erm, within reason. Some people will just, be nasty and toxic and other people you can talk to, you just, you've got to pick your friends haven't you and just, yeah, some people you can talk to and others" Gerald.

<u>One bad apple can spoil the barrel</u>

This sub-theme describes how some individuals in attendance of the NBI can destroy the therapeutic experience for the other service users and create an uncomfortable environment. Feeling uncomfortable attending the NBI has been discussed as a result of bad language, people with loud or overwhelming personalities, angry or aggressive people, and when witnessing arguments. Some interviewees described feeling uncomfortable around certain types of people while others described a complete dislike for a particular person. The occurrences of confrontation, break outs of arguments or antisocial behaviour can be a challenge for some people to be in close contact with. For some, the behaviour of other people can lead them to seek solace in an area of the garden away from the offending person or even request to change their attendance day in order to avoid a specific person altogether.

"There's not many people I don't get on with, there is one…er, yeah, I got called a erm, someone swore at me…I had to tell a member of staff cos it would have eaten me up…I would have gone home, messed myself up, got myself in a right tis wos over it…I hope that I don't see him again…" Gerald.

"…erm he was like a young lad quite chaffy [laugh] *I found him very uncomfortable to be around…some of his conversations he used to talk about and*

> *talk about being you know, these people can be quite angry young lads of like you know, every other words like got the F-word in it, or they're going to threaten to kill, punch someone, cos they're quite aggressive, so that kind of person…having to endure that erm being in a garden where I felt uncomfortable…I kind of tried to avoid him and stuff like that…"* Daniel.

The anti-social behaviour that manifests can be an outcome of the deterioration in mental health, or as several interviewees put it, when having a bad day. Mental health deterioration can lead to disruptive or antisocial behaviour such as losing one's temper and sudden outbursts of anger or frustration which will often be directed at other service users.

> *"…if I have a bad day, then the good relationships, it's just if you feel agitated or something, like if you come in on a bad day, even the best relationships you can bite people's heads off and that…and normally the closer the person is, that's the sort of person that you go for in it normally"* Sidney.

Experiencing a bad day also causes service users to retreat both mentally and physically. Interviewees described what may be observed as being unsocial or unfriendly as a need to be selfish in order to take care of themselves. When experiencing a bad day service users may focus their attention purely on their own needs whilst ignoring everyone else, as one interviewee stated, 'you want to retreat and just heal'. Retreating also takes place in the physical sense with service users locating themselves in discrete corners of the garden to get away from other people (discussed in more detail under the theme 'Coping strategy'). A deterioration in mental health was described as being depressed or increased social anxiety. On these occasions, service users did not want to, or were unable to, engage with others. The lack of engagement can be taken personally by those who are trying to be social, however, service users appear to come to terms with this outcome as one interviewee expressed 'we have to learn to adapt or accept that some people want to be social, and some people don't want to be social'.

> *"I think sometimes, some people are just sort of like that to everybody, erm, I can't sort of get along with them or I'll say how are you today and they just grumble and walk off, and I just leave them to it, they obviously, they don't want that, to engage in conversation about anything"* Penelope.

> *"Yeah sometimes, sometimes I just want to be on my own. Yeah, sometimes just, some days are harder than others, and if I'm like really struggling, I just need to be, like in a non-selfish way but, focus on myself. Like, they're the days where I perhaps can't talk about other people like, but usually like the staff are really good so like I'll talk to them…and like I say some days I like, want to be on my own, so I will just sit like, isolate myself a bit, but, erm, yeah"* Emily.

> *"It is, it's whether I'm having a bad, sometimes I just don't want to speak to people…I'm so agitated that I don't…yeah, that's why I done that garden over there, to get away from everyone…"* Sidney.

A deterioration in mental health can also lead to the dynamics of social engagement becoming complicated and harmful. For instance, one interviewee described themselves as being a 'jokey person' and interacting with other service users through jokes and banter. Despite a few service users reporting a relative amount of success using this social engagement strategy, at times people's mental health or life circumstances means they are not open to this form of interaction and arguments can break out. These instances left one interviewee confused and feeling bad about themselves which they stated will lead to self-punishment.

> *"…then there's been sometimes where I'm like, if I think I've upset someone, I'll go, but people know what I'm like, like I joke a lot, and I'm like well I've joked with them for so long what do I do now do I just stop speaking to them, but then the thing is I would stop speaking to them and I know that's not, not, a good thing to do cos that, they'd not done nothing wrong sort of thing and it's just like, yeah...well one day they're not* (receptive to jokes) *and then the next day they are and you're like well what do I do never joke with them. That's why it's hard here sometimes"* Sidney.

One interviewee who had experienced being on the receiving end of what is intended to be light-hearted banter experienced the interaction as negative and harmful to their mental health. Here they use the words 'incapacitated' and 'destroyed' to try and convey the level of intolerance and exhaustion felt when exposed to this form of social interaction.

> *"I'd end up incapacitated trying to work or do anything because of other people trying to* [pause] *basically destroy you, like on, on what you're doing, like doing over there* (referring to a plot of garden) *when people come past and go oh that's not possible, I mean, oh yeah, yeah, nah, nah, they, I'll, you ain't finished yet go back and, that's the young lad trying to have a laugh"* Matthew.

Shall I compare thee

This sub-theme illustrates how the service users are making social comparisons and judging themselves against other people attending the NBI. Making judgements and comparisons lead some service users to becoming self-critical. For others, their comparison-making results in them trying to keep up with, or even compete with others in gardening knowledge, ability or skill set.

> *"I'd say so one hundred percent even if it's like getting a certain amount done or if they approach a task in a certain way which is really, that I couldn't really see I'd feel like, well, why did I not see that I'm quite critical of myself…I didn't see it quickly enough or I didn't have something good in mind for an area or I didn't do it as well as I should do or I was struggling with it or something so possibly there was some comparisons when I was struggling to other people with what they were doing and how far they've dug over a bed… so yeah there is a lot of that in my life compared myself to other people…"* Daniel.

In several cases, service users stated how observing other people participating in the NBI led to a realisation that they were not actually capable of carrying out physical activity. A

heightened awareness of having a lack of physical ability was acquired as a direct result of attending the NBI and led to negative emotions such as shame and guilt.

> *"I started coming in and realising I can't actually do anything physical anymore, unless I'm just sitting down and you know, and that found, that made me, slightly ashamed, er, guilty er, I don't think I was looking at the other people because of their abilities but just because they were able to do something"* Edward.

There were a mix of feelings and emotions generated through social comparison including feeling ashamed, guilty, annoyed, and making assumptions about current life positions or accomplishments such as they are not doing as well in life as other people. In this instance, making comparisons exacerbates a negative self-image and is harmful to self-esteem.

> *"I'm always comparing because I'm just like, I'm very insecure, so I always feel like I'm doing worse than other people, so, or people are further on than me… obviously everyone here has like their own struggles so it's nice to see people progressing and doing well, and at the same time it's like bittersweet because, like, maybe I feel sometimes like I'm not doing good enough in life"* Emily.

Along with producing negative emotions and thought processes, the comparisons that take place can also lead to some attendees not attempting a task in the garden. For instance, where a service user has observed someone perform a task particularly well, then that task might be avoided in the event that they might not execute the task similarly as well. The reasons for task avoidance were described from a perceived notion of being in competition with others and not wanting to be shown up.

> *…and obviously having* [member's name] *there didn't help me, cos he could do things that I couldn't…when I see other people do that like get on with that like easier, I'm thinking that's showing me up a bit, so I was quite conscious of certain things like that, of people doing better than I was, yeah I thought I*

> *couldn't compare to that or, I wasn't something special anymore… I'd never attempt anything* [member's name] *was doing, cos he's like the opposition…if I can't do something as well it's er, can break or harm me I guess…"* Daniel.

Witnessing other people doing well was described as something that can harm them and despite a statement from one interviewee declaring that they shouldn't be judging themselves against other people, it is evident that they struggle to avoid making comparisons. Several people experience making judgements, comparisons, and perceive themselves being in competition with other service users. Observing other people's achievements in the garden can lead to feelings of jealousy.

> *"I think, this lot here get a little bit, jealous over like, over you're doing that and they're not doing that…so, not, not from my point of view but I think from other people's point of view watching what's going on they do get a little bit like, er, jealous, or angry that you're doing, woah slow down you're doing too much work…"* Matthew.

At times, the comparisons went beyond individual skills, ability and accomplishments made in the garden and extended to comparing peoples' mental health status. There were some quietly thought accusations being made that some service users are faking mental ill health or using it as an excuse to get attention. Further to the mental health comparison, there was one other stand-alone comparison being made where one interviewee revealed that she made gender specific comparisons, comparing herself against the appearance of other women. As a result of this unwanted and harmful habit she welcomed the fact that the NBI was predominantly male.

> *"I look at my level of mental health compared to somebody else, and I think, there's nothing, like, it's my own opinion, when I look at other people and think…do you have any actual real mental health issue"* Ben.

> *"I think a couple of people when they say they're down, they're just, I'm not saying it is, but it's for a bit of er, like attention…"* Sidney.

> *"…what I have…is about, me comparing myself to other women, and the positive thing is, there aren't many women here…"* Felicia.

We're not worthy

This sub-theme describes how service users can worry over their social environment from a perspective of being a disappointment to others. In some cases, the concern of being a disappointment comes from the fact that the service user has not been very active or made much of a contribution to the garden. This attribution is measurable and observable and therefore service users are aware that others may have noticed. Another reason for worrying about being a disappointment comes from feeling worthless or lacking self-esteem.

> *"Being a disappointment worries me…I haven't done much recently"* Peter.

> *"Oh yeah, I get that all the time* (worried about not being good enough)*...I've had, that has been an issue for me, long term issue, yeah, yeah, worried what other people think is kind of a long term issue that I keep thinking I've got to grow out of it"* Oliver.

Interviewees also discussed having concerns over upsetting other service users and would worry over having said or done something wrong. No one had intentionally set out to be spiteful, rather, the concern over having upset someone came from an attempt to be helpful. Through organising tasks in the garden or listening to people's mental health issues, for instance, some service users became distressed at the thought of having caused the other person harm. In the majority of cases, the belief in having done wrong is purely perceived with no concrete evidence to confirm any harm caused. For

some, however, their concerns of not being good enough or having done wrong stay with them and they take these worries home with them.

> *"Erm, so, and this is purely how my mind, how I worry about things…so, erm, so it was* [member's name]…*they started telling me about their* (personal issue described) *and…normally what my reaction would be, I'm really sorry to hear that and that must be really tough and how are you managing, that stuff. No, instantly…I said, what do you think was going through your, your* [acquaintance's] *mind you know…driving home I thought what must they think, I didn't even show that empathy, I didn't even say I'm really sorry so…I found that incredibly hard so I felt that I upset them…or it was more about what they thought about me, thought, you know, they're a bit uncaring…"* Felicia.

The perception that one has done something wrong can result in self-torment through ruminating on a particular scenario. This self-critical punishment can manifest into feeling so negative about oneself that they feel like dropping out of the NBI altogether. There is an element of over-sensitivity demonstrated in the extracts from a position of behaving cautiously around people with mental health problems and from the position of people internalising a small incidence as a major event that was their fault.

> *"Cos I'm quite erm, I get set off really easily, and that stuff just comes out, and then sometimes I go home and I say, why did I say too much, and then I can beat myself up, thinking, in turning it into something really big when I've not actually said anything major if that, yeah…I like, yeah, if I've ever upset anyone I've never intentionally meant to do it, and then sometimes I go home and, oh core, I might have been a bit loud there today, have I said anything"* Sidney.

Some service users describe feeling a lack of self-worth and worry about what other people on the intervention are thinking about them. This was felt from an aspect of the gardening activities that they were allocated, whether they were competent to carry them out or whether they felt they were not achieving enough in the garden.

> *"I didn't think I was worthy enough for of doing an herbaceous border…"* Daniel.

> *"…but I'll still beat myself up now saying I'm not doing enough even though I come here all the time, but yeah, that's a different thing"* Sidney.

> *"…some jobs that I work on I think, oh I dunno if I can do that, because you know, I get a bit* [pause] *but I just try my best"* Julie.

A lack of self-worth was also felt from concern over whether other people would want to know them, a disbelief in people valuing them, and perceiving themselves as the only negative aspect of the NBI.

> *"I was more worried about what people were thinking whether they would find me interesting and stuff so I had my own reservations about if I do invite these people am I worth their time sort of thing…I knew I felt really valued by people and loved by people there, but I kind of disbelieved it, I don't know why"* Daniel.

<u>Where no one knows your name</u>

This sub-theme describes how some service users like to keep their attendance at the NBI discrete. There were elements spoken about being embarrassed to be in attendance or embarrassed to be seen attending by people they knew. Interview extracts demonstrate how some people would go to great lengths to make sure they would not be seen by acquaintances by travelling to a NBI far out of the area they live in. Some service users are maintaining a pretence whereby they tell their acquaintances that the NBI is a charity they volunteer at, an allotment or a place of work. Others are happy to share in the knowledge that they attend a NBI, however, they hide the real reason they are attending, for instance, that they are coming for the social aspects or the garden environment rather than for their mental health. Although some service users enjoy the social aspects and consider themselves to have made a few good

friends, they have no desire to meet up outside of the NBI and would rather prefer to keep these friends separate from their life outside. This was described as keeping it 'discrete'.

> *"I was a bit embarrassed, cos I wouldn't ever have thought I'd ever been in this, sort of, place cos like, back when I was younger, like I'd go woah, look at all them lot in the garden, I wouldn't, like, joking around and stuff, and I'd be like, I wouldn't be seen dead over there sort of thing"* Sidney.

> *"... the key thing to learn though, obviously I live in* (name of town)*, so, and I went to Southend for the big reason that I didn't want to bump into anybody from my past particularly because I was struggling, so that was a big reason why I went to Southend so erm…if I ever bumped into somebody like random old friends from school I'd probably say I'm a gardener now I'm doing you know erm, like I want to do it as a career I really enjoy and I'm training and stuff, I wouldn't talk about probably the reasons I was there the mental health which was probably the more important thing…"* Daniel.

> *"What does it mean to me. It means, a group of quite close friends, after attending for probably fourteen months. Erm, friends that I only actually only meet here which is fine it keeps it kind of fairly discrete…I don't think I would want to, I dunno, meet up with* [volunteer's name] *and go to the pub, although that's probably the closest relationship"* Walter.

Mental health was described as a taboo topic whereby demonstrating some level of perceived stigma which is evidenced by instances of people discussing a fear of judgement. One interview extract discussed the uncomfortable feeling of acquiring the identity label of 'member' which is given to the NBI attendees. This was experienced as a 'bit demeaning' and the interviewee stated that they would have preferred an identity label that described a person of responsibility rather than vulnerability.

> *"…maybe I felt it could have been a bit demeaning possibly, and there's like this clear, cos I knew what member didn't mean, it didn't mean you were a volunteer or member of staff where you got paid and could be independent… maybe, you're associated with a level of not being fully, independent or fully, you know, self-*

> *sufficient I don't know so maybe it touched upon some bits I wasn't comfortable with… I guess there could be an issue with, if you were once a member you're always a member aspect of it so you're always at that same, you know there's no progression…so it's something I'm not very comfortable with to be honest, it could be a bit demeaning …but ultimately I do feel uncomfortable with the title member"* Daniel.
>
> Interviewer: What would you have been preferred to have been called?
>
> *"Yeah sure, obviously volunteer would be one erm, erm, whether, never thought too much about what I actually wanted to be called but volunteer would be one, I'm a volunteer…erm, maybe a garden lead, some sort of lead volunteer, a lead member maybe something with a, like a, you know, more of a role of responsibility in it rather than just a service user basically"* Daniel.

Not wanting to be seen attending a NBI or perceiving stigma attached to mental health is a possible consequence of the feelings that service users perceive to be the general public's attitudes and behaviours towards people with mental disorders. In some cases, the opinions expressed on the attitudes or behaviour of the general public come from a position of having negative lived experiences. For instance, one interviewee stated that when she told some friends about her diagnosis, their behaviour towards them changed.

> *"I think it scares people. I recently told some people about my diagnosis and they went quiet on me and they're wary of me now, like I'm dangerous or something which I'm not. Friends don't understand this if they don't have problems like that"* Harriet.

It was discussed that people can become defined by their diagnostic label and that some labels were seen to carry more stigma and negative connotations than others. Schizophrenia, for instance was described by several interviewees as being a very stigmatised diagnosis and one that they would not disclose to anyone if they had it themselves. Interviewees discussed how people with mental disorders shouldn't be defined by their diagnostic labels, and, on occasion, prejudice and offensive language had been directed at attendees of the NBI. On this

subject, one service user remarked that "you've got to have a thick skin in this world". They went on to describe an offensive incident that took place at the NBI, in which they were the victim, had not upset them and that it was just pure ignorance on the part of the perpetrators.

> *"I, actually I would not use the word, erm, because I have anti-psychotic drugs and I think that, if I say to someone, I've got psychosis, I think that would scare a lot of people actually…and if you say, erm, what's the other one, that borderline personality disorder, I think that is a bit dodgy, you think, what is, that doesn't sound very good. If you just say I've got a bit of depression, anxiety, then they'll say ah, oh yeah, yeah we've all got a bit of that, so I think there are certain terms you can use…and not, erm, I'd dread to think if anyone was ever, erm, schizophrenic, no one would go near you, probably"* Felicia.

> *"I was doing the hedge one spring, last year, a couple of young people come by and made er, a really ill, yeah just er, I'm quite mature enough to just, in one ear and out the other, they made a really, prejudice remark, they said something, and, yeah, it was very immature, yeah, it was very, they said something er, offensive, and I, you've got to have a thick skin haven't you, in this life, in this world today…"* Greg.

There appears to be an unspoken cultural or societal norm whereby service users are aware that people with mental disorders are frowned upon, shunned, stigmatised, discriminated against or even perceived as a threat to society. Interviewees described the attitudes of the public as perceiving people with mental disorders to be potentially dangerous. The public were perceived to have attitudes that included concerns over what could trigger a person with mental disorders to 'go off the rails' and seeing people with mental disorders as being like a 'rabid bulldog'.

> *"I've been in er, situations where people have been saying that people with mental health scare me, you don't know what their gonna do, erm they're very shunned in society…"* Peter.

> *"I still think, there's always gonna be that no matter what, for anything, cos people just, some people will look at you like, well he ain't alright in the head, so he could turn on me at any time, like some rabid bulldog or something, or he can't be taught new things cos he's got mental health…"* Sidney.

A desire to hide NBI attendance or mental health issues were not all based on perceived stigma or perceptions on what the general public's opinions might be towards people with mental disorders. Several interviewees discussed a lack of understanding, education, and ignorance about mental health from those who have not experienced it themselves. There is a general lack of understanding discussed within the interviews from friends, family and the general public. One interviewee even described a lack of understanding from professionals in the health sector.

> *"It needs to be, because compared to twenty years ago, mental health has just, plummeted, so, compared to twenty years ago, we need to start looking at it in an educational standpoint, and from a young age as well, so maybe like, secondary school, it, there needs to be a subject created whereby, it's purely, we need to address the stigma of mental health"* Ben.

> *"Er, I think it's hard to understand it* (mental health) *unless you've been in that situation yourself. Yeah, cos I think you're expected, especially with men, I think you're expected to just like rise above it you know"* Oliver.

Alongside a lack of understanding, it was discussed that the general public can also be sceptical of those claiming mental health problems. Interviewees felt that mental disorders were not taken seriously, and that the public considered that people who were declaring mental health problems were faking it. This notion could be fuelled by the fact that people with mental disorders can function well on some days and struggle more on others. One interviewee described how her friends found it hard to accept this change in functional performance.

> *"Erm, well they keep saying it's easier and people are more open now but erm, I haven't, I haven't felt that it's, I think it's the, grouping everyone together, even my family don't understand it because they say well, well you can do that cos you went out with your friend for a coffee, you did that, you went up to London. So you can do that and I, well that was a good day, that was a good week, so I don't think people do understand. And also, all you read about is people are saying, you know, they're all, everyone's all snowflakes and they've just got a bit of anxiety but, but, I, I don't, I'm still don't think people understand it"* Felicia.

A series of derogatory terminology was used by interviewees which reflected their experiences, or what they thought the general public's attitudes were towards those with mental health disorders. These were 'man up', 'get over it', 'pull your socks up', and 'rise above it'. A few interviewees also mentioned laziness as a public attitude towards people with mental disorders.

> *"Laziness. Pull your socks up, yeah you could, laziness, pull your socks up, erm, but then the public don't know…"* Gerald.

> *"I feel like, unless you've ever experienced anything it doesn't, if, sometimes people don't take it seriously, erm, and, I've had, I mean I've had people say to me, sort of, get over it, like don't, erm, they don't, and things like that and it's, yeah, I feel like it doesn't get taken as seriously as it should do"* Lydia.

<u>I can't stand losing you</u>

This sub-theme highlights the significance and importance of having made friendships during NBI attendance, and then having to cope with these friends dropping out of the intervention. For some people, they acknowledge that they rely on one particular person that they look forward to seeing and working with.

> *"God I'd be devastated, I would, and you know what* [sigh] *no I would and hopefully it doesn't come to that, but yeah, it wouldn't be the same, erm. Do you know what* [pause] *when they're not here, when they have like a day off it's awful, yeah, cos, they're, that's like my connection…and they brighten the place up, but you know, there's always someone to take over hopefully, but yeah, if they left, erm, yeah, I suppose yeah, I would come back cos I still need the place, it's just better with them around"* Gerald.

Other people came to the realisation that relying on only one person for friendship created a fragile support network and therefore left them vulnerable.

> *"So I've made many good friends here, and if they left, oh Christ, I know if one person left, that I would have many other people to kind of like talk to and have a good relationship with, erm…so, no I, if one person left that I got on really well with, which has happened…then I've got other people who I've created good relationships with as well. So that was very important to me that I didn't just have one person"* Anthony.

Participants described the effect from the loss, or potential loss, of a friend as feeling uncomfortable, lost, devastated, losing confidence, and being on their own. Participants also described this situation as interrupting their routine, creating a big gap, finding it hard to settle back down and not knowing what to do at the NBI with that particular person gone. In response to the temporary lack of attendance of a friend, one interviewee declared that they would reduce their attendance too. Should their friend drop out of the NBI altogether, then they stated they would eventually stop attending as well or, as the interviewee described it 'I would probably fizzle out'.

> *"Ok, so like,* [member's name] *who I was doing the crossword with, like, erm, every week when I come here, I tend to sit with her like most, and, erm, if she left I'd feel, because I get so used to things and stuck in my ways, like it becomes like routine and so if she left I would feel like there was a big gap…and it would be*

> *hard to settle back down and feel comfortable, so, yeah. I would still come back, and just see how I go"* Emily.

> *"…when I used to first come in, I used to work with* [member's name] *a lot, and if* [member's name] *weren't here I'd feel a bit like on my own and that and not knowing what to do…"* Sidney.

The saliency analysis highlighted further issues with gaining friendships during NBI attendance that also demonstrate support for a social curse perspective. These were how gaining friends can add pressure and that friendships can turn sour. The friendships turn sour concept was a standalone extract that describes how another service user at the NBI helped the interviewee to settle into the community by making introductions. Despite being described as a good friendship at the beginning, later, political-based conversations revealed a clash of personal differences which led to a falling out. The same interviewee went on to discuss how having friendships can add pressure and responsibility. The interviewee continued to describe how they do not allow anyone to get that close to them. They disclosed that another service user relies on them for friendship at the NBI and this was seen as a burden from the viewpoint of not feeling like they can take care of themselves well enough yet, let alone take on responsibility for someone else's wellbeing.

> [Member's name] *was actually the biggest breaker of the ice, yeah he was one of the ones who came, yeah for several months I was really close to him…I've got er, a lot of you know, quite strong views and opinions about it* (Ukraine and Israel)*, unfortunately so does* [member's name]*…cos he's slightly antisemitic, so er, I don't deal with those people so I backed away. I just literally cut it* (the friendship) *from one day to the next."* Edward.

> *"I don't think I want anyone to depend on me because I know I can't rely on myself yet to be dependable. Does that make sense? I'm not independent enough I'm not strong on my own yet. Yeah, no I don't ever get that close to anybody"* Edward.

There's no going back

This sub-theme describes how service users feel like they cannot return to the NBI. The events that instil this sense may differ, for instance, the awkward situation of having lost one's temper and becoming aggressive could leave the person concerned feeling too ashamed to show their face again. A deterioration in mental health, which can have an effect on a service user's behaviour may also lead to a temporary dropout. Interviewees described reflecting on their behaviour at a later stage and described feeling embarrassed.

> *"I think I felt like it once, when I was gonna walk out but that really, again, that was me not having a good day. And I, I, before I even come I could tell I, didn't want to get up in the morning and stuff, and then I've come here, then I've wound myself up, but it's never really been, where I've gone I'm never coming because of you again…it's like, you feel a bit embarrassed. Well you do, you feel embarrassed…"* Sidney.

> *"…there's* [member's name] *whose, not been for ages, not seen* [member's name] *for a while erm, I think because he had a right erm, angry session and doesn't feel comfortable coming back…I know he's got a, a, violent background, he's got erm, problems of controlling his own anger, and I'm pretty sure he got very angry one day here, and didn't come back afterwards… I think he's a bit embarrassed about how things went before…"* Walter.

Alternatively, some interviewees felt like dropping out because of the staff. There were clashes of personality and disagreements with staff on how the charity should approach garden activities, and one instance where an interviewee described feeling a sense of betrayal by a member of staff.

> *"…there was a couple of times where I, I, not threatened to leave but, but I was really upset by something… I felt like not coming back then when I was kind of seeing it as a betrayal"* Daniel.

> *"Sometimes, like there have been times where I've had to take a few weeks and think, do I really want to* [continue attending]. *Mainly because of some staff members', approach to, things…"* Ben.

> *"I had an incident with* [Staff name] *a couple of months ago, and I done more damage to myself by staying at home in two weeks than I did* [pause]…*I could have done it a lot better but I just, I just lost it…"* Gerald.

One service user described not wanting to return to the NBI from not feeling emotionally strong enough to deal with being asked how she got on with a book she was lent. The interviewee related how she had not had time to read the book, and they feared what the repercussions would be of having to tell the person that they hadn't got around to looking at it yet.

> *"I think the next week it was, and I think I mentioned to you, erm, it made me anxious* [chuckle] *that I hadn't even read this book that* [member's name] *recommended and those two things, I thought, you know what, I might skip this week because I can't cope with the repercussions"* Felicia.

3.3.2 Social cure themes

Despite the strong emphasis the interview schedule presented on exploring the social barriers, there was a significant amount of evidence identified for the social benefits gained through NBI attendance. Categorised under the main theme title of 'social cure' the psychologically beneficial social elements identified in this theme were divided into six sub-themes which were labelled, 'It's good to talk', 'Just being there', 'We are family', 'Where the sheep may safely graze', 'Autonomy leads to engagement', and 'We rise by lifting others'.

It's good to talk

Several interviewees discussed how they enjoyed the sharing of mental health disorders. However, there were some preferences suggested such as only disclosing 'some things to certain people' and needing to feel trust from the other person in order to confide in them. Some service users are willing to instigate the sharing of problems while others wait and listen to other people first and then view this as an invitation that allows them to feel comfortable to join in. As one interviewee described it, the act of someone else opening up and talking about mental health 'opens the door for me to share'.

> *"I'd say some things to certain people and I think that's absolutely fine it kind of works… so it makes it a lot more manageable mental health actually to talk to people in that way"* Daniel.

> *"They do* (talk about mental health)*, and I like it. I like being, listening to somebody else explain, something that's hard that's going on in their life, opens the door for me to share if I wish to…"* Walter.

Through the sharing of problems, service users are able to 'get stuff off their chest' or off load and offer possible solutions or advice to the problems discussed. One interviewee described the NBI as their counsellor because of the fact it offers the opportunity to share mental health problems with other people.

> *"Yeah it means quite a few things to me, but it is erm, it is for my mental health, it is brilliant for, to come here and speak to people when I'm feeling down and when I feel a bit lost, I can come in here and just blab off and calm myself down, without this place, Jesus Christ, it, losing my counsellor, I'd be destroyed again"* Matthew.

> *"…the other thing I like is the solutions that people share…I've certainly shared that I listen to these, erm, relaxation tapes…so there's an element of, kind of sharing, possible solutions to conundrums, that I like"* Walter.

One of the therapeutic benefits of talking about mental health with each other is that the attendees discover that they are not alone in what life predicaments they are going through or the ill health they are suffering from. There is a genuine shared understanding felt from like-minded people that is described as unobtainable outside of the NBI. The NBI appears to act as a surrogate counsellor as it offers a supportive network of empathetic people who are willing to sit and really listen.

> *"Yeah, I've had plenty of conversations like that* (about mental health)*…I really like those conversations I find them interesting. And I suppose in a way it helps me as well. Erm, for example right, so I've got Asperger's syndrome, and erm, there are one or two other people that are my age and my gender and that have that condition, and you know, talking to them about it makes me feel like I am not alone"* Simon.

> *"Yeah, they definitely do* (chat about mental health) *and I like it very much, and I think that should be much more, much stronger involvement…I think that's a fundamental part of why this place works…The understanding I think. Yeah, yeah the sharing and the understanding, you're talking with people who get it. I have a family who don't believe in depression"* Edward.

<u>Just being there</u>

This sub-theme illustrates that although some people may not be engaging in social interaction, it does not necessarily demonstrate that they are not benefiting in some way. Despite not wanting to engage socially, or perhaps being unable to engage socially through anxiety, just being in the vicinity of other people is helping to reduce social isolation,

decrease loneliness, and provide service users with a perceived feeling of being a part of something social.

> *"Some days I just don't want to talk…so I do get lonely. It helps being here to not be lonely…I like being around the people, it helps me a lot, I just don't talk…I get depressed I suppose…I did not talk back but they always included me though"* Harriet.

> *"…it's just nice to be in the company of other people, erm, even if I don't always talk to them…erm, to be around other people to not be isolated I like, erm, being out, hmm, knowing that there's other people around, so being able to see other people, but I don't like it if they come up and talk to me…"* Lydia.

Interviewees described social inclusion from a position of being able to listen to other peoples' conversations, observing other people, and being socially included from being accepted as part of the group despite not engaging socially. One service user describes their inability to talk to other people but goes on to discuss a sense of social inclusion as the other attendees of the NBI are happy to talk around them'.

> *"I, yeah, there are days when, probably I don't really want to do a lot of talking or I'd rather be on my own, but, I'd rather be on my own here than on, you know, anywhere else…you can still observe can't you"* Felicia.

> *"…sometimes I just sort of like to get on with whatever it is I'm doing but I still like erm, being in like, company of other people, so I can listen to them, or just, just, have a, I don't like being isolated so, I like being with others but not necessarily actually interacting with them…I enjoy it in the sense that I'm not on my own, erm, but I, I don't, talking's not my strong point so I don't always like to talk to people, erm, but, most people here are usually ok with that and they just talk around me, erm, so it's, yeah."* Lydia.

<u>We are family</u>

This subtheme sums up how both the staff and other service users can feel like an extended family. Staff are described as being able to offer lifesaving mental health support, while other service users provide social support and friendships. Even those with trust issues describe feeling relaxed among the people at the NBI. Service users and staff have formed friendships that are close enough to know when someone is not quite right or when they are struggling with mental health issues more than usual. One interviewee described how the staff were always checking in on them which they stated they had not experienced that level of support from any other mental health service.

> *"I look forward to it cos it's got my friends here, and I look forward to it cos I'm seeing the staff, cos if I'm feeling down, they normally cheer me up, and they'll help me, and they've helped me with loads of stuff as well, with doctors and everything, yeah, so without them, yeah, I don't know where I'd be…Just the friendships I've made. Yeah, yeah, the people yeah, it is definitely the people. Cheer me right up…I think that's one of the best, that's one of the things I enjoy, yeah"* Sidney.

> *"…I get really good support here, they're really supportive and they're always checking in with how I am with stuff so, like, yeah, so I've not had that sort of support from like mental health services that are like, not like this, like where they were one to one"* Emily.

The friendships that are built at the NBI go beyond the attendance days and service users will meet up with each other on the weekends.

> *"…there are a group of us that stick together and, like support each other, we've got a supportive network outside of the, the hub"* Simon.

> *"I go out with, I met* [member's name] *last night. I had a day off and he was popping into town, erm, went out, we had a fish butty…yeah so, I do meet people*

> *out…it gets me out me flat, If I'm not here* (Trust Links)*, then I'm stuck indoors in my flat"* Gerald.

The NBI was described as a club or community which is offering a sense of belonging, a sense of being supported, and allowing the service users to experience supporting other people. The other people at the NBI were described as the reason that gets you up and out in the morning. One interviewee (sheepishly) stated that there is a lot of love felt from the other service users.

> *"Member of staffs, my friends I've got here…I've already got now like* [member's name] *and* [member's name]. *And erm, speaking to* [keyworker's name]. *It's the people, yeah, if there was no people here it would be boring, it would be just land, but yeah, you need, you need that care, can I say it? Love. There is love here. I don't want to sound gay, there is love here…it's a club, it's a great club, and you need, yeah, it's a shame more people don't know about it"* Gerald.

> *"I know there's a big social benefit to going to Trust Links…I could be with people and amongst the same members which was lovely, really good and erm, community, certainly as time went on I could see it as a community…"* Daniel.

There was a general awareness described by interviewees that they knew other people had mental health issues and so they were able to demonstrate an understanding which led to an increased level of tolerance, patience and acceptance of disruptive or antisocial behaviour.

> *"I think a lot of us, even the people themselves who have got their own mental health problems see it in someone else really quite easily… I'm thinking, ok, they're not feeling too bright today and it might be, go over and say nice to see you, and leave it at that and pull away…I've learnt that I can spot and, and, deal with people who've got their own anxieties and what have you, really quite well, so I think I've either built or recognised what I already had that, you can cope with other people who are in a really bad place and, be really nice to them in a way that's going to hopefully help them feel welcome and appreciated and what have you"* Walter.

Antisocial behaviour was discussed as being allowed within the NBI since it was considered 'not the real world'. As one interviewee put it, the NBI is a place where 'it's okay not to be okay'. Interviewees discussed a desire to want to help one another and several people described their helping methods which included trying to get people away from talking about negative subjects and introducing oneself proudly as a member of Trust Links which subsequently identifies them as a mental health client. The goal there is to make people feel comfortable with attending the NBI for mental health reasons.

> *"I mean generally I'd say it is a place erm, that it's ok not to be ok so it's fine"* Paul.

> *"You know, and a lot of people have got different issues….they just go for a little walk…and just you know, everyone will sort of just bugger off and they'll just go for a little walk, you know to just, calm down. But it's acceptable ain't it. Yeah so, it's not the real world. Yeah, yeah you couldn't do that in the real world but here it's all right cos we all have good days and bad days"* Gerald.

> *"…when I introduce myself to new people coming along I'll say, I'm a member I come here for my mental, I think by me saying I'm a member, to somebody whose, in a much worse, mental health position than I am…it might help people to feel that, well if* [names themselves] *a member, and I'm a member you know, I'm, I'm no different to him, that's a positive thought…Give them a feeling of, erm, not being, in this dreadful place where, only people who've got really bad problems are coming along"* Walter.

There is a general feeling of empathy shown towards other service users, however, the feeling of empathy could go beyond the emotional responses of understanding and kindness and result in wanting to help someone by correcting any wrong doings. For instance, one interviewee described becoming angry at the injustice of someone having been treated badly and demonstrated a desire to sort the perpetrator out with physical violence.

> *"…because of the way I've been brought up, my anger can come through and I don't want to go over and punch someone in the fucking head for being an idiot basically to other people"* Matthew.

Where the sheep my safely graze

This theme encapsulates the sense that many of the NBI service users feel that the gardens offer them a safe space, and a space which is recognised as separate from the world outside the gardens. The gardens are acknowledged as being private and therefore provide a rest from the vulnerability felt when out in a public space. Within this environment service users feel comfortable and reassured that it is safe to talk to new people.

> *"I prefer it in a private space* [laughs]. *Erm, just that you're, you know, everyone here is a member like, and so like the staff are aware of everyone, whereas if it was in the public, you never know who's gonna come along, so like it could feel unsafe and uneasy, so, yeah...I feel like, since being here like, when I'm here I feel comfortable, so like when, when new people, like you* (the researcher)*, come along, I feel like I can, like safely talk to you and feel at ease, because I'm in a comfortable environment, so yeah, it's good, it feels safe"* Emily.

> *"…it's not all on top of each other it's kind of like, you get your own safe space…"* Oliver.

The gardens offer a safe environment for service users to be themselves and to know that their issues or behaviours will be understood and accepted by others. There is an element of feeling safe from being amongst your own kind, that is other people with lived experience of mental health issues. The safe space also provides the opportunity to attempt social interaction and practise gardening tasks and learn new skills where making mistakes are non-consequential. There is the knowledge that one can simply walk away if things were not going well which adds to the sense of the environment being safe. There was also a sense of being looked after inside the garden. One interviewee described the gardens as a controlled

environment. Service users are aware that the staff watch over them, keep an eye on social interactions and calm any difficult situations that may arise.

> *"…like, all these different people like obviously like, they've got problems like me, and us, that would be fine, but if there was different people who ain't got any problems, I don't know what I'd be like with that"* Jack.

> *"Er, I was like anxious erm, but like, if you notice like,* [facilitator's name] *would like constantly like, keep on checking on me that I'm ok, because they're aware of like how I struggle, so erm, like I say it's safe…so yeah they have like, measures in place, like I say like, have people checking on me and stuff"* Emily.

> *"Like I can walk away* [laughs] *at any point so there is a massive difference that I, I, there, plus, it's er, it's a controlled environment"* Matthew.

The NBI offered some service users a different world completely separate from the 'outside' world. There was an increased sense of vulnerability outside the garden. Trust Links' gardens are often surrounded by hedges and distinctions were made between being 'inside the hedge' or outside it. One interviewee stated that they felt sorry for the people stuck on the outside world as they had to deal with all the hustle and bustle that the outside world brings. For one interviewee, the gardens meant they could be themselves again and that once back outside in the 'real world' they felt 'broken'.

> *"…it's very positive here, it's not the real world, I hate going outside. When I'm here, you know I've been here now for like five years, and I just feel, I love the place, and do you know what, I'd be lost without the place, if there was no Trust Links I'd be just, rotting…I just, I feel safe here. I just. I'm broken when I'm outside"* Gerald.

> *"…definitely would have preferred it behind the hedge rather outside I felt, there's an increased sense of vulnerability outside in a public space on the street than when we were inside Trust Links, but felt very, very separated whether that's a good or a bad thing that's probably another question but, it definitely felt more secure even with the gate open, if you were on the right side of the fence you felt more comfortable…I felt sorry for them you know I wouldn't want to be in that hustle and bustle of the outside world and erm, I'd much prefer it being in here…it kind of felt like a different world basically"* Daniel.

Autonomy leads to engagement

This sub-theme demonstrates the importance of the service users feeling that they have a choice and a free will. The need for autonomy begins at referral with a preference for being invited to join the NBI over it having been prescribed as their mental health treatment. The psychological consequences of adopting medicalised terminology were also discussed with a preference for the use of non-medicalised identities. For instance, one interviewee thought the identity label of 'member' was brilliant as it suggests autonomy whereas they felt you were obliged to be a service user or a client.

> *"My initial reaction was I was being invited rather than referred, the word referral makes me think of, you've been sent, whereas actual fact it felt more like, I've been invited…I think members is brilliant, so much better than a client or a service user or a, a member feels like it's a club and I've joined it. It's got, good values, you choose to join a club, you don't choose to be a service user or a client, to my mind that is things that you're having to do so I think it implies an element of choice, member is a beautiful word for it"* Walter.

The need of having perceived choice or being invited weaves its way through all aspects of the NBI including attendance duration, social interaction, participation in activities, working alone or in a group, taking breaks and whether to wear the charity's logo embroidered uniform.

> *"Yeah it's perfect. Erm, well the great thing about it is, erm, well they* (members) *can walk around the gardens if they feel like they need to be alone or have that break, erm, or join in…choose or join in for a bit, take a bit of a break, join in a bit more, you know you have that freedom to do that"* Peter.

> *"As long as it was like voluntary to wear it* (the charity's uniform)*, it shouldn't be mandatory to wear it"* Oliver.

> *"I don't feel I would be, erm, raising any problems for anyone else if I went and had a cup of tea and thought ah I just go and be on my own. Erm, which is nice that ability to, feel you're allowed to, it's permissible to go and have a tea break"* Walter.

During one interview, the word agency was used to describe how it was felt that it was acceptable to take ownership over areas of the garden or suggest what a particular space in the garden was used for. In this extract the interviewee demonstrates a level of power and control to take charge of their actions. Other extracts demonstrate it is important to feel one has control over how long they attended the NBI for and having freedom to walk out of the garden at any time. At its most extreme, feeling like you have complete autonomy over your attendance at the NBI was stated as one of the main reasons why one service user still attended.

> *"I've got, more, I don't know whether agency is the right word, but I've got my right to say…here I could say to* [facilitator's name]*, how about putting some broad beans in here it feels like it's, yes that's perfectly sensible for you to come along and make a suggestion…"* Walter.

> *"Yeah, definitely* (a good place to come)*, because you, first of all you have space you have erm, the chance to make your decisions to whether to engage or not, and I think that's er, for me, one of the only reasons I still come here is because I can make the choice to come in here and not to talk to anyone or, to sit down and have a conversation, and not feel any pressure from anyone, whether I'm doing the right thing or wrong, and that makes it all, absolutely perfect"* Edward.

We rise by lifting others

This sub-theme illustrates the importance of being able to help other people. It demonstrates the significance to one's psychological wellbeing gained from feeling needed or of value to society. Interviewees described an innate desire to help someone that they see struggling, or in need. In some instances, there was a sense of injustice or a lack of fairness in witnessing someone in need. For instance, one interviewee discussed seeing a particular person who was being 'left out' from being physically unable to carry out the gardening and so decided to spend their days at the NBI keeping this person company.

> *"Ahh, young* [member's name], *erm, was feeling a little bit left out* (through being physically unable to work in the garden)*, that's why me and her started talking"* Ben.

> *"I've always tried to sort out other people so I can then sort myself out, because I think if I see other people struggling, I, they need more help than me…I'll go over and help if I can…I love helping other people, I would do it as a living if I could pass the exams* [laughs] *just to, yeah"* Anthony.

> *"…members really support each other and I think it's incredible… one of the things I learnt at Trust Links which is great is erm do not ever underestimate people in any capacity…there's a guy whose 60 called* [member's name]*…he was supporting this young lad called* [name]*, he was trying his heart out to support him…and he was getting a lot back from it and I was thinking that's great that he can do that and he can talk to him about it, he wouldn't judge him…"* Daniel.

Being able to help other people is described as providing the helper with an increased sense of wellbeing, makes the helper feel good about themselves, provides a sense of happiness and improves feelings of self-worth. One interviewee stated that 'all I want to do is make someone happy, cos that's where the true happiness comes doesn't it' illustrating how

important helping others is and how beneficial to wellbeing it can be. A second interviewee described how being able to support others was a driver to their continued attendance.

> *"…the bit of value I get out of it which is from feeling I am supporting someone else, which improves myself, feeling of self-worth, because I am, erm, helping other people…that's a good relationship where I'm getting something out of it by supporting someone else…I come back because I love supporting other people…I think it's quite a big benefit for me…I feel like I give support to other people which allows then me to feel personal value, I'm doing something good for someone else isn't that lovely, that gives you a nice warm feeling…I think there's an awful lot of value in the, being able to support someone else…"* Walter.

> *"So, all I want to do is make someone happy, cos that's where the true happiness comes doesn't it. When you make someone, who's maybe less confident, who's had a few knocks, who's had a few, and, you just want to make, anyone that you come across, you just want to make them feel a bit happier don't you"* Greg.

At times, helping others goes beyond purely assisting someone and turns into altruism. Displays of altruistic behaviour were reported by several interviewees which included being willing to sacrifice one's own progression on a horticultural course offered by the NBI in order to help someone else progress. The NBI also appears to have their very own Robin Hood with one service user disclosing how they collect the food that is donated to the NBI and, even though they need it themselves, they re-distribute it to other people in their community that they consider more in need.

> *"I've given out loads of stuff, I've given out a load of food to homeless people and people that, women that have been abused, where some women depend on foodbanks…I've given a lot of food"* Greg.

> *"I try and help them. Erm, and it's because I had, I've been in that situation myself at school and in life where I've felt like there was no one to help me, and I*

> *kind of get this mindset that I have to help them, like there's a guy in the course that's struggling and he can't read the questions sometimes so I feel like I have to help him read the questions, and even if that means that I'm held back a little bit like from the learning, I try and help him so that he's, he's still with the group like…I've tried to help them as much as I can, and they're happy and I'm happy cos I'm helping them, so I, yeah. I get a sense of happiness out of helping them, yeah, like, it's like you're really, you're really benefiting them, and they can progress and move forward with you"* Anthony.

Some service users are made aware of the fact that they are liked and cared about by other people and were missed when they are not present. There is a sense reported by interviewees that, not only are they missed for their company or friendship, but that an absence can lead to a concern for their welfare. The awareness that people care about them provides the person with evidence that they are needed and of value to the community. Other incidences of feeling needed and valued can also be acquired through non-social constructs such as being able to contribute to the care and maintenance of the gardens and being able to do a task particularly well.

> *"…if I'm not in, it will trigger through someone's head, it, like,* [member's name] *where I weren't coming in on Tuesdays, like he was oh you weren't here Tuesday… you can see that it does affect some people like…it's nice to, its, it's given me that bit where I am needed, I am wanted you know people do want to spend time with me, not just for work or anything else like, so yeah it is"* Matthew.

> *"…when people say that to me like you know you're known for the border and you're great with members and people like you and you're like the star of Trust Links cos* [manager's name] *says that* [laughs] *cos I've done really well, I've done really well on this project I do really warmly, I like that cos it is really important for me to know I'm valued basically…being somewhere where I can feel valued and confident is important…"* Daniel.

3.3.3 Coping strategy themes

A somewhat invisible set of coping strategies are being employed to help service users negotiate their way around the challenge of confronting their anxieties and facing social engagement. The invisible nature of the coping strategies means that to the onlooker, service users may appear more at ease than they really are. The coping strategies can heavily rely on the garden tasks, for instance, using activity as a distraction from the surroundings, to avoid making eye contact, as a way to facilitate or avoid social engagement, and purposefully choosing a task that results in lone working. Some service users are using methods akin to cognitive behaviour therapy techniques to maintain a determined attitude towards the barriers faced from mental ill health. Other people are employing a form of graded exposure therapy to social engagement. The graded exposure is being set by the service user themselves and at a level that is felt manageable. Under the theme ‘Coping strategies’, six sub-themes were identified which were labelled; ‘I get by with a little help’, ‘The trick is to keep busy’, ‘I want to be alone’, ‘The impossible takes a little longer’, ‘I think therefore I can’, and ‘Those who have a purpose can endure’.

I get by with a little help

This sub-theme highlights how attending the NBI is only achievable through being accompanied and supported to the intervention by a family member, friend, or a trusted professional such as a social prescribing link worker, occupational therapist or other professional. Many participants recognised that they needed someone who they already knew to accompany them to the NBI, and being very familiar and comfortable with the professional providing the supported attendance was described as an important factor. If the person

delegated to support the service user was a stranger, then the support worker themselves would increase the service users' anxiety and may contribute to a possible lack of attendance.

> *"…it's really hard to get someone to, look after you sort of thing and come with you…if it's a brand new person let's say, they, they're coming with you and you've never met them before it would be like, I don't think it would make any difference if that makes sense"* Sidney.

> *"I think it was cos I like* [Occupational Therapist's name] *an absolutely lovely person erm, and I think I could tell she's very polite and sincere and wanted me to do well so, in suggesting that to me, so that's good and I think I trusted her… she wanted me to do well, there was definitely some sort of relationship there you know that helped me to, cos I liked them and they were helpful and all that stuff, it was positive…"* Daniel.

Participants also described how they would not have been able to have initiated the referral process on their own and needed someone to phone up for them. Furthermore, the support network described within the interviews needed to facilitate introductions with the NBI staff. After introductions had been made, NBI staff would take over the role of support and make the introductions with existing service users to help settle new people in.

> *"I walked past it and saw it. My brother helped me, he phoned the number for me and they called me in for an appointment"* Harriet.

> *"Well yeah* [key worker's name] *a confidence booster within himself…he was the one who actually greeted me and…he walked me around the site… yeah, he made me feel very comfortable…and that was very important because, if I didn't have someone to boost my confidence then I don't think I would have stayed…he basically started the conversation because I don't, if* [key worker's name] *wasn't there I don't think I would have talked to anybody"* Anthony.

Supported attendance usually only occurred on the first NBI session, however, some participants required more than one day of support to attend. A lack of support to facilitate attendance appears to predict a lack of attendance.

> *"Yeah, I had my partner bring me. Er, and we just stayed for a little while and then, the next time she brought me again, but she sat like, away from me, just to be there"* Emily.

> *"So basically I had an occupational therapist go with me, took me there for the first time…and had a follow up session about three months later they come in to see how I was getting on so yeah, there was someone with me to get me to there and I wouldn't have done it on my own looking back, I would not have initiated that at all"* Daniel.

<u>The trick is to keep busy</u>

This sub-theme describes how service users are using the activities available in the garden to distract themselves from their surrounding environment. Engagement in activity allows them to feel they can 'disappear into the background' and avoid social contact. Activity appears to be working in the same vein as mindful or meditative techniques where participants of activity become absorbed in the present moment through fixating on one task, which in turn helps them to ignore the wider environment. Interviewees declared that they would feel uncomfortable socially without participating in the garden tasks.

> *"I can fixate on doing one thing and ignore everything else going on around me, like, and then when I step away, I'd just put me head down and go on"* Matthew.

> *"I just used to sweep, then I used to go home and keep a low profile…just got on with me work, had me dinner, erm, and then went…Yeah, just keep myself busy*

> *and that's my secret to my success, I know that sounds really corny but it is, it's just keeping busy"* Gerald.

Activity is also being used to prevent over-thinking, which has been described in relation to unwanted thoughts. Although the unwanted thoughts are not disclosed, several participants have described a lack of trust in people and being wary of them. Therefore, the over-thinking could be in relation to social factors such as overthinking their current social environment or ruminating on past negative social encounters.

> *"...probably doing the work to be honest because, I really really detest sitting around doing nothing, cos it makes me think. Makes me, sometimes I think about things I don't won't to think about, erm, so getting my head into something stops me thinking"* Simon.

> *"I work like with the digging and everything else because, it, it calms me down it stops me like* [sighs] *I don't know, having shit thoughts you know, like how bad my life's been"* Matthew.

The NBI staff are aware that activity can reduce the anxiety experienced by being exposed to a social situation. Activity can also facilitate social engagement and NBI staff will either prepare a task for a service user to undertake as a way of integrating them into the community space or attempt to offer an activity that involves casual groupwork such as picking soft fruit.

> Interviewer: Erm, so, how did you manage to cope?
>
> *"Erm, I would erm, be given a, erm, something to do by, like* [facilitator's name] *and they'd set me up somewhere on my own erm, where I could just, get on with what I was doing erm, and I did that for quite a few weeks erm, yeah…especially at the start I'd have a task to do and I would just focus on that"* Lydia.

Where service users are not engaged in garden activities, playing games on their mobile phones also help provide an activity that serves multiple purposes including offering a distraction and avoiding social engagement through appearing busy. The phone also assists in the passing of time before leaving the NBI. Smoking has also been described as an activity that distracts the service user from their surroundings.

> *"My way of managing was purely Pokémon Go…Yeah, cos I knew that there was er, Pokémon stops all around here…"* Ben.

> *"Cos my coping would be having a fag back then when I first started. It's just getting stressed in it and just takes your, it just takes your mind of it"* Sidney.

One participant described being able to engage socially 'through plants'. Here they used a shared interest in horticulture with a volunteer to reduce anxiety, build a relationship, and facilitate social engagement.

> *"I could talk to people through plants with* [volunteer's name], *I developed a lot of knowledge and connection with something which has bought me far… the gardening bought a hell of a lot of comfort…I had something I could learn and focus on and er, I was in a part of the garden which was kind of separate from the main social hub…through the gardening I think and doing something it's kind of lessoned my anxiety so I kind of got some benefit from it…I got into it quite quickly and that was quite a good social engagement tool…"* Daniel.

Activity is also facilitating service users through a phase of adjustment from mental torment to the quietening of the mind to eventual social engagement. Some participants felt drained and needed time before they felt they could engage socially. One interviewee described going through a process of 'checking in with themselves first' while another discussed needing to get active until their mind released them. Activity was described as helping service users to 'get a foothold' and 'feel more normal'.

> *"…like I say we've all got our own coping, like, how can I put it, I, I'm, yeah, I will go and shut down, like, and start digging, or something like that and start working in, until my head would release me to go and start speaking to someone else… so like, that's how I'll put it cos that's how it seems, sometimes it freezes me out from doing certain things, so I will go and concentrate on doing something, like the gardening, knowing that I can be left alone until I'm ready to step back into feeling a bit more normal"* Matthew.

I want to be alone

For some service users, coping with NBI attendance means being left completely alone in the garden. Social avoidance is actively pursued through seeking out the hidden pockets of the garden less frequented and avoiding group activities by choosing a task that allows them to work alone. Interview extracts demonstrate that those who like to be left alone clearly stand out and are noticed by other service users. While social avoidance has been attributed to a lack of confidence and social anxiety, social avoidance is also an outcome of mental ill-health and needing some alone time. For these individuals there is a sense of social fatigue and the engagement in nature-based activity provides a form of therapy.

> *"…there's parts of the garden where some areas are more suited to being by yourself and left so people generally frequent there, but yeah I'd say so one hundred percent even if it's walking around the garden keeping some distance, even if it's like sweeping up they'd be at a distance on their own…so yeah there definitely were people who were, you know, who would avoid the group activities…"* Daniel.

> *"I don't try to avoid it* (social engagement) *but I can see there are some people here who do. They'll keep themselves quietly to themselves, quite a bit…now and then you'll see one or two people who will, erm, stand alone because their feeling in a bad place… you'll see* [member's name] *very often sitting in the porta cabin on his own having his lunch even if we're all outside… yeah, quite a few people will avoid group activities and prefer to do something a bit on their own, erm, I would say there's probably a quarter of the people here who would, try and do something on their own"* Walter.

One technique for being left alone was to avoid making eye contact with other members. This is being used as a way to cope with being around other people. The perception is that if one is looking away from people or looking down at the floor then they are not inviting anyone to come and talk to them and therefore they should be left alone. Service users may also be avoiding eye contact as a way of blocking out their wider surroundings much like blinkers on a horse, and as a way of presenting a polite and subtle (non-aggressive) message that says, I am not to be approached. Despite this effort, one participant laughs at the notion that this coping strategy didn't always work, and people approached them regardless.

> *"I mean, yeah, erm, I try not to like, invite people into conversation erm, eye contact, I mean, I don't make eye contact anyway so hmm, yeah if I'm not looking at other people, then, yeah they, they're less likely to come up to me"* Lydia.

> *"Some, when, when I first met people I didn't give them eye contact, So I would look down, but then they would come and talk to me, so, it didn't really work out"* [laughs] Anthony.

While some members prefer to remain in a state of social avoidance, other people use the garden, in either an active or passive way to restore their ability to function. For instance, a few interviewees described needing time in the garden walking around or listening to bird song to help clear their mind. Having a bit of time to oneself allowed them to reach a position of feeling able to participate in social engagement.

> *"Yeah, I think with my Aspergers and how maybe erm, some of the, emotional, kind of, baggage I maybe carried at times I did need that* (to be left alone) *...sometimes I just really struggled to articulate my words properly, to say anything beyond two words, I felt maybe I should just let my mind just, just unwind for a good hour or two so definitely in those occasions yes I did…I just wanted time to get here and relax…because I really struggle to be around people from a, just a social point of view…so only from a point of view of getting a foot*

> *hold or just checking in with yourself just to make sure, to just have, have that moment, time to yourself really cos obviously, things like the aspect of bird song and stuff to get that thrill or that experience that you like, particularly in the morning cos I find the morning is more beneficial to do that"* Daniel.

One member recounted a recurring fantasy and expressed the ecstasy they would feel if not a single other soul was present to contaminate the beauty of the natural surroundings and the therapeutic environment. During this disclosure, the interviewee expressed a joy in the void of other people as offering a chance to intimately connect with and communicate with nature.

> *"…sometimes I get the image of this place being completely deserted and me just coming here and feeling absolutely perfect, if there was not a single other soul here, I would be in my, oh, my element, I'd just adore, but er, I know that cos I've experienced it and I know what that does to me. Being away from people, I'm just one of these people who don't like people…"* Edward.

<u>The impossible takes a little longer</u>

This sub-theme describes how members are using the NBI to gently and gradually expose themselves to social engagement whereby slowly building up their confidence. This freedom to act at will and in their own time is important. No one is forced to socially engage, and service users do so at a level that is bearable or acceptable to themselves.

> *"…my* (coping) *mechanism at first was to talk to people a little bit and then walk away, but then, gradually I built my confidence and then, and then I just started talking to them…"* Anthony.

> *"I tend to like not talk too much erm, when I'm first meeting new people…it's a really good place because like you can take your time, you haven't got to come here for like the full day, like I don't because it's too much for me, and like they're* (the staff) *really patient and yeah, supportive. Yeah, like I said just take*

> *your time, so I just took my time, like each week would be a bit easier than the last"* Emily.

Service users' extracts provide evidence that demonstrates how attending the NBI has contributed to creating change in their social ability and their growing confidence to engage with other people. The NBI creates an environment that facilitates social engagement experimentation in a safe therapeutic space where the people are sympathetic and share a lived experiential understanding of the social difficulties. Although most likely unconscious in its process, the social engagement experimentation strategy is acting in the same way as the cognitive behavioural therapy technique of 'graded exposure'.

> *"I felt very nervous, when I first started here right, I wouldn't say a word to anyone, literally not a word to anyone…as, erm, I got settled into the place you know I got talking to people…in my experience yeah, it's been absolutely invaluable to my confidence. Cos you know when we first met I just talked to you, if we'd first met when I first started here, that wouldn't have happened, I would not, I would have stayed well away from you. If you had started talking to me as I said earlier I probably would have, done the minimal, what I had to do out of politeness and just, got out of there as soon as I could"* Simon.

> *"I remember…we'd all sit in the cabin every lunch and break, but that, that took a while for me to sit in there and start having lunch and that, that took me a good month, month and a half, I'd sit out here in a wheel barrow…erm,* [pause], [sigh], *er, I'd say yeah* (NBI is good for social anxiety)*, but it's hard and it will take time cos I, I didn't want to speak to anyone and I just wanted to stay in my room all the time"* Sidney.

<u>I think therefore I can</u>

This sub-theme describes coping mechanisms that evolve around adopting a positive mental attitude or altering one's perception. The extracts demonstrate service users utilising cognitive behavioural therapy techniques although probably unknowingly. For instance, one interviewee described how they altered their thinking around attending the NBI and went

from feeling nervous to excited to be undertaking something new. They went on to describe their joining of the NBI could be seen as an 'adventure'.

> *"I suppose sometimes there's that sort of hesitancy because I've got Aspergers, so doing something new, something different I've got to do it a few times to be happy within my bubble sort of thing, so, but there was also this sense of excitement walking to somewhere going to something new like an adventure so you kind of counterbalance my doubts with the potential…"* Daniel.

Other mental preparations included going into a 'blank mode' or going 'numb' and building oneself up to attending. One interviewee described having made a promise to themself, akin to a verbal contract to enable them to persevere and keep going.

> *"…I only lived five minutes away, and what I do is usually work myself up for about, I knew I was coming here so I, built myself up to come here, basically"* Matthew.

> *"…I go into my blank mode when I come here…when I get into that first gate and I enter that, that's, everything else is left outside. Unless it's really prevalent and I need to talk about something er, but otherwise I'll blank out and just go into one of those, just numb, numb moods of there is nothing there except the green…"* Edward.

There were also accounts of pushing oneself in order to progress and not quitting or giving up on oneself. This positive mental attitude would often arise out of desperation for positive life change, from a fear of not progressing on in life any further than being stuck looking at the same four walls, or even a fear of dying whilst stuck in their predicament.

> *"…I maybe wouldn't have come, but in saying that sometimes I push myself to try and, like progress myself…I knew I had to do something during the week just to get me out for a little while…I feel like, perhaps, I shouldn't have had to get to that point, but at the same time, I did it myself so, I've got myself to thank, so…*

erm, it's important to practise it and to keep coming back and like and keep trying…" Emily.

"I told myself like, if I don't do it I'm gonna just end up dying in my room…I just told myself if I er, if I sit at home I'm gonna be sitting at home all the time, erm, if I don't do something, so yeah, but yeah I was nervous, normally I get so nervous that I build it up so much into this massive thing and then I come here, and then it's not as bad" Sidney.

Those who have a purpose can endure

Despite the high level of anxiety described by the service users, those who maintain their attendance may be able to do so through having a greater purpose or life goal and therefore are able to push past their anxieties and persevere with the NBI. Evidence in support of this comes from one service user who stated that if they hadn't of had a greater purpose then they wouldn't have been able to build up the resilience to have dealt with some of the social difficulties they'd experienced. In their case, having a goal of wanting to become a professional gardener ultimately allowed them to overcome social challenges and prevented them from dropping out of the NBI. Alternatively, for those who felt a lack of purpose the NBI was experienced as soulless and boring.

"I know obviously [name of tormentor] *didn't stop me coming he just made it more uncomfortable… I'd say, the two key words, this is just my opinion is stamina and resilience, it's whether, again it could be connected to a social issue where they have that stamina and resilience to oversee it, to overcome any challenges like that"* Daniel.

Interviewer: I was thinking, but what if you hadn't had a greater goal of wanting to be a gardener as a career path?

"Hmm, I'd imagine I would have done something else, or maybe gone somewhere" Daniel.

> *"I don't feel I learn much…I'm usually just moving barrows of bark…I've done a lot of weeding and it's something that's er, it's a bit soulless, or soul destroying and it's just boring…"* Paul.

For some people there are certain life goals that they wish to achieve such as gaining skills and education for future employment while others are coming along to practise their social skills. There was also a sense of life purpose being fulfilled through being able to contribute to their local area and offering existing gardening knowledge.

> *"…and then he told me about the level one horticultural course, which really erm, which really made me want to come here, for learning and development, like erm, learning new skills so that I could move forward to getting a job… learn skills and learn knowledge and boost my confidence even more, that was very important to me boosting my confidence"* Anthony.

> *"I enjoy coming here and enjoy learning a bit and contributing to the beauty of the place…creating a er, lovely nature garden where the produce is passed onto the consumer and keeps the charity going…"* Greg.

For a few people, the NBI was acknowledged as being responsible for getting them out of the house, which they otherwise would not do. It was recognised by some, that without the NBI they would not have the confidence they had today, and that they'd probably still be stuck indoors.

> *"Yeah, but more for me it's er, it is helping me get out and just not sit in and rot away sort of thing, if I didn't have this, I'd been indoors just…I'd be so ill by now that I'd never come out my house, I'd never even look out the window, but yeah, coming here has stopped me getting to that point, and I look forward to it cos it's got my friends here"* Sidney.

3.4 Discussion

Chapter three has explored people's social experiences of taking part in a NBI for mental health. It aimed to understand what social elements may be acting in ways that support either a 'social curse' or a 'social cure' as described in SIT literature. In other words, what social processes may be causing psychological harm or enhancing wellbeing. There was a particular emphasis on exploring the social challenges and difficulties faced by NBI service users, therefore, the interview schedule leaned heavily towards exploring the social barriers. This was in response to the scoping review in chapter two on the personal barriers experienced from referral, uptake and attendance of NBIs (Burrell et al., 2024) which highlighted that the majority of barriers were of a social nature. Despite this aim, a large amount of data was collected that demonstrated a prevalence of social cure processes. A further aim was to explore whether NBI service users adopt or create any coping strategies to confront or negotiate their way around the social challenges and difficulties. The research identified three main themes, which were (i) Social curse, (ii) Social cure, and (iii) Coping strategies.

3.4.1 Social curse

Within NBI literature, socialisation is often stated as being beneficial to wellbeing (Barley et al., 2012; Harris, 2017), however, a large body of data was identified in support of the social curse theme. Certainly, the caveat presented by Granerud and Eriksson (2014) that social interaction is beneficial to wellbeing but only if one enjoys the company was reflected in the current study. Interviewees described having a dislike of other service users, feeling uncomfortable around certain types of people and wanting to distance themselves from

disruptive behaviour. The NBI provider used in this study operates an inclusivity policy which although commendable and harmless on the surface, can exclude other people by default. For instance, one interviewee described struggling to be around a particular challenging person and disclosed that if they themselves had not had a greater purpose to their attendance, they would have dropped out of the intervention. In this instance, the service user would have been indirectly excluded through the NBI welcoming challenging people onto the intervention. It was suggested in an interview that NBI members need to learn to build stamina or resilience to cope with disruptive people. Having a greater goal or purpose such as gaining skills for future employment for instance, was described as providing the resilience required to persevere with or endure the distress caused by the offending individuals. Needing a purpose to endure is reflective of Victor Frankl's 'Logotherapy' described in his book 'Man's search for meaning' (Frankl, 1959). Currently, Trust Links describes itself as a person-centred intervention, however, the charity could integrate this with Logotherapy which focuses on a person's personal life purpose and goals whereby operating as a meaning-centred therapy.

Service users had a habit of making social comparisons and judging themselves against other people attending the programme. Making social comparisons is a part of the human condition whether intentional or unintentional and remains a pervasive social phenomenon (Suls et al., 2002). Social comparison entails the comparing of the self to others in order to evaluate or enhance aspects of the self, however, social comparison can result in positive and negative contrastive effects influencing outcomes such as self-concept, level of aspiration, and feelings of wellbeing (Suls et al., 2002). Social comparison can have a particularly bad effect on people with mental health disorders such as those presenting with depression (Gilbert, 2000). For instance, depressed

people tend to compare themselves to those who they perceive are doing well while disregarding any comparisons with those people who are more average and who, making a comparison with, would give them good feelings about themselves (Gilbert, 2000). Interview extracts demonstrated that NBI service users are making social comparisons and judging themselves against other people attending the intervention. Akin to Gilbert (2000), one participant revealed that they only compare themselves to people who are doing well and not with those who are struggling. Comparing oneself against others is clearly detrimental to wellbeing and a respite from making comparisons is welcomed as demonstrated by one female participant who stated how they were pleased that the service users were mostly males as this meant she was unable to compare herself against other women. In this study, the emotions generated through social comparison included feeling ashamed, guilty, annoyed, and making assumptions about their life accomplishments such as they are not doing as well in life as another given person. Feeling ashamed is connected to how we think other people see us, but shame can also be felt through one's own critical self-evaluations and feeling inferior to other people (Gilbert, 2000). Interviews revealed a lack of self-worth and general worry around what other people were thinking about them, while gardening activity comparison included a general concern over competency and achievement. The results identified in the current study, along with evidence discussed in mental health literature, provide a warning for the potential for NBIs to exacerbate self-critical thinking and contribute to the forming of a negative self-image.

The current study also demonstrated that socialisation could contribute to distress and psychological harm through hearing other people talk about mental health problems. For some service users, the garden environment offers a chance to escape their mental health

issues and shift attention outwards towards nature. However, overhearing other people talking about mental health issues was described as a negative emotional trigger which caused distress. On the surface, talking about one's mental health issues could appear harmless and indeed many talking therapy trials do not consider the eventuality that treatment could cause harm, mainly because of the assumption that psychotherapy only involves talking, with perhaps a little exposure (Nutt & Sharpe, 2008). Despite this, there are concerns that psychotherapy can worsen a person's symptoms or even accelerate ongoing deterioration, a phenomenon termed the 'deterioration effect' (Bergin, 1967). A study by Jarrett (2007) reported that approximately ten percent of individuals receiving psychotherapy treatment deteriorate or worsen after treatment. People suffering from PTSD have also been shown to deteriorate with various psychotherapies such as 'emotional debriefing therapy' (Sijbrandij et al., 2006) and 'exposure therapy' (Foa et al., 2002), which has seen PTSD symptoms worsen in up to twenty percent of patients in early treatment stages. It is therefore reasonable to assume, that those NBI service users who are reporting hearing mental health discussions as 'triggering' may be experiencing the deterioration effect as observed in emotional debriefing and exposure therapies.

Along with a dislike for listening to other people talk about mental health, this study found that self-disclosure of mental health issues could also cause harm through feeling ignored whilst sharing personal stories, feeling betrayed after disclosure, and regretting disclosure at a later date. Service users are unlikely to be trained counsellors and may therefore be unable to fulfil the traits required to promote a good therapeutic outcome, namely empathy, patient respect, confidentiality and being able to provide hope (Berk & Parker, 2009). From this perspective, there is the risk that well-minded service users may contribute to causing harm, especially if they came across as patronising, uncaring, inattentive and not remembering the

key details that are being disclosed (Berk & Parker, 2009). Feeling that one is not being listened to can add weight to or confirm any doubts about interpersonal skills and self-worth (Berk & Parker, 2009).

There were further psychologically damaging effects associated with the dynamics of social engagement discussed in the interviews, albeit all coded in the saliency analysis. These included 'Social engagement is complicated', a significant concept since the NBI charity's inclusivity policy takes referrals from clients with intellectual disabilities and Autism Spectrum Disorder (ASD). Qualitative research asking adults with ASD to describe their experiences of negotiating their social worlds revealed adults with ASD can feel isolated, have difficulty initiating social engagement, experience challenges with communication, preferring intimacy, and desire a greater sense of social awareness (Müller et al., 2008). Desired social support discussed by Müller's participants included having shared interests, social anxiety strategies such as scripted social activities and small groups, and alternative modes of communication with support to interpret social cues (Müller et al., 2008). Without any of the aforementioned social supports in place, NBIs are merely relying on service users with ASD to self-initiate coping strategies such as distraction through physical activity and finding a common interest with others, two social coping strategies described in the current study.

Another example of the complications of social engagement coded in the saliency analysis was 'friendships turn sour'. This code contained a description of how a friendship can deteriorate through getting to know a person's morals and values or political stances. One interviewee described a friendship which later deteriorated into

avoidance of that person when confronted with a political-based conversation. Research suggests that politics, regardless of prejudices can cause arguments among peers. In the United States for instance, negative intergroup attitudes towards political affiliation are widespread i.e., Republicans often hold negative attitudes toward Democrats and vice-versa (Iyengar et al., 2012). Buliga et al. (2021) explored friendships and romance across the U.S. political divide and provide the reader with a series of anecdotal reporting of how inter-political tension can create problems in relationships with reports of people losing friends and family members. The NBI involved in this research does consider some topics inappropriate, as stated by one interviewee, however with political polarisation in mind, community-based interventions may need to look deeper into what conversations can cause distress or arguments.

The same participant that generated the code ‘friendships turn sour’ also generated the code ‘friends add pressure and responsibility’. Here, friends were described as a burden through letting you down or through feeling a level of pressure from having to care for someone else. Research conducted on the difficulties of friendship has revealed that friendship can challenge one's sense of self, particularly if one has a strong notion of what makes a friendship (Smart et al., 2012). Friendship can also create guilt through a sense of failing or not being good enough, for example, being unable to respond to the demands of friendship (Smart et al., 2012).

The study has revealed that socialisation through NBI participation has the potential to cause distress and psychological harm. However, whether the NBI attendee experiences socialisation as a curse or a cure is irrelevant if the referral is not followed up. For

example, this study demonstrates that social anxiety created an inability for people to initiate the referral process on their own. Furthermore, attending the intervention resulted in high levels of anxiety and several interviewees stated that they needed someone they knew to accompany them to the NBI. Indeed, a study by Wood, Polley et al. (2022) revealed how a social prescribing link worker expressed that when you have someone with anxiety, the thought of getting to the intervention, leaving the house, using public transport and meeting new people becomes difficult.

Non-attendance to psychological therapies is common ranging from 30% to 75% of referrals depending on research design and clinical service setting (Knekt et al., 2021). In a study conducted in the UK assessing non-attendance of referrals made to the Improving Access to Psychological Therapies (IAPT) service, one third of referrals resulted in a non-attendance (Sweetman et al., 2023). Mental health diagnoses were described within the main risk factors for non-attendance, specifically having a depressive disorder and lower anxiety symptoms. People presenting with more severe anxiety symptoms on the other hand were more likely to attend initial appointments. The severity of anxiety is unknown within the current study; however, it could be the case that the results are in line with Sweetman et al. (2023). For instance, those who reported anxiety as a barrier to NBI referral and attendance could have a lower level of anxiety, while those with more severe anxiety symptoms could represent those described in the theme ‘I think therefore I can’ which highlights how people are able to persevere with NBI attendance out of desperation for a positive life change. The number one risk factor reported for non-attendance of IAPT assessment appointments was being referred by a GP as opposed to self-referral. Again, there is evidence within the current study of GP’s affecting attendance provided in the theme ‘Autonomy leads

to engagement'. Here interview extracts demonstrated a preference for non-medicalised terminology and a need to feel invited to join an NBI over being referred to the service. Although non-attendance of IAPT referral was reported as relatively low (one third), Sweetman et al. (2023) conclude that non-attendance is problematic for IAPT services and therefore requires some form of additional intervention to initiate improvements. An additional intervention has been stated within the current study, namely the need for supported attendance from a familiar and trusted friend or professional.

Research being piloted by Natural England to tackle the problem of overcoming the social anxiety barrier of attending NBIs is testing a pairing scheme called 'Nature Buddies' (National Academy for Social Prescribing [NASP], 2024). Nature Buddies are specially trained volunteers who will befriend NBI referred clients and work with them on a one-to-one basis or work within small groups to give service users the confidence to start taking part and to continue taking part in NBIs (NASP, 2024). The findings in the current research however, present two potential problems. First, there is evidence of an over-reliability / over-dependence projected onto one person to boost confidence and facilitate NBI attendance. Second, this study illustrates how devastated service users can feel when a friend or trusted person drops out of the NBI. Alongside these concerns is the problem of volunteer drop out and the fact that the life expectancy of a volunteer-based programme is dependent on the ability to enlist and retain volunteers (Yanay & Yanay, 2008). Even the most committed of volunteers may find themselves dropping out, for example, through a change in living circumstances such as place of residence or changes to employment (Blake, 1992). Other research into volunteer dropouts has revealed that volunteers can experience distress from a lack of understanding what their exact role is, and the level of responsibility they have for the service user, along with feeling confused, overloaded, and vulnerable (Haski-Levental, 2005).

An over-reliance on a volunteer was identified within the saliency analysis of the current study where one participant came to rely on the presence of a volunteer to facilitate their attendance. As evidenced above, this reliance is problematic since volunteers' attendance can be short-lived.

Another significant social curse construct that was revealed in the current study was that of mental health stigma. One of the most stigmatised groups in society are those who live with mental illness (Stuart, 2008). The World Health Organisation (WHO) recognises stigma as a major health challenge (WHO, 2022). For a definition of stigma see chapter one section 1.4.1. The concerns of stigma do not lie solely within a person, rather they exist in a social context and are governed by societal and cultural norms and beliefs (Major & O'Brien, 2005). Although socialisation via community engagement programmes has been shown to be beneficial to wellbeing through group membership, community belonging, reduced loneliness, perceived social support and increased quality of life (Wakefield et al., 2022) membership of a stigmatised group such as 'mental illness', may be one circumstance where social identity can lead to damaging effects rather than beneficial outcomes (Cruwys et al., 2014). For instance, people with mental illness are at risk of being labelled 'mentally ill' which is associated with negative connotations and could lead to discrimination (Corrigan, 2004).

Research exploring stigma and help-seeking has found that both social stigma and self-stigma were the biggest barriers to accessing mental health support (Gulliver et al., 2010). Social prescribing research has also identified fear of stigma which acted as a factor affecting uptake and attendance to community-based programmes (Pescheny et al., 2018). Likewise, the

current research revealed a societal belief that the subject of mental health was a taboo topic and therefore should not be talked about. Stigma was felt within a variety of social scenarios including feeling embarrassed to be in attendance of a NBI (and therefore wishing to keep their attendance discrete), hiding the real reasons for attending the NBI, and hiding certain mental health diagnoses. Stigma was also felt from a fear of judgement from the general public. SIT suggests that where a group lacks a positive identity for its members, the members will be motivated to either leave the group or dissociate themselves from it psychologically (Tajfel & Turner, 1979, p.34). In the current study several interviewees mentioned the specific goal of attending an NBI out of the locality in which they live to avoid being seen in attendance by acquaintances. One interviewee even took a train journey to reach their chosen NBI to guarantee their attendance would remain unknown. Here, the social dilemma of acquiring the membership of a low-status group as described by SIT was solved by social engineering and making sure no one who knew them would find out.

There is a risk of self-stigma whereby an individual internalises the attitudes of the stigmatising public towards their own mental health (Corrigan et al., 2006). The results in this study provide data that demonstrates how the interviewees had personally experienced negative opinions and hurtful language from friends and the general public. Exposure to these negative events would likely provide a reinforcement that it is not acceptable to be a mentally unwell person in society. Even in the case that no stigmatising events were experienced, perceived stigma can be just as damaging to psychological wellbeing (Schmitt et al., 2014). Identity is an important but complicated factor, and this study identified three codes which described differing identities formed through NBI engagement. These were a ‘member’, a ‘volunteer’, and a fear of being mistaken for an offender on community service. Firstly,

acquiring the label of ‘member’ was disliked by some service users and they try to distance themselves from it. One method being used is a form of ‘social creativity’ whereby service users are renegotiating their NBI identity to that of a garden volunteer solving a number of issues discussed in SIT, namely, distancing oneself from a low-status group, losing a stigmatised label, and providing oneself with a role of responsibility (Haslam et al., 2018). Incidentally, one service user described enjoying acquiring the label of ‘member’ because the label removed any clinical inferences and felt more in keeping with a club membership. The third social identity code, being mistaken for a community service offender, was a concern expressed by two interviewees linked to the wearing of high visibility jackets, which occurred on occasion when working outside the garden, along the hedge for example. Perceiving one might be mistaken for a community service offender adds another layer of shame to an already discriminated against social identity, i.e., mentally ill.

The social curse data revealed that service users had a collection of negative thoughts about what the general public think about people with mental ill health. Interviewees described people with mental disorders as frowned upon, shunned and a possible danger to society. Interviewees also felt that the public were sceptical of those claiming mental health problems. SIT states that people who are faced with a low social status, in this case a mental health service user, will engage in strategies to manage being devalued (Tajfel & Turner, 1979). The interview extracts within the social cure theme illustrated the psychological benefits of providing support over receiving support and this is reflected in the social strategy being used to avoid a low-status identity by preferring to identify as a person of responsibility rather than a person of vulnerability, in other words, preferring to identify as a volunteer over a service user. Service users in this research not only discussed identifying themselves as volunteers,

but also as participating in a community allotment, and creating the pretence that the NBI was a horticultural course or training programme. Although the TA revealed a level of stigma felt through identifying as a mental health service user, for an unbiased debate, it should be highlighted that the saliency analysis revealed that some interviewees (n = 6), liked to promote their NBI attendance. The instances of promotion identified included advertising the NBI by wearing the charities uniform in public, talking about the charity if anyone asks, and chatting to friends and family about the benefits of NBIs for mental wellbeing.

3.4.2 Social cure

A large volume of social curse evidence was identified in the interviews. Given the fact that exploring the social challenges was a principal aim of the research, this was anticipated. However, there was a significant amount of evidence identified within this study on the social elements that induced psychological wellbeing. There is a wealth of evidence that demonstrates the positive effect of social connectedness on health and wellbeing (Haslem et al., 2009), and results collected in this study are no exception. SIT (Tajfel & Turner, 1979) suggests that when a group that defines a person's social identity is compromised, for example, by stigma or low social status, then social identity as a positive psychological resource becomes reduced leading to negative health outcomes (Haslam et al., 2018). Regardless of this, SIT hypothesises that membership of a stigmatised or low social status group can still provide a wealth of wellbeing benefits. This is achieved through shared identities. For instance, benefits of shared social identity include feeling positively connected to and building trust among group members, and gaining a sense of meaning, purpose, and worth (Haslam et al., 2018). SIT also hypothesises that shared identity will result in an expectation from group members to provide support to one another, actually carry out the

provision of support, and furthermore, experience the support received more positively (Haslam et al., 2018). The latter benefit persists since any help given is construed more positively when provided by ingroup rather than outgroup members (Haslam et al., 2012). Other NBI research has revealed a similar notion where service users feel they are receiving more support from each other than they receive from the NBI staff (Wood, Polley, et al., 2022). In the study by Wood, Polley, et al. (2022) the service user who makes this statement also makes a distinction between the mental health clients and the staff, whereby acknowledging that there is an 'us and them' or an ingroup and outgroup. The providing of peer support paradigm may be contributing to a person's psychological wellbeing since research has shown that providing support is more beneficial than being a recipient of support (Bracke et al., 2008). This social benefit could be due to the importance of 'employment' and through a shift in identity from recipient to provider whereby advancing one's social status to that of a contributing member of society (Hutchinson et al., 2006). Evidence to this effect gained in the current study included displays of altruistic behaviour, i.e., the sacrificing of one's own progression to help someone else, and an increased feeling of wellbeing and sense of happiness. Being able to support others was also stated as a driver to continued participation of the NBI.

The current study revealed that service users perceived the NBI as a community which offered a sense of belonging and support. Service users were experiencing shared identities, and a genuine shared understanding was felt from 'like-minded' people with a sincere desire to help one another. Significantly, service users became aware that they were thought about or missed should they be absent which subsequently created a concern for their welfare. This provided evidence that they are needed or of value to other people. Being needed, or 'Mattering' as described by Rosenberg and McCullough (1981) is associated with the ability

to help others. Mattering is derived from the desire to be needed, that other people depend on us, and that we are important or significant to other people. The importance of 'Mattering' can be demonstrated with research that explored the effect of feeling like one does not matter. People who felt they did not matter also described feeling a lack of being needed and the perception that no one cared about them (Moore, 1997).

Another construct adding to the social cure in the current study was perceiving one has autonomy. The importance of autonomy in a patient population has been illustrated by a systematic review examining patient preferences for shared decision making (SDM) between patient and physician. The review included 115 eligible studies and revealed that the majority of patients preferred sharing decisions with physicians (Chewning et al., 2012). In mental health care, SDM involves the patient and clinician collaborating towards heath care (Slade, 2017). An argument in support of SDM is that clinicians have expert medical knowledge such as diagnosis, aetiology, prognosis and available treatments, while patients are experts on their lived experience of mental ill health, their social situation, and their treatment preferences (Coulter & Collins, 2011). SDM goes beyond clinician and patient preferences towards autonomy and is considered an important approach in mental health policy of many countries (de Silva, 2012). In England for example, it is recommended that SDM is carried out across all adult mental health services (National Institute for Health and Clinical Excellence [NICE], 2011). A qualitative study asking mental health care consumers their suggestions for improving mental health care concluded that the opportunity to partake in SDM is critical (Shields, 2019). In the current study, eleven interviewees referred to the importance of autonomy. Autonomy was described as being invited, having choice, and having freedom. Invitation was deemed important from referral, to wearing uniforms, and taking part in gardening. Choice was felt over whether to accept referral, when to attend and

for how long, when to take breaks, and whether to engage socially. Freedom was linked to coming and going as one pleases, saying no to activities, making suggestions on use of the garden space, and having freedom to take your time over activities.

Under the social cure sub-theme of 'Where the sheep may safely graze', half of the population (n = 10) described the gardens as a safe space with a feeling that the gardens were separate from the world outside. The gardens were described as 'safe' from a social aspect of being supported and looked after, being able to be oneself, having one's issues and behaviours tolerated and understood, and experiencing a chance to experiment socially without fear of stigma or judgement. Social prescribing services for mental health involve a complex interplay simultaneously providing a safe environment, social contact, meaningful activity, and therapeutic input (Catty et al., 2005). Feeling that a mental health service is a safe space has been suggested to be essential for service users to get involved and start developing social bonds (Bryant et al., 2011). Furthermore, Bryant provides multiple citations that evidence the value of a space being perceived as safe from the point of having an opportunity to feel more in control of how social encounters are conducted. This notion links back to the importance of autonomy and having the freedom to choose how to use the space. Since prejudice, judgement and stigma were described by the interviewees and felt beyond the boundaries of the garden, the NBI can provide a positive contrast to what some interviewees described as the 'real world' or the 'world outside'. Therefore, mental health services offer a valuable opportunity to escape (Bryant et al., 2011). Participants of Bryant and colleagues demonstrated that a safe space included the importance of feeling trust from staff and other service users, being accepted and understood by people who also experienced and understood mental ill health, and having shared experiences with others. A safe space was also felt through familiarity, however, there is a danger that when a place becomes a

person's safe space, they can have the tendency to put down roots (Cresswell, 2004). A strong attachment to a space can become a stranglehold whereby creating a tension between feeling safe and feeling trapped (Bryant et al., 2011). Indeed, the current study reveals that some service users have been attending for eight, nine, and thirteen years which could be indicative of a strong attachment or an example of being trapped. As community mental health services have faced accusations for making patients dependent, a review of the literature has been conducted to identify the meaning of dependency in the context of community mental health services (Bonavigo et al., 2016). The review highlighted several interpretations of dependency that are also identifiable within the current study. These were a feeling of dislocation from the outside world with a reliance on the service for social relationships (Firby & Boothroyd, 1994; Chopra & Herrman, 2011), and a dependency which can lead to service users viewing the service as the centre of their universe and subsequently life outside the service is less attractive (Firby & Boothroyd, 1994). Having formed social bonds within a mental health service, dependency was also conceptualised as gaining a sense of acceptance, belonging and stability (Chopra & Herrman, 2011; Petersen et al., 2015). Mental health services protect, support and provide a safe and welcoming environment aiding service users to become more confident within the service and therefore dependent on the service (Bonavigo et al., 2016). Where mental health service users have found a safe place away from stigma, isolation and lack of support, attachment and dependency may follow (Firby & Boothroyd, 1994).

3.4.3 Coping strategies

Attention Restoration Theory (ART, Kaplan & Kaplan, 1989) describes how nature only commands a low level of 'fascination' or attention which allows the mind to restore from

mental fatigue. Indeed, one interviewee in the current study described a need to start their day off by enjoying nature passively such as listening to bird song to give themselves a chance to settle in and prepare for social engagement. However, the majority of research participants described a coping strategy in polar opposite to the processes discussed in ART. This study revealed the need for a high level of fascination or attention which was acquired through engaging in the gardening activities. The high level of attention created a distraction that allowed service users to cope with being around other people despite their social anxieties but also aided in distracting service users away from their mental health issues such as negative thinking and rumination. The need for NBI service users to seek a high fascination environment could be explained by the fact that ART describes other components (being away, extent and compatibility) that natural environments must meet to restore one from mental fatigue. The ART component in question is 'Compatibility'. The compatibility element asserts that the environment must meet the criteria of the viewer. In other words, an individual expects to encounter an environment that serves the purpose of relaxation, therefore, an environment that presents a danger would not meet the compatibility criterion (Gavarkovs, 2016). Service users of NBIs may be utilising activity to create a high level of fascination over ART's 'soft fascination' since socially anxious people may view a NBI as a dangerous looking environment due to the presence of unknown people. The presence of other people may be preventing the wellbeing benefits of ART and interrupting the potential for the natural environment to be experienced as therapeutic or holistic. This construct was suggested by a few interviewees within the current study where the desire was expressed to be in the gardens alone.

Evidence that demonstrates the benefits of a high level of attention can be found in research exploring the use of craft as a therapy. For instance, knitting has been shown to enable people

who struggle in social situations to shift their focus from the self to the activity whereby creating an easier environment for social engagement (Stannard & Sanders, 2015). Crafting activity has also been shown to occupy the mind enough to prevent depressive thoughts (Riley et al., 2013), and captivating to the extent of a loss of self-consciousness and lack of awareness of surroundings (Burt & Atkinson, 2012). Further benefits of engagement in activity stated by craft makers included that attentional demands are high enough for all troubles to be forgotten (Pöllänen, 2015), relief from chronic pain and side effects of medications, and less dependency on prescription drugs (Burns & Van Der Meer, 2020). It is not unreasonable to extrapolate the results from craft activity and suggest that immersion in gardening (which is a craft in itself) is working to the same effect as described above. The mechanism of affect for why wellbeing benefits are gained through immersion in activities demanding high levels of attention can be explained by Csikszentmihalyi's theory of 'Flow' (Csikszentmihalyi, 2013). Briefly, Csikszentmihalyi aimed to understand how people felt when they were at their most content. To answer this question, Csikszentmihalyi turned to those who exerted immense amounts of time and energy pursuing a certain goal, for instance, artists, athletes, musicians, chess masters etcetera. From the accounts of hundreds of interviews, Csikszentmihalyi developed a theory of optimal experience he called 'Flow'. The term flow was used since many of his interviewees had used it to describe how it felt to be engaged in their particular goal or activity. Whilst in a state of flow, people described the loss of self-consciousness, a loss of a sense of time, all thoughts intentions and senses are engaged on the task at hand, and an inability to think about other aspects of life including unpleasant or unwanted thoughts. Essentially, through activity, one is completely absorbed in the present moment and caught in a meditative or mindful state of being.

Just as ART is claiming a low level of attention as mentally restorative, evidence gained in this study reveals activity can be equally as mentally restorative and was described as helping service users to 'get a foothold' on their day and 'feel more normal'. However, before taking a position on whether ART or Flow is the more likely driver of mental restoration, one should first consider individual differences and the possibility that both theories, although operating in polar opposite ways, are achieving this restorative effect. For instance, whether ART or Flow works for a given individual could come down to their personal levels of nature-connectedness and whether a person prefers passive or active nature engagement. One strength of NBIs as demonstrated in the current study, is that it allows the service user the freedom to explore what approach works best for them.

Several Cognitive Behavioural Therapy (CBT) tools are being used by the NBI service users albeit unknowingly. Briefly, CBT is an evidenced-based NICE recommended treatment for mental health. CBT surmises that people's emotional reactions to life events are strongly influenced by cognitions, and likewise, people's behaviour can have a strong impact on thoughts and emotions and, by changing what you do or think, one can have a profound effect on their psychological wellbeing (Kennerly et al., 2017). Within the results of this study, the CBT technique of 'graded exposure' is being used as a way for service users to tentatively dip into social engagement. The NBI offers its service users a safe space and the freedom to experiment with social encounters in a gentle and gradual manner. Behavioural exposure, according to CBT, aims for the person to learn a new response to their fear, such as social anxiety, through repeated exposure and gradually longer exposure duration until the anxiety response diminishes or dies away altogether (Kennerly et al., 2017). The success of this technique is evident in this study with the descriptions of growing confidence to socially engage, and the disclosure that the avoidance of social situations has progressed into looking

forward to being with friends. A range of other CBT style tools were also being used to negotiate continued attendance at the NBI. These were all cognitions and included maintaining a positive mental attitude and altering one's perception to view a daunting challenge as an exciting adventure.

One unique cognition used as a coping mechanism identified in the saliency analysis was coded as 'blanking out and going into a numb mode'. This mechanism was utilised on entry into the garden and was described by the interviewee as being in a blinkered like state where unwanted stimuli or thoughts were blocked out. Whether this is a conscious effort on the part of the service user, an unconscious anxiety or trauma induced state of being, or a technique learnt to induce a form of dissociation such as compartmentalisation, absorption or emotional numbing is unknown. However, dissociation as a technique allows for the separation of psychological processes, functions or states which serves as an adaptive function to provide a defence against stress and allows a person to detach from distressing emotional states (Bowins, 2004, 2006, 2012). Dissociation techniques such as absorption for instance, can be learnt and applied as a psychotherapeutic strategy and works by disconnecting from one's current external and psychological circumstances and becoming immersed in another focus (Ross et al., 1990, 1991; Waller et al., 1996). Research has shown than absorption in positive foci, such as nature can be applied in psychoanalysis to relieve emotional stress (Hymer, 1984).

Although not acting as a conscious coping strategy, a coping mechanism identified was having a life goal or greater purpose to the NBI attendance, such as learning new skills and increasing employment opportunities. The increased purpose appears to be responsible for

building resilience and allowing people to 'endure' the social challenges presented by the intervention. The present study revealed how one NBI interviewee would have dropped out due to a particular disruptive person if they themselves had not have had a greater purpose behind their attendance. Occupational therapists use meaning and purpose to influence their client's initial engagement and consider these concepts a vital part of the therapeutic process (Jackson et al., 1998). Indeed, NBI research exploring the effect of meaning and purpose in life has demonstrated the impact this factor can have on intervention attendance and psychological wellbeing. For example, a qualitative study looking at mental health recovery on care farms stated that remaining committed to the intervention took more than determination (Iancu et al., 2014). Here, participants discussed that their motivation to attend the intervention came from the undertaking of personally meaningful activities and engaging in activities that would benefit other people. Other significant factors identified by Iancu and colleagues that contributed to continued attendance included gaining basic work skills, developing competencies for future employment, perceiving that one has a 'normal job', and contributing to society. Incidentally, but relevant to the findings in the current study, Iancu and colleagues also identified that service users were managing their symptoms through work-based distraction.

Further evidence of the importance of meaning and purpose identified in the current study came from three interviewees who described experiencing a lack of purpose. The gardening activities were described as mundane, soulless, monotonous with no opportunity for personal development such as learning new skills or acquiring new knowledge. The lack of purpose experience helps to illustrate how having a purpose is a powerful coping mechanism and therefore a lack of purpose may result in dropouts. Research examining the reasons why people attend community programmes revealed that engaging in meaningful activities and

making social connections were the driving forces to attendance (Pernice et al., 2021). What constitutes as meaningful activity will differ for each individual, however, it is possible that meaning and purpose is derived from making social connections, particularly if the connections made involve providing support for one another as discussed in the social cure section.

3.5 Limitations

As a qualitative study, there are several inherent limitations. There is often a limited socio-demographic diversity, and certainly within this study the population was homogenous. The study used a purposive sample and researched the experiences of people who were in attendance of an NBI run by the charity Trust Links. The data obtained in this study came from a population of people who were able to maintain their attendance or persevere through any social difficulties, therefore it remains unclear how a person who has dropped out of a NBI experienced the social elements, what social challenges they confronted, and whether the social element led to the discontinuation of their attendance. It should be acknowledged that the researcher took up a volunteer position at the charity and became a trusted member of the community. The data generated therefore, may be influenced by the researcher's experience of working with, and getting to know the service users. The material could be interpreted differently by a less involved researcher, however, one strength to this ethnographic style methodology is that the researcher can add context and understanding. Furthermore, the researcher was able to interview a population that would have been unwilling to participate if they had not already been familiar with the researcher.

3.6 Chapter three conclusion

As far as it is known, this study is the first to specifically explore the social barriers to referral, uptake and attendance of NBIs and sought to uncover whether service users were using any coping strategies to maintain their attendance. The main findings under the social curse theme included making comparisons with other service users, the impact of friends dropping out, a dislike of other service users, rumination on not being good enough or having done wrong, the number of people attending, and support required to facilitate attendance and negotiate introductions. Coping strategies included avoiding eye contact, isolating oneself, graded exposure, observing others before engaging and keeping oneself occupied or distracted through nature-based activity. Where more extreme social difficulties were encountered, such as distress caused from a behaviourally disruptive person, having an increased sense of meaning and purpose allowed for the perseverance to endure and created resilience in the face of adversity. Despite the research largely focusing on the social difficulties, a large body of data was identified that described the positive benefits to the social aspects. This was not so much a demonstration of individual differences, rather that if people can maintain their attendance, then the social elements, which are experienced as the greatest barrier at the beginning of joining a NBI, ultimately become the most enjoyed aspect offering the greatest wellbeing benefits. Of particular benefit is the opportunity to be able to provide help to others, contribute to society, and feel needed and valued. This insight suggests the importance of prolonged NBI attendance and the significance of service users having a greater goal or greater meaning and purpose in order to maintain their attendance. In the next chapter, the social cure findings; increased meaning and purpose, providing help to others, and being needed and valued, have been applied in a practical manner to create an experimental NBI.

Chapter 4. Increasing the meaning and purpose of horticultural-related activities in a nature-based intervention

4.1 Nature-based interventions and the mechanisms of effect

Research exploring the efficacy of NBIs for people with mental ill-health discuss concrete or observable mechanisms for inducing mental wellbeing. These include nature engagement (Bowler et al., 2010; McMahan & Estes, 2015), social engagement (Barley et al., 2012; Harris, 2017; Wakefield et al., 2022), and physical activity (Chekroud et al., 2018; Wicks et al., 2022). Despite the evidence demonstrating the effectiveness of these mechanisms, research also demonstrates that the positive outcomes of these mechanisms are not reproducible across differing populations and therefore cannot necessarily be relied upon as a therapeutic tool. For example, alongside biophilia, which describes humans having an innate preference for natural environments (Kellert & Wilson, 1993), sits biophobia (Ulrich, 1993) which describes humans as having developed an innate fear of nature, particularly from the perspective of the dangers that the natural environment supports i.e., poisonous plants and animals (Joye & De Block, 2011). Likewise, socialisation as a medium for inducing wellbeing, termed in the literature as the social cure (Haslam et al., 2018) also has a polar opposite construct termed the social curse (Kellezi & Reicher, 2012; Jetten, 2018; Wakefield et al., 2019). Physical activity has also been shown to cause distress through the aggravating of existing injuries, and an increase in the awareness of a lack of ability due to physical ill-health (Wood, Polley et al., 2022).

Along with the concrete (or observable) mechanisms discussed above, NBIs offer additional abstract (or less observable) wellbeing mechanisms such as gaining hope (Cole & Christie, 2016; Harris, 2017; Sidenius et al., 2017; O'Brien, 2018; Gabrielsen et al., 2019), expressing creativity (Thomson et al., 2020), gaining new skills (Barley et al., 2012), feeling of value (Cole & Christie, 2016), support towards employment (Seller et al., 1999; Patil et al., 2009; Kam & Su, 2010), experiencing a destigmatised or normalised identity (Feildhouse, 2003), distraction (Gonzalez et al., 2010; Marcus & Sachs, 2014), the opportunity to help others (Triguero-Mas et al., 2020), providing an experience of responsibility and gaining meaning and purpose in life (Elings & Hassink, 2008; Schreuder et al., 2014).

4.1.2 Meaning and purpose in NBI research

The significance of several of the above abstract wellbeing mechanisms were highlighted in chapter three. These were being able to help other people and being needed or valued. Both these concepts resulted in participants gaining a sense of meaning and purpose. Given these findings, a focus on increasing a person's perceived meaning and purpose in life should be a prominent feature of NBIs. To inform the background of the current study, a literature search was conducted in five databases (PubMed, Medline, Cinahl, APA PsycArticles and Open Dissertations) to ascertain the extent to which meaning, and purpose has been explored or reported in NBI research. The search terms used are presented in Table 9. The database search resulted in 123 articles of which eleven were relevant. Only one article (Wästberg et al., 2021) specifically explored the concept of meaning and aimed to investigate whether participants perceived garden therapy as meaningful and what aspects contributed to the meaningfulness. The remaining ten articles briefly reported on meaning and / or purpose as

an incidental finding that was enjoyed by participants of NBIs, or as a mechanism that contributed to mental wellbeing. In addition, a second search was carried out in Google Scholar using a combination of terms from the database search string. Google Scholar revealed a further 16 results with just two articles specifically exploring the concept of meaning. These were Koura et al. (2010), who looked at the effects of meaningful horticultural-related activities for the use in an elderly population, and Cipriani et al. (2018) who aimed to uncover the value and meaning of a horticulture therapy program for clients in a long-term adult inpatient psychiatric facility. One Google Scholar result was a review (Masterton et al., 2020) which, under the heading 'having a purpose', described three articles already identified in the database search.

Table 9. Search string used in meaning and purpose database search

Search	Terms	Text Field
S1	Horticulture OR "Horticultural Therapy" OR Garden* OR "Nature Based Intervention" OR "Green Prescribing" OR "Green Social Prescribing" OR "Community Garden*"	Title / Abstract
S2	Meaning OR Meaningful OR "Meaning in Life" OR Purpose OR Purposeful OR "Purpose in Life"	Title / Abstract
S3	"Mental Health" OR "Mental Ill Health" OR "Mentally Unwell" OR Depression OR Anxiety OR "Mental Disorders"	Title / Abstract
S4	S1 AND S2 AND S3	Title / Abstract

Table 9 shows the search string used in the database search on meaning and purpose in NBI.

Reviewing the three studies that explored meaning as a specific aim (Wästberg et al. (2021), Cipriani et al. (2018) and Koura et al. (2010)), Wästberg et al. (2021) discussed how evidence could be provided for the efficacy of garden therapy as a mental health intervention, but highlighted how no agreement has been reached for what contributes to experiencing garden

therapy as meaningful. Their study aimed to address this gap and investigated whether a population of outpatient psychiatric care patients with a common mental disorder (CMD) perceive garden therapy as meaningful, and if so, what elements contribute to the intervention's meaningfulness. A variety of components were perceived as meaningful. For instance, the garden environment itself such as connecting to the land, relaxing and going back to basics, the social group and the connections made with peers which led to a sense of belonging, and engagement in the activities. However, whether an element was perceived as meaningful was connected to the individual needs of the participants. Wästberg et al. (2021) concludes that garden therapy has the potential to be perceived as meaningful, but only if NBI facilitators adapt the intervention to the needs of each individual.

The 'individual needs' described by the participants related to finding meaning within their existential struggles rather than in the pursuit of a meaningful or purposeful activity. Despite the authors declaring the garden activities contributed to meaning, there was very little description of these activities. For instance, of the eight named participants described by Wästberg et al. (2021), 'Jesse' perceived meaning through gaining insights about herself, 'Sam' found going back to basics and getting to know herself meaningful, while 'Blake' perceived the meaning of garden therapy as a possibility to socialise and make friends. 'Ash' perceived the meaning of garden therapy as an opportunity to be heard and verbalise her feelings, meaning for 'Chris' came from being able to relax and trust people, and 'Alex', although stating she did not like gardening, found the garden environment meaningful since it offered a safe environment which allowed her to stop and just be. 'Kim' described having been moved around health care systems and felt that no one took responsibility for her illness and therefore found meaning in the garden therapy as a possibility to land herself with someone that could care for her. Finally, 'Charlie' described the meaning of garden therapy

as energy enhancing. She discussed missing her work as a carer and caring for the plants offered her a substitute. The paucity of description or emphasis on gaining meaning and purpose through physical garden-based activity may be due to an all-female participant pool.

The second article, Cipriani et al. (2018) explored what value and meaning a horticultural therapy programme had for a population of long-term adult inpatients of a psychiatric facility and the opinions of therapists associated with the programme. Inpatients described finding meaning in education with the learning of plant care, while one therapist suggested that the simulation of having a job was important and stated how one inpatient had left the programme and progressed into employment. Accomplishment was also described as important which was gained through the garden activities having a useful purpose such as the consumption of the food they had grown and the giving of a plant to a parent, which one inpatient described as making them feel good. On this point, Cipriani and colleagues direct their reader to research by Parkinson et al. (2011) which suggests that purposeful activity such as growing food could increase level of motivation in comparison to non-purposeful activities such as general garden maintenance. Interestingly, a second therapist participating in the study shared a similar notion as Wästberg et al. (2021) believing that occupation should been designed to be meaningful and important on an individual basis. Cipriani et al. (2018) went beyond the concept of meaning as discussed by Wästberg and colleagues and identified purpose as well. Meaning and purpose are not used interchangeably here, rather they are discussed as separate entities with the experience of purpose leading to or contributing to perceived meaning. For clarity, it would have been useful for a definition to be provided by the authors of the difference between meaning and purpose. Additionally, a portion of the evidence is provided by therapists and not inpatients and therefore, some of the statements for what elements provide meaning are opinions as opposed to lived experience.

Finally, Koura et al. (2010), explored the physical and psychological effects of taking part in meaningful horticultural-related activities. Three groups of participants were created from occupational therapy students aged between 19 and 23 years. Group one was the meaningful activity group and involved preparing the soil to be used during a horticultural therapy session. Group two were asked to wipe a desk with a dry towel which was described in the study as an activity with a contrived component; and group three engaged in an exercise without any purpose or meaning involving pretending to do ironing on a desk. The students were asked to take part in a role play scenario and perform as an elderly person with monoplegia, (the paralysis of a single limb). Activity effects were measured through electroencephalogram (EEG) which examined three band waves; theta band (5-8Hz), alpha band (8-14HZ) and beta band (14-26Hz) as measures of relaxation and tension. Stress was assessed using a salivary amylase monitor, a device that indicates stress levels through amylase content in the saliva, and a Likert-type scale was used to measure levels of depression. Results from the EEG showed a greater reduction in tension for group one over the other two groups. Likewise, salivary amylase activity was significantly reduced post activity in group one, but no significant differences were found between pre and post measurement for the other groups. Lastly, significant improvements were found in depressive mood for group one, no change was observed in group two, however, group three (the pointless ironing action activity) resulted in a slight decrease in depressive state. Put simply, being asked to do an activity with no meaning or purpose resulted in negative affect.

The study's authors present limitations in the form of inadequate measures and state that their technical resource (Alphatec IV EEG recorder) was a simplified measurement apparatus, and therefore the reliability of the data is insufficient. However, the limitations go beyond the availability of technological resources and are seen in the study's methodology. The authors

do not state why they have asked their student population to perform as an elderly person of a single paralyses, therefore one must assume it is to extrapolate the results to that population. This brings up the question of how reliably an occupational therapy student aged between 19 and 23 can act this part without any lived experience of being elderly or paralysed. Secondly, the study describes exploring the effects of participating in meaningful horticultural-related activities, however, only one of the presented activities was horticulture related, the other tasks being more in keeping with household chores. Furthermore, the researchers dictate to their study population what a meaningful activity is without assessing first whether the activity is in fact meaningful to the performer. For instance, just because an activity has practical implications, i.e., preparing soil for future planting, it doesn't guarantee any level of meaningfulness to a given person. It remains problematic therefore, that the study states it is measuring the effects of meaningful occupation without having first defined what a meaningful activity is, why it is meaningful, and to whom it is meaningful for. This concept is of particular importance since the variance in differences of what an individual finds meaningful is made transparent through comparing results between Wästberg's population and Cipriani's population. For Wästberg's participants, meaning was found through self-discovery, gaining insights, the opportunity to have a voice and be heard, finding trust in people, making social connections, having a safe environment, and experiencing a place for mindful relaxation. By contrast, Cipriani's participants gained meaning through education, employment, accomplishment, engagement in purposeful activity and feeling useful.

The following articles (ten from the database search and fourteen from Google Scholar search) reviewed here contain descriptions of meaning or purpose as an incidental finding reported in the studies' results sections and were not an aim of the research. The articles described a variety of populations, for instance people living with dementia, where

participants described enjoying engaging in meaningful activities (Mmako et al., 2020), a renewed sense of purpose which increased wellbeing (Hewitt et al., 2013) and the importance of feeling useful again and meaning something to other people (de Bruin et al., 2021). Meaning was briefly described in research exploring NBIs for elderly residents in long-term care facilities. Meaning in this population was gained through building connections with others, impacts on mental wellbeing, opportunity to reminisce during activities, and having the ability and responsibility to take care of others (Freeman et al., 2022; Jueng & Liu, 2023). One article (Schreuder et al., 2014), reported on a youth population and revealed how important it was to them that the farmer gave them his trust which confirmed their value as a farm worker. The youngsters experienced support and encouragement from their mentor and found having responsibility meaningful such as taking care of animals. Meaning was also derived from experiencing success in their work, the activities being linked to individual learning goals and acquiring new future prospects. A single study consisting of a population from a homeless shelter also briefly reported on meaning. Shelter residents who undertook farm work received immediate benefits through perceiving the work as meaningful, important, enjoyable and worthy of repeating (Gibbins, 2019).

Fourteen articles from the search concerned mental health and ranged from common mental disorders, severe mental ill-health, mental health and addiction, mental health and youth care backgrounds plus frail elderly clients, mental health and physical problems, mental health and intellectual disabilities, and specifically, clinical depression. The majority of the evidence was qualitative with similar themes identified across the studies. Engagement in activities that provided for others was deemed very meaningful across several studies. One account made in the context of growing food for gifting to a foodbank stated how the event elicits excitement and provides a feel-good factor (Triguero-Mas et al., 2020). Engaging in activities

that were useful to other people was also identified by Iancu et al. (2014). Working with animals was enjoyed by participants on care farms and was described as important to take care of other living beings (Hassink et al., 2010; Ellingsen-Dalskau et al., 2016). Feeling useful and being involved in useful activities was identified as creating meaning (Elings & Hassink, 2008). Participants enjoyed 'real and useful work' which allowed them to feel a part of society (Hassink et al., 2010). Participants found it important to feel needed, to have a place and a role (Granerud & Eriksson, 2014) and to be able to contribute to society (Triguero-Mas et al., 2020). Purposeful occupation, particularly occupation that involved doing something for someone else created an identity transformation which was highlighted as meaningful in several studies. This was conceptualised in slightly different ways, for instance, from being a recipient of social aid to a provider of social care for others (Triguero-Mas et al., 2020), from a mental health service user to a farm hand (Iancu et al., 2014) and being approached as a worker as opposed to a client (Hassink et al., 2010).

Autonomy was identified as meaningful in three studies from an aspect of being able to choose tasks that were appealing, purposeful, enjoyable and personally meaningful (Hassink et al., 2010; Barley et al., 2012; Iancu., 2014). Meaningful occupation also influenced a change in life view (Gonzalez et al., 2011). Additionally, meaningfulness was gained through a sense of achievement (Aughterson et al., 2024) and accomplishment (Siu et al., 2020), particularly when participants were able to receive confirmation that an activity was executed well (Townsend, 2006). For instance, one participant stated how impressed they were when the trees they had pruned grew fruit (Iancu et al., 2014). One further account of finding meaning was a standalone statement identified by Fieldhouse (2003) of meaning being obtained through having a highly valued social network. The final three results from the search were unique in the fact that they reported an increase in meaning from the farmers

perspective of operating a care farm. Statements from these articles revealed that farmers experienced an increase in their quality of life (Ihlebæk et al., 2015), gained an altruistic satisfaction from seeing positive changes in their service users (Leck et al., 2014), and found it rewarding watching service users gain confidence and master farm tasks (Lund et al., 2015).

Taking the search further afield to community engagement in general, Nagata et al. (2022) suggest that limited engagement in meaningful activities is one reasonable explanation for why people with mental illnesses experience elevated levels of depression. Their research explored whether an increase in community participation would be associated with a decrease in depressive symptoms and found that an increase in the amount of participation was not associated with a change in depression, however, engagement in a range of activities that were deemed as important and participating 'enough' in more important activities over time was predictive of decreases in depression. The authors conclude that community engagement service providers should aim to gain a clear understanding of each service user's personal interests and then support them in engaging in activities that are of importance to them (Nagata et al., 2022).

A lack of personally meaningful activity has been suggested as one possible reason for a low uptake of community engagement programmes. Lawson et al. (2022) proposes that there is a lack of tailoring social prescriptions to the client's needs and temperament. Indeed, there is some evidence in NBI research that demonstrates the potential for the activity to be a barrier to participation. For instance, beginning at referral stage, research has shown that there is a lack of appreciation or desire to participate with the broad activity of nature engagement

(Tambyah et al., 2022) or to not personally experience the activity of engaging in nature as therapeutic (Fernee et al., 2019). NBI's engulf a wide range of environments and activities and matching the right environment to the client is important. For example, this narrative literature review has discussed how service users working on care farms experienced life satisfaction from having a purpose (Elings & Hassink, 2008; Schreuder et al., 2014), however, working on a farm has also been described as unenjoyable (Murray et al., 2019). These contradictions illustrate nicely the significance of a given activity as needing to be embedded in personal meaning. Further research describes NBI activities as being repetitive and causing boredom due to lulls in activity, which has been attributed to lack of interest in the intervention and increasing the likelihood of client dropout (O'Brien et al., 2010; Wilson et al., 2010). In support of the biophobia hypothesis, research has also demonstrated a dislike for people putting their hands in the soil (Grabbe et al., 2013). Other statements describing a lack of meaningful activity include a dislike of physical activity and the activity being provided regarded as childish (Wilson et al., 2010). Evidently, a lack of personal meaning in a given activity can be a barrier to uptake of NBIs, however, activity can also be a motivator. Parkinson et al. (2011) conclude their research with a summary that states having a personal interest in gardening was the best predictor of higher levels of motivation to engage in a gardening-based NBI, and that this finding matches occupational therapy tenets that activities are not meaningful per se, rather they rely on social groups to invest them with meaning and purpose (Creek, 2003).

4.1.3 Defining meaning, purpose and meaningful activity

King and Hicks (2021) provide a review of the definitions for meaning and purpose as written and defined by a multitude of scholars. The consensus remains that defining meaning

is somewhat troublesome although definitions share commonalities. For instance, recurring themes within definitions for meaning include comprehension or coherence, significance, also referred to as existential mattering, and purpose (King & Hicks, 2021). Comprehension, or coherence describes the need for one to be able to make sense of their life and that when life experiences make sense life should feel more meaningful, while significance or mattering refers to the extent to which a person believes their life is important and their existence has an impact on other people or the world (King & Hicks, 2021).

Purpose in life and meaning in life have often been treated as synonymous (King & Hicks, 2021), however, it is acknowledged that having a life purpose constitutes to experiencing life as meaningful, or 'worthwhile' (Scheier et al., 2006). Purpose also results in greater goal commitment and engagement (George & Park, 2016), a desirable construct when considering motivational aspects and adherence to NBIs. Further definitions of purpose include that one's actions are guided by personally valued goals (Klinger, 1977; Mcknight & Kashdan, 2009), in which the goals reflect core aspects of one's identity (Bronk, 2011). Another definition suggests that purpose is a self-organizing life aim that regulates goals, behaviours and provides meaning (Mcknight & Kashdan, 2009). Perhaps, to conceptualise it more simply, purpose provides the reason to get up in the morning (Ryff, 1989). Either way, scholars appear to be in agreement that purpose is a driving force for engagement in life. Of the three components discussed, coherence, mattering and purpose, research demonstrates that mattering is the strongest predictor of meaning in life, and furthermore, mattering can be a predictor of coherence and purpose too (Costin & Vignoles, 2020).

On the surface, the concept of engaging people with meaningful activity appears straight forward, however, what constitutes as meaningful activity is complicated and requires some form of definition. For instance, what society defines as meaningful activity and what activity a person finds meaningful to them personally may be very different. There is some definitional ambiguity concerning what constitutes meaningful activity despite the term being used ubiquitously (Eakman, 2012). Eakman (2013) provides a review of the notions of what elements make up meaningful activity. These definitions collected together represent changing narratives over four decades of research. These include a need to find importance, security, worthiness, and purpose Keilhofner (1985, p. 505), however, all these terms equally require an explanation, for instance, what activity is purposeful and to who. Further definitions provided were the personal significance of an event (Christiansen & Baum, 1997, p. 599), the identification of personal values, beliefs, interests, and life goals (Jackson et al., 1998), experiences of pleasure and enjoyment (Persson et al., 2001), autonomy, competence in task completion, and goal progress (Eakman et al., 2010), and social connectedness, especially in the form of caring for other people (Ludwig et al., 2007; Aguilar et al., 2010). Eakman (2013) provides a summary of this collected work and suggests meaningful activity to constitute as having positive qualities of subjective experience in respect of human behaviours.

4.1.4 Meaning and purpose in occupational therapy

Meaning and purpose research is lacking in NBI and community engagement literature, however, turning to occupational therapy (OT) literature, research on meaning and purpose has been explored in depth and both meaningfulness and purposefulness have been suggested

as therapeutic mechanisms (Trombly, 1995; Schell et al., 2014). This mechanism could be transferable to NBI interventions since a qualitative study exploring barriers and facilitators of recovery in psychiatric patients revealed that engagement in meaningful activities such as developing new skills was stated by all participants as a key factor in recovery (Mancini et al., 2005). The meaning and purpose mechanism is suggested to work through finding a connection with something bigger than oneself, counteracting a sense of worthlessness, and facilitating distance from an illness-dominated identity (Mancini et al., 2005). Across OT literature, meaning and purpose as therapeutic mechanisms appear to demonstrate consistent findings for improvements in health and wellbeing.

Occupational therapy was founded on the principle that a lack of activity leads to mental and physical deterioration and therefore, engagement in activity could be used as a therapeutic medium to promote physical and mental wellbeing. Put concisely, OT recognises that ill-health is reversible through activity (Cynkin & Robinson, 1990). OT literature offers its own definitions of meaning and purpose which are specifically tied to occupation. Meaning refers to the personal significance that a given activity has for an individual, while purpose refers to a person's reasons for carrying out an activity such as their personal life aims or goals (Fisher, 1998). Activity can have a meaning or a purpose to it, however, it is often the therapeutic practitioner that has applied this meaning and purpose and in all probability the activity carries little meaning for the client involved (Fisher, 1998). A therapeutic practitioner therefore must strive to understand the values, beliefs and occupational experiences of their clients in order to present them with activities that are both meaningful and purposeful to them (Fisher, 1998; Schell et al., 2013). Failure to accomplish this can lead to 'occupational alienation' a term that describes a sense that one's occupations are meaningless which can lead to feelings of hopelessness (Creek, 2010). Providing personally meaningful activities to

one's clients has a further function beyond the goal of facilitating mental and physical wellbeing, namely motivation. The provision of personally meaningful activities can be used to increase motivation and with it, increase a sense of purpose (Fisher, 1998). A failure to achieve this aim, however, could result in disengagement, or the activity being executed badly (Creek, 2003). OT's use the term 'volition' to describe the process that motivates people to select and carry out the activities they do (Schell et al., 2013). Volition is influenced by three factors, (i) personal causation, or how capable one feels, (ii) values, or what one considers as important, and (iii) interests i.e., what an individual enjoys doing (Schell et al., 2013).

Three review articles (scoping, systematic and an evidence synthesis), along with a meta-analysis provide a current picture of the efficacy of occupational therapy interventions for the treatment of mental health diagnoses. The scoping review (Petersen et al., 2019) aimed to assess studies that investigated the effect of occupation and activity-based interventions on a population described as having a serious mental illness. The systematic review (Gibson et al., 2011) assessed the effectiveness of the recovery model on adults with serious mental illness in the areas of community integration and a return to normative life roles. The synthesis of OT literature searched for evidence for the efficacy of interventions in adult mental health with the authors, Kirsh et al. (2019) cataloguing seven unique interventions. These were employment or postsecondary education, psychoeducation, creative occupations or activity, time use or occupational balance, skill development, lifestyle modification, or occupational engagement, group or family approaches, and animal-assisted therapy. The goal of the meta-analysis (Ikiugu et al., 2017) was to estimate the effectiveness of theory-based occupation-centred models, such as the model of human occupation (MOHO), in improving occupational performance and wellbeing among people with a mental health diagnosis. Combined, the

results across all three reviews and the meta-analysis reported clinically significant improvements in social functioning and cognition (Gibson et al., 2011; Petersen et al., 2019; Kirsh et al., 2019). Based on these findings, Ikiugu et al. (2017) conclude that theory-based occupational therapy interventions should be an integral part of rehabilitation services in the mental health sector. The literature review (Kirsh et al., 2019), suggested that the most successful interventions were (i) supported employment (Sem), which provides work placements and continued support in paid employment, (ii) individual placement and support (IPS), a version of Sem that helps people with severe mental illness gain and maintain employment, (iii) supported education (Sed) a model closely related to Sem which typically involves supporting people with severe psychiatric disabilities who need ongoing support to be successful in postsecondary education. The literature review concludes that psychoeducational approaches may provide more significant benefits than other OT models (Kirsh et al., 2019). This finding, therefore, suggests that gaining success in education or employment may be experienced by OT clients as the most meaningful or purposeful pursuit in their intervention. This notion certainly links back to the horticultural therapy research by Cipriani et al. (2018) where mental health inpatients described finding personal meaning in education.

4.2 Rationale

According to Sir Austin Bradford Hill, inventor of the randomised control trial, correlation does not imply causation. For causation to be applied, the Austin Bradford Hill criteria suggest nine factors. Among these is consistency or reproducibility i.e., producing the same results across different researchers, populations, locations, circumstances, and times (Hill, 1965). The literature review above highlights inconsistency in the observable mechanisms of

NBI's, i.e., not all research demonstrated nature engagement or socialisation as mechanisms that enhanced wellbeing. Therefore, as far as the mechanisms discussed that enhance NBI service users' wellbeing, the mechanism of inducing meaning and purpose (as demonstrated in OT literature), may be able to consistently demonstrate a positive outcome to a person's wellbeing.

Research exploring the active mechanisms of NBIs that promote wellbeing are largely targeted around nature engagement, socialisation, and physical activity. Although engagement in meaningful activity is also cited as a mechanism for positive change within NBIs, there is very little research focused on increasing the meaning and purpose of an activity to explore its effect on a person's wellbeing. The majority of NBI research discussing meaning and purpose does not do so as a specific aim, rather meaning and purpose is identified incidentally as a contributing factor to psychological wellbeing. Despite the study by Koura et al. (2010) comparing different levels of meaning connected to activities, the study was not set in the context of mental health, the activities suggested as meaningful were not tailored to the individual, and nor were the purposefulness of the activities considered.

Chapter three identified that gaining an increased sense of meaning and purpose in life is important for continued attendance. Through utilising the occupational therapist's tool of 'environmental adaptation' (the practice of manipulating an environment to achieve a desired outcome), the study presented in chapter four proposes to explore the effect of increasing the meaning and purpose behind the activity of gardening. Furthermore, the study aims to demonstrate the outcome using the method of triangulation (Patton, 1999), i.e., qualitatively with focus groups, quantitatively using existing psychological outcome measurement scales,

and biologically through heart rate variability (HRV). The biological method will be used to detect any increases in emotional arousal as a result of increasing the meaning and purpose. This study is the first to manipulate nature-based activities to be more meaningful and purposeful for a mental health population. Additionally, it is the first study to provide HRV evidence as to whether increasing the meaning and purpose behind a NBI activity has an effect on mental wellbeing.

4.3 Research aims

The proposed research aims to enhance the meaning and purpose of gardening activities undertaken in a structured garden programme for adults with mental health issues and report the outcome using quantitative, qualitative, and physiological measures.

The aims of the research are to:

1. Explore whether increasing the meaning and purpose of the gardening activities increases the service user's psychological wellbeing, self-esteem, perceived meaning in life and purpose in life. This aim will be explored utilising four standardised psychological outcome measures.

2. Analyse the effects of the intervention by exploring whether increasing the meaning and purpose of a gardening activity increased its importance and emotional impact on the service user. This aim will be explored through the detection of emotional arousal through heart rate variability (HRV) with the direction of effect (whether negative or positive emotional arousal) being confirmed through the outcome measures and focus groups.

3. Explore whether the increased meaning and purpose increases a service user's sense of value to society, sense of being needed and/or creates any form of shift in social identity. This aim will be explored through focus groups.

4.4 Methodology

4.4.1 Service provider - Trust Links

In line with chapter three, this study recruited participants from Trust Links, an Essex-based charity which operates six community gardens for adults with mental ill-health. A full description of Trust Links was provided in chapter three. Ethical approval was granted before recruitment began (ethics application ID: ETH2324-0595).

4.4.2 Participants

A participant recruitment email pro-forma and the participant information sheet was given to Trust Links to allow them to forward the study details of the research on to their service users. Twenty adult service users were recruited aged 18-65 years (mean age 45.5, SD ± 10.1), 65% male (n = 13) and 35% female (n = 7), who were in attendance of their mental health gardening programme and who they deemed suitable (i.e., no intellectual disability or severe mental health) for the proposed research. Participants ranged from being in attendance of Trust Links from several months to many years. The recruitment process took place at two of the garden sites (Shoeburyness and Cressing Temple). The participants did not need to

travel outside of their usual garden sites to participate in the study. Individuals who wanted to participate in the study either replied to the recruitment email, via a member of staff at their garden site, or via the researcher directly. The recruitment email outlined the purpose of the study and invited participants to take part in gardening activities that would be of benefit to their wider community. The researcher acquired an enhanced certificate from the Disclosure and Barring Service and underwent a volunteer training session hosted by Trust Links. At the time of recruitment, the researcher had completed six months of volunteering (360 hours of volunteering) and became a trusted member of the Trust Links community. The researcher worked alongside the research participants and Trust Links staff throughout the duration of the study. Informed consent was collected in the form of a hard copy in the presence of the researcher immediately before the study began.

Separate information sheets and consent forms were used for the various parts of the study, i.e., psychological outcome measures, physiological measures, and focus groups and these were administered throughout the study so as not to overwhelm participants. Consent was first gained for the psychological outcome measures portion of the study, followed by the physiological portion, and lastly the focus groups. Once a Trust Links member had shown their interest in the study, the researcher sat down with the potential participant and read them the participant information sheet and consent form for the first part of the study. This was done to illuminate any lack of understanding about the study and to enhance inclusivity. The participants then completed the consent form at their next Trust Links session (minimum 24 hours to one week later depending on attendance rate of the specific person) to give them time to consider the information and ask questions.

4.4.3 Study design and procedure

The occupational therapist's tool of 'environmental adaptation' was utilised to manipulate the environment in an attempt to alter the programme offered by Trust Links (for the duration of the study) away from being purely a mental health programme. Although the participants were recipients of mental health care, they also became providers of support in their community through gardening activities and altruistic behaviour. The altruistic activity proposed and agreed to by Trust Links was growing cut flowers to give to isolated or lonely elderly residents in the Essex area. The altruistic behaviour is intended to increase a perceived sense of meaning and purpose behind the routine gardening activities that the participants undertake and is designed to provide the study population with a sense that they are contributors to society and who are of value to society. This study is grounded in psychological and occupational therapy theory i.e., social identity theory (SIT) and the model of human occupation (MOHO) and influenced by the notion presented by Brown et al. (2003) that providing social support may be more beneficial than receiving it. Furthermore, the study design utilises a concept from SIT hypothesis H3a as described by Haslam et al. (2018) "When a group that defines a person's social identity is enhanced in some way (e.g., by success, high status, or advancement), social identity becomes a beneficial psychological resource and tends to have positive consequences for wellbeing." (p. 18). Increasing the meaning and purpose (or value) of a given activity could counteract the negative social processes described in SIT, i.e., for social processes to be effective a group member must feel their identities are of value to society (Bowe, et al., 2019; Wakefield et al., 2019).

During the study, participants carried out the altruistic activity around their usual garden activities at their usual garden sites and on their usual day of attendance. The altruistic

activities included seed sowing, bed preparation, potting on, planting out, weeding, feeding, watering, harvesting, and creating flower bouquets. The participants also made handmade greeting cards and wrote a message inside to a named elderly person. This was done to reiterate that their work was going to benefit a specific elderly person. Due to the success of the flower gardens, participants were able to make up to four bouquets each. Distribution of the flowers grown for gifting to the elderly was conducted through contacts within church congregations and an elderly residential care home. The presentation of flower bouquets was handled by the researcher who gifted the flowers in person to an elderly person living in isolation. A single visit was also made to a care home where multiple flower bouquets were presented to the 15 live-in residents. A total of 36 thank you messages and photographs of the recipients were collected. All recipients provided their consent for these materials to be used in the study. The thank you messages were either created by the recipient or by the recipient and the researcher collaboratively and were collected in person with the exception of the care home messages which were sent to the researcher via email from the care home manager. The messages were in the form of written letters with photographs of the recipients with their flower bouquets. Some of the recipients wrote generic messages addressed to Trust Links while others wrote personalised messages in response to the name written in their greeting card. The thank you messages acted as ideological messages; a phrase termed in the literature to describe a message that is thought to inspire employee performance (Grant & Hofmann, 2011) and increase an employees' sense of purpose (Piccolo & Colquitt, 2006). In this study's context, the ideological messages are still being used to increase a sense of purpose, however, the outcome is not directed towards occupational performance, rather, it is directed towards enhancing psychological wellbeing. HRV measures were taken while participants received the ideological messages in the form of a 15-minute PowerPoint slide show. Within the slide show, participants experienced four stimulus conditions. These were, (i) baseline,

(ii) whole stimulus (the entire 15 minutes of messages from all recipients), (iii) personal messages from flower recipients (number of personal messages received in each slide show were up to a maximum of three and depended on the number of bouquets created by each participant), and (iv) care home recipients. The first set of outcome measures (see 4.4.4) were collected after consenting to the study and prior to the start of the altruistic activity, and the second set were collected straight after the participants had watched the slide show of messages. Focus groups took place within one to two weeks after the slide show on the participants' scheduled attendance day.

The slide show and HRV measures were carried out in a private room on location at Trust Links with no other person present other than the participant being measured and the researcher. Participants sat at a desk facing a blank wall with a laptop in front of them showing a photograph of a hand wearing the HRV sensor. Participants were invited to either attach the sensor to the end of their index finger themselves or allow the researcher to do it. Participant comfort was checked and confirmed verbally. A three-minute sitting still exercise was performed before the slide show began to take a baseline HRV measurement. Participants were exposed to the set of 36 messages arranged one at a time in a PowerPoint slide show. Each slide contained a photograph of the recipient and an audio recording of the message which played automatically. The messages in the audio recordings were read by the researcher. This method was used so that every single participant would experience hearing the messages read the same way, with the same tone of voice and emotional emphasis in all the same places. This was considered necessary to eliminate some of the confounding variables that may have affected the physiological measurements. The only alteration between slide shows was for when participants received their personalised messages. A note was made of the time that the personalised messages appeared in each participants slide show

for data analysis purposes. The slide show was around 15 minutes in total. Examples of thank you messages can be viewed in appendix N. Despite some of Trust Links' members asking to be part of the distribution, no study participant was allowed to handle the distribution of the produce due to ethical and health and safety considerations. The overall duration of the study was dictated by the growing season (approximately July to October) and the altruistic activity began as soon as the consent forms were completed and came to an end when the changing weather affected the quality of the produce.

4.4.4 Measures, data collection and data analysis

The study proposes to use the method of triangulation with the three methods of data collection being conducted through psychological outcome measures, heart rate variability, and focus groups. After each data collection method, all participants were offered the mental health contacts list as seen on the debriefing sheet and had a chance to ask questions. The full debriefing of the research aims was held back until after the focus groups to prevent subject-bias where participants consciously or unconsciously self-report or behave in a way that attempts to please the researcher.

Psychological outcome measures, data collection and analysis: The four pre-designed psychometric measures used in the study were the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS, Tennant et al., 2007), The Rosenberg Self-Esteem Scale (RSES, Rosenberg, 1965), The Multidimensional Meaning in Life Scale (MIL, Costin & Vignoles, 2020), and The Purpose in Life Measure (PIL, Burrow & Hill, 2013). Cronbach's alpha coefficient was used to determine the internal consistency of the four measures. To assess the

suitability of statistical tests used with the data collected from the four measures, a test of distribution normality was conducted using the Shapiro-Wilk test. Normal distribution was confirmed across all data sets.

The WEMWBS (Tennant et al., 2007), consists of 14-items covering aspects of mental health including positive affect, satisfying interpersonal relationships and positive functioning. The scale is scored on a 5-point Likert scale with responses ranging from 'none of the time,' to 'all of the time' and is scored from 14 to 70 with the higher score indicating better wellbeing. Tennant et al. (2007) reported a Cronbach alpha of .89 and .91 with the current study reporting a Cronbach alpha of .94.

The RSES (Rosenberg, 1965) measures feelings of self-worth and self-acceptance and is composed of 10 items, 5 of which are negatively worded and therefore reverse scored. The scale is scored on a 4-point Likert scale with responses ranging from 'strongly agree' to 'strongly disagree' and is scored from 0 to 30 with the higher score indicating better self-esteem. According to Rosenberg (1965), the RSES has good internal consistency with a Cronbach alpha coefficient of .85. In the current study the Cronbach alpha coefficient was .89.

MIL (Costin & Vignoles, 2020) is a 16-item scale that measures coherence, purpose, and existential mattering (or significance) in meaning in life judgements. The scale is scored on a 7-point Likert scale with responses ranging from 'strongly agree' to 'strongly disagree' with half of the items negatively worded and therefore reversed scored. Scores can range from 16 to 112 with the higher score indicating greater perceived meaning in life. No MIL alpha value

was reported using the Cronbach alpha coefficient (Costin & Vignoles, 2020). However, the Cronbach alpha for the current study was .95.

PIL (Burrow & Hill, 2013), is a short 3-item scale composed of statements that concern one's feelings about their life purpose. The scale is scored on a 7-point Likert scale with responses ranging from 'absolutely true' to 'absolutely untrue'. One item is negatively worded, and reverse scored. Scores can range from 3 to 21 with the higher score indicating greater perceived purpose in life. Burrow & Hill, (2013) reported a Cronbach alpha of .85 while the current study reported a value of .93.

Furthermore, as Trust Links assesses the outcome of their members' mental wellbeing using the Warwick-Edinburgh Well-Being Scale (WEMWBS, Tennant et al., 2007), in addition to primary data collection, the study collected secondary data from Trust Links (i.e., existing members' outcome measures) who had provided consent for the charity to share this data with a third party for research purposes. The secondary data was collected from Trust Links' members receiving treatment as usual and covered the same period of time as the altruistic activity. These Trust Links members did not take part in the altruistic activity and were based at different garden sites to where the altruistic activity was carried out. Primary data was collected in person by the researcher and took place in buildings made available to the researcher at Trust Links' garden sites which provided a private space. The secondary data was collected by Trust Links' staff and made available anonymously to the researcher on an Excel spreadsheet. The WEMWBS used by Trust Links was the short version (SWEMWBS, Tennant et al., 2007), which consists of half of the items taken from the full 14-item scale and is scored on a 5-point Likert scale with responses ranging from 'none of the time' to 'all of

the time'. To make a comparison viable between the full and short scale versions, the raw WEMWBS scores were converted into percentage scores using the formula presented by Rogerson et al. (2020): Percentage score = ((wellbeing score – minimum score for respective scale)/range of respective scale) x 100.

Statistical analysis was conducted using SPSS version 29.0.2.0 (SPSS Inc., Chicago, IL, USA). A paired samples t-test examined changes in psychometric outcome measures from pre to post experimental condition. A one-sample t-test was carried out to compare the pre and post intervention mental wellbeing (MWB) mean with the UK reported MWB population normative mean. Standard multiple regression was used to explore whether the change in MIL and PIL predicted the change in MWB and self-esteem (SE). An independent t-test was also carried out to compare the pre-post intervention change in MWB percentage scores between the altruistic activity group and treatment as usual group.

Heart rate variability data collection and analysis: Heart Rate Variability (HRV) was used to explore emotional arousal when the participants were exposed to the ideological messages. The process took a maximum of 30 minutes with, on average, 10 minutes for set up, 3 minutes for recording a baseline measurement and 15 minutes to watch the slide show of messages whilst recording HRV. HRV was measured using biofeedback technology Nexus 10 MK II, with Biotrace software (Mind Media Group, B.V., Roermond-Herten, Netherlands), with a sampling rate of 128 Hz. The data was processed using a custom written script in MatLab v2024b (Mathworks, Massachusetts, USA). The script was written to pull out and analyse the specific time sections in accordance with the stimulus seen by the participants in the PowerPoint slideshow. These were 'Baseline', 'All stimulus section'

(labelled as whole), ‘Recipient one’, ‘Recipient two’, ‘Recipient three’, (the personal messages) and ‘Care home’. Not every participant received three personal messages, therefore, for analysis purposes, the recipient stimuli results were combined into one averaged score.

HRV metrics and norms were used as guided by Shaffer & Ginsberg (2017). A 4th order Butterworth low pass filter was used on all HRV data with a cut-off frequency of 30Hz, and a sum slope function was used to find the peaks. The peak height that the amplitude had to achieve was determined by calculating 30% of the range of the sum slope function output plus the minimum value. This was the threshold, or the minimum amplitude, that a signal had to achieve before it could be considered a peak. Processing was carried out the same for baseline and for all the stimulus sections, however baseline and stimuli were analysed separately. The process was repeated for each participant. HRV data was analysed using time-domain and frequency-domain measures. The time-domain measure quantifies the amount of variability in the time period between successive heartbeats called the R-R intervals. The time domain metrics used were SDRR, the standard deviation of RR intervals, which quantifies the variability between consecutive heartbeats and provides insights into the autonomic nervous system (ANS); and the RMSSD, the root mean square of successive differences between RR intervals, which primarily reflects parasympathetic activity. The frequency-domain measure analyses the power distribution of heartbeat intervals. The current study used the Low frequency (LF: 0.04–0.15 Hz), high frequency (HF: 0.15–0.4 Hz) ratio with the assumption that LF power is produced by the sympathetic nervous system and the HF power is produced by the parasympathetic nervous system. A low LF/HF ratio suggests parasympathetic activation (rest and digest response) while a high LF/HF ratio suggests sympathetic activation (fight-or-flight response) (Shaffer & Ginsberg, 2017).

HRV data was exported into Excel (version 16.89.1) and all baseline parameter values (mean heart rate, SDRR, RMSSD, and LF/HF ratios) were subtracted from all stimuli parameter values before exporting to SPSS version 29.0.2.0 (SPSS Inc., Chicago, IL, USA), for statistical analysis. This was done to separate the data into the two distinct categories, baseline and stimulus since the stimulus also contained the baseline measure. Assumption tests were carried out (Shapiro-Wilk test of normality and Mauchly's test of sphericity) before conducting a one-way repeated measures ANOVA for each of the HRV measures to compare values between baseline, the whole stimulus, the averaged recipient stimulus, and the care home stimulus.

Focus group data collection and analysis: Qualitative data was collected through recorded focus groups of up to four participants in each group. Focus groups explored whether the participants experienced an increase in meaning and purpose, experienced a shift in social identity (i.e., from a recipient of health care to one who is contributing to their community), whether they felt a sense of value to society, and any changes to mental health and psychological wellbeing. Data analysis for the focus group was carried out using Interpretative Phenomenological Analysis (IPA). This method is suited to experience-type research questions and is used to explore persons-in-context, or people's lived experiences and the meanings they attach to their experiences (Braun & Clark, 2013). IPA is a qualitative approach that focuses on how people make sense of their experiences within the context of their personal and social worlds (Smith & Nizza, 2022). IPA goes beyond the summaries of people's narratives and tries to make sense of what the experience feels like from the person's view (Smith & Nizza, 2022). In the pursuit of psychological understanding, IPA holds an explicit belief in the value of subjective knowledge and a commitment to understanding phenomena from a first-person perspective (Eatough & Smith, 2017). Since humans are

sense-making organisms, IPA is an interpretative endeavour (Smith & Osborn, 2015) and therefore involves an interpretative process on the part of both the researcher and participant (Eatough & Smith, 2017). IPA involves the double hermeneutic, a two-stage interpretation process as the researcher attempts to make sense of the participants' sense-making. In this endeavour, the researcher must remain aware of the potential impact of their role in data production and must ground their interpretations in their participants' views (Cuthbertson et al., 2020).

IPA as an analytic method is grounded on the philosophical foundations of phenomenology (the study of consciousness as experienced from the first-person point of view), hermeneutics (The study of interpretation and how humans derive meaning), and idiography (the in-depth study of the unique individual, as opposed to seeking universal laws (Cuthbertson et al., 2020; Smith & Nizza, 2022). IPA was developed by Johnathan Smith in the 1990's as an experiential research method in psychology and is now a well-established qualitative approach in UK psychology. However, it has also grown in prominence in health and social sciences as a way to understand and interpret emotionally laden topics (McInally & Gray-Brunton, 2021). Additionally, IPA has been utilised in organizational studies (Agarwal & Sandiford, 2021; de Miguel et al., 2015; Tomkins & Eatough, 2014), education (Gong et al., 2025; Bond & Petronzi, 2025; Joseph, 2014; Thurston, 2014; Denovan & Macaskill, 2013), health (Cassidy et al., 2011; Seamark, et al. 2004), sports science (Powell & Gaffiero, 2025; Brown et al., 2018; Smith, 2016; Callary et al., 2015), policing (Turner & Jenkins, 2019), recruitment (Priyadarshini et al., 2017), tourism and hospitality (Deale & Crawford, 2018), and the humanities (Firdaus et al., 2025; Willis & Harvey, 2025; Hefferon & Ollis, 2006). IPA as a qualitative method is steadily evolving with researchers taking imaginative and creative stances to the approach. This is staying true to IPA's original spirit; to offer

qualitative researchers frameworks for conceptualising and researching psychological topics that are grounded in hermeneutics and phenomenology (Eatough & Smith, 2017).

The qualitative study in chapter three used thematic analysis (TA), however, this approach is not suited to the aims of the present research which seeks to understand how the individual interpreted and experienced their participation in the altruistic activity and the related phenomena. IPA differs from TA in that it is inherently idiographic in its commitment to in-depth, case-by-case examinations of individual experience, offering insights into how a given person makes sense of a specific phenomenon (Cuthbertson et al., 2020). After each case has been examined separately, the IPA process looks for patterns across participants and moves on toward broader, group-level conclusions and more general claims (Smith & Osborn, 2015). TA examines data by paying close attention to repetition in its identification of 'themes' whilst IPA pays close attention to context and process. (Smith et al., 2009). Unlike TA, IPA prioritises individual meaning-making over generalisations. The IPA method is driven by the researcher immersing themselves in the study data (inductive), while analysis develops through reflection (iterative), and the researcher incorporating psychological theory and extant literature to provide supporting evidence to the findings (interrogative) (Cuthbertson et al., 2020). Unlike TA, the researcher does not gain access to the participant's experience directly from their accounts, rather it is through a process of intersubjective meaning-making and reflective inquiry (McInally & Gray-Brunton, 2021; Cuthbertson et al., 2020; Smith et al., 2009).

Additionally, to the above, the rationale for using IPA is that its exploratory qualities have the potential to provide insight into topics of which little is known (Tomkins & Eatough, 2010;

Smith et al., 2009). The study design i.e., the manipulation of the community garden environment to incorporate altruistic activities is novel along with the combined use of the theory that the study is grounded in (SIT, MOHO and Logotherapy). Furthermore, a reflexive diary was completed throughout the study which allowed for the researcher to explore, identify and reflect upon their own experiences, situated knowledge (or biases), and assumptions (Cuthbertson et al., 2020), which is as essential part of the IPA interpretative process. The reflexive diary helps to fulfil the requirement mentioned above (that the researcher remains aware of their potential impact in data production).

IPA is also suited to small samples with a homogeneous participant population allowing in-depth exploration of the shared perspectives on a single phenomenon of interest (McInally & Gray-Brunton, 2021; Larkin, Shaw, & Flowers, 2019). In this instance, homogeneity is defined by all participants being adults taking part in the 'Growing Together' programme at Trust Links for mental health who were all exposed to this study's experimental condition, i.e., the altruistic activity. The IPA was carried out following the six stages of analysis as described by Smith et al. (2009). These stages include data immersion and keeping a journal of thoughts about the interviews (stage 1). Initial noting of semantic content and language use on an explorative level (stage 2). Developing emergent themes (stage 3). Searching for connections across emergent themes (stage 4). Repeating the process across all interviews (stage 5). Looking for patterns across cases (stage 6).

4.4.5 Ontology and Epistemology

The altruistic study utilises qualitative, quantitative and physiological methods in its data collection. Therefore, the study straddles the two dominant theories of knowledge, or epistemologies (the nature of knowledge or how we know things). These are positivism, which is associated with quantitative research and assumes an objective, external reality (realist ontology), and interpretivism which is associated with qualitative research and assumes a subjective, socially constructed reality (relativist ontology) (Kivunja & Kuyini, 2017). Positivism proposes the objective search for facts and asserts that the world exists of observables with a 'truth' that is waiting to be discovered through research (Given, 2008). Positivism subscribes to the uncovering of universal and law-like generalisations and relies on empirical evidence to discover an objective, independent reality that exists beyond the human cognition (Given, 2008). Positivism is generally served by an experimental methodology which aims to validate knowledge through formulation, hypothesis testing and the identification of statistical regularities (Kivunja & Kuyini, 2017). Within the positivist paradigm, theory is used to predict and manipulate outcomes, cause and effect are distinct separable phenomena, results of enquiry are quantifiable, and context is not important (Cuthbertson et al., 2020). However, although within the positivist paradigm an objective stance is sought, positivist empiricism acknowledges a level of subjectivity through restricting the knowable to the experienceable (Cuthbertson et al., 2020). Interpretivism proposes that reality is subjective and multiple realities will exist across research participants. Aiming to derive meaning from social constructs, interpretivism employs a fluid methodology and relies on an iterative process of interpretation shaped by the ongoing engagement between the researcher and their subjects. (Laverty, 2003). Within the interpretivist paradigm, the social world is understood through the subjective meanings and experiences that individuals attach to their social contexts, knowledge can be value-laden,

cause and effect is interdependent, and context is essential for knowledge production (Cuthbertson et al., 2020).

4.4.6 Subtle Realism

With the quantitative and physiological sections of the altruistic study commanding a positivist / realist approach, and the qualitative portion commanding an interpretivist / relativist approach, the current mixed method study shares the positions that an objective measurable truth exists but is open to individual interpretation. Therefore, an ontological position of 'subtle realism' is acknowledged in that subtle realism bridges the two paradigms. Realism posits that we should strive to understand the world from an objective framework whereas relativism posits that truth and knowledge are not universal, but rather relative to cultural, individual, or situational contexts (Given, 2008). Antirealist positions, especially within the social sciences, argue that objective human knowledge is impossible (Given, 2008).

However, strands of realism are compatible with contemporary understandings of science that incorporate interpretive perspectives into knowledge construction and are widely adopted by qualitative researchers (Given, 2008). Subtle realism bridges the gap between realism and relativism by accepting an independent reality (realism), while acknowledging that our knowledge of it is always constructed through individual perspectives (relativism). The world is understood therefore, by acknowledging that knowledge is a construction, but one that is constrained by reality. Subtle realism is often used in qualitative research, such as ethnography (Hammersley, 2002) and can be used to validify the findings by illustrating that

they are grounded in evidence, whilst acknowledging them to be one of multiple interpretations.

4.4.7 Subtle realism in interpretative phenomenological analysis

Utilising IPA as part of the current study's mixed methods approach combines lived experience with external reality (a realist perspective). Qualitative research has been conducted using IPA from a realist perspective (Jeong & Othman, 2016) with recent studies adopting IPA and realism to explore experiences of virtual reality (Kelly et al., 2023) and mental health support (Shen, 2021). Qualitative researchers use IPA to explore subjectivity whilst interpreting the findings in a broader context that assumes an underlying 'real' phenomenon that moves away from a purely relativist position (Jeong & Othman, 2016). Adopting a realist perspective in IPA would allow the study to remain grounded in the participant's experience (idiographic) while providing an additional analytical framework. Combining subtle realism with IPA could therefore strengthen the study through revealing the deep, subjective meaning of experience with an understanding of the external and objective forces shaping that experience.

The IPA researcher analyses data from each individual participant separately, prior to the identification of patterns seen across cases. Therefore, these patterns remain personalised portraits of individuals' lived experiences rather than impersonal statistics (Smith et al., 2009). In this manner, IPA complements a quantitative realist approach which does not allow the researcher to trace data back to the personal unique experiences of the original informants (Jeong, & Othman, 2016).

The method of data collection for the qualitative portion of the study is focus groups. Focus groups are a widely utilised method in qualitative research, offering a dynamic and collaborative dialogical environment in which to explore individuals lived experience (Rice, 2011). Their primary value lies in generating rich, contextually nuanced insights through participant interactions (Kitzinger, 1995). One critique closely aligned with IPA's idiographic commitment is that focus groups risk reducing individual meanings (Vella, 2025) while group dynamics could obscure individual experiences (Bontekoe, 1996). However, phenomenology's commitment to relational reflections and co-constructed meanings supports methodologies that enable collective interpretation (Vella, 2025) and, according to Gadamer (1998), authentic meaning is revealed through group conversation rather than isolated introspection. Focus groups have the potential to amplify phenomenological inquiry, produce nuanced interpretations of lived experiences that reflect individual perspectives and shared contexts. (Vella, 2025).

4.5 Results

4.5.1 Psychological outcomes results

Participants

Twenty participants completed the four pre-post outcome measures. The altruistic activity group mean age was 45.5 (SD ± 10.1), and the gender split was 65% male and 35% female. The treatment as usual group sample size was twenty-one with a mean age of 44.5 (SD ± 12.9). The gender split was 85.7% male, 9.5% female, and 4.8% other.

A paired samples t-test revealed a significant improvement in Mental Wellbeing (MWB) [t(19) = - 6.99, p <.001; d = - 1.56], Self-Esteem SE [t(19) = - 3.14, p <.005; d = - 0.7], Meaning In Life (MIL) [t(19) = - 2.98, p = .008; d = - 0.67], and Purpose In Life (PIL) [t(19) = - 3.46, p = .003; d = - 0.77] from pre-post intervention (Table 10). One-sample t-tests revealed the pre-intervention MWB mean was significantly lower than the reported MWB population normative mean (Tennant et al., 2007) of M = 51.61, [t(19) = -3.155, p = .005]. There was no significant difference to the normative mean at post-intervention [t(19) = -.204, p = .84].

Table 10. Means ± SD of changes in outcomes from pre-post intervention group

	Pre-intervention	Post-intervention
Mental wellbeing	43.8 ± ,11.1#	51.1 ±, 11.2*
Self-esteem	17.1 ±, 5.7	20.1 ±, 5.4*
Meaning in life	74.1 ±, 22.9	86.7 ±, 15.6*
Purpose in life	13.9 ±, 5	17.6 ±, 3.3*

Table 10 shows the pre-post intervention outcome measure scores. * indicates a significant improvement from pre-post intervention (all p<.01); # indicates a significantly lower score than the population normative value (p=.005).

Standard multiple regression revealed that the model, consisting of the change in MIL and PIL scores from pre-post intervention, significantly predicted the change in MWB [F(2,17) = 5.98 p = 0.011], explaining 34.4% in the change in MWB scores. The change in PIL independently and significantly predicted the change in MWB (B = 0.54, p = 0.02), however, the change in MIL did not (B = 0.04, p = 0.45). Each one unit increase in PIL is associated with a 0.54 increase in MWB score. Standard multiple regression also revealed that the change in MIL and PIL scores from pre-post intervention significantly predicted the change in SE [F(2,17) = 4.72 p = 0.023], explaining 28.1% of the variance. However, neither the

change in MIL (B = 0.1, p = 0.56) nor PIL (B = 0.21, p = 0.32) were unique predictors of the change in SE.

Altruistic and treatment as usual group comparisons

An independent t-test revealed a significant difference in the pre-post intervention change in MWB percentage scores between the altruistic activity group and the treatment as usual group (t(2.63) = 39, p = 0.012; d = 0.82), with the altruistic group having a greater improvement in MWB (Figure 3).

Figure 3. Mean ±SD of the change in mental wellbeing percentage scores.

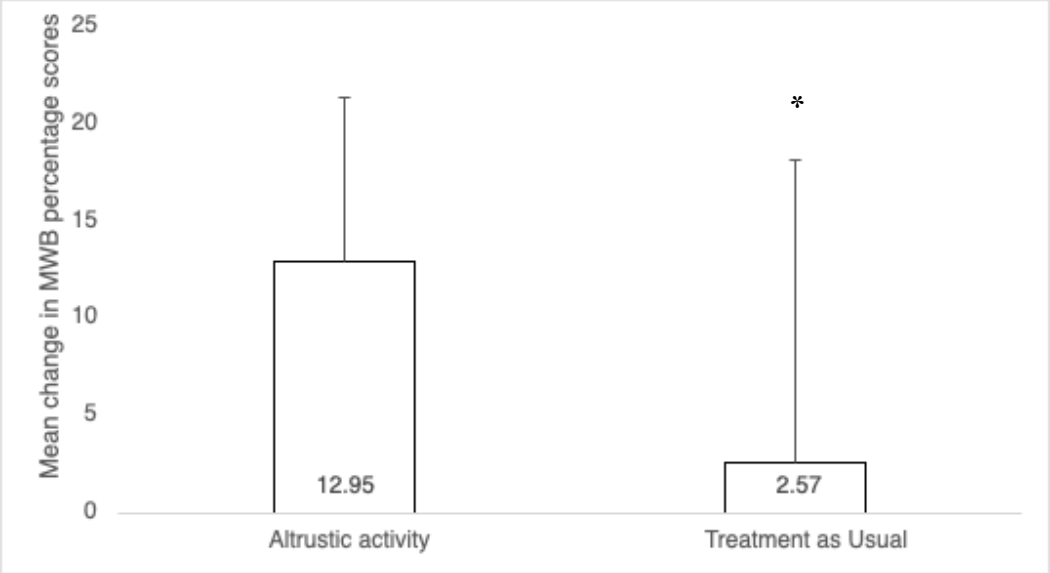

Figure 3 shows the mean change in MWB percentage scores between the altruistic activity group and the treatment as usual group. (*indicates a statistically significant difference: p = 0.012).

4.5.2 Psychological outcomes discussion

The psychological outcomes element of the study aimed to explore whether increasing the meaning and purpose of a gardening activity increased a NBI service user's perceived sense of meaning in life, purpose in life, mental wellbeing and self-esteem. The expectation for the

results of the altruistic activity was guided by (i) techniques discussed in occupational therapy (OT); that of engaging people in meaningful and purposeful occupation, and (ii) enhancing one's social identity as described in SIT; which, in this study's context was operationalized by experiencing being able to contribute to one's community. Building on past research from these two disciplines it was anticipated that improvements across all four measures (MWB, SE, PIL and MIL) would be observed. As anticipated, the paired samples t-tests revealed that overall, there were statistical improvements in all measures, with the largest effect sizes observed in MWB and PIL.

The current study utilised the OT tool of environmental adaptation with the manipulation being the transformation of routine gardening activities into an occupation that allowed the NBI service users to contribute to their community. This manipulation attempted to increase perceived meaning and purpose in life. Both meaning in life and purpose in life increased after the intervention which suggest the manipulation may have achieved the expected result. This notion is supported by similar findings in the literature. For instance, a qualitative meta-synthesis exploring the dimensions of personal meaning from engagement in occupations revealed that individuals experienced greater meaning when their occupation made a contribution to the community or to their family or friends (Roberts & Bannigan, 2018). The review included twenty articles and provides some support that the environmental adaptation used in the current study was responsible for the change in outcome measure scores. Likewise, the literature provides support that meaning in life and purpose in life have an influence on psychological wellbeing across different populations. For example, García-Alandete (2015) analysed the relationship between meaning in life and psychological wellbeing in a sample of 180 Spanish undergraduates with results showing a significant relationship between meaning in life and psychological wellbeing. Windsor et al. (2015)

explored sense of purpose in a sample of 1475 older adults and revealed that those who scored high on sense of purpose reported greater health and fewer depressive symptoms. Additionally, a meta-analysis investigating the association of purpose in life with depression and anxiety demonstrated that purpose in life significantly predicted lower levels of depression and anxiety (García-Alandete, 2015).

Comparing the MWB pre-post altruistic intervention mean scores to the population normative mean revealed that the mean MWB scores improved to the extent that there was no difference between the NBI service users mean score and the UK population normative mean score. This result provides support for the potential impact of enhancing meaning and purpose on a person's psychological wellbeing. However, the published data for the full version of the WEMWBS population normative mean dates from 2007 (Tennant et al., 2007). This data, therefore (at the time of the current study), is potentially 18 years old. Furthermore, it was collected prior to the Covid-19 pandemic, an event that was detrimental to both physical and psychological health, particularly on those with pre-existing mental and physical health issues (Alonzi et al., 2020) and continues to impact on people's health post pandemic (Chen et al., 2025). Taking this fact into account, todays WEMWBS mean population norm may be lower than the mean population norm collected in 2007. If this were the case, it is possible that the post altruistic intervention mean would surpass the population normative mean.

In addition to improvements in MWB, the findings revealed statistically greater improvements in MWB in the altruistic activity group compared to the treatment as usual group who were based at a different community garden operated by the same charity. This difference in results could be demonstrating the potential positive impact that increasing

meaning and purpose can have on a person's mental wellbeing as seen in the altruistic group mean percentage score. However, the results could also be demonstrating the deleterious effect on mental wellbeing when one lacks meaning and purpose (potentially being illustrated by the treatment as usual mean percentage score). For example, Frankl (1959) posited that a person's mental anguish over existential despair is not a mental disease and suggested that patients require help working through their existential crisis as opposed to medicalisation. Frankl termed this existential crisis 'noogenic neurosis' which describes the feeling of meaninglessness or a lack of life purpose. Crumbaugh & Maholick (1964) conducted an experimental study on existentialism and took a psychometric approach to Frankl's noogenic neuroris developing a 22-item Likert scale testing purpose in life. The results, consisting of 225 participants taken from two nonpatient and three patient samples, supported Frankl's noogenic hypothesis. The study suggested that having purpose in life is a characteristic of psychological wellbeing while a lack of meaning and purpose can be detrimental to wellbeing with some people becoming psychiatric patients because of a loss of purpose in life (Crumbaugh & Maholick, 1964). Failure to address one's existential crisis or lack of life meaning and purpose can affect wellbeing and lead to psychopathologies such as anxiety, depression, aggression, hopelessness, physical illness, and suicide. (Glaw et al., 2017).

An increase in self-esteem was also observed after the altruistic intervention. Self-esteem has been defined as a person's overall positive evaluation of the self (Gecas 1982; Rosenberg 1990; Rosenberg et al., 1995). It is suggested that self-esteem comprises two distinct dimensions, (i) competence, which pertains to the degree that people feel capable and successful, and (ii) worth, which pertains to the degree people feel they are of value (Cast & Burke, 2002). Self-esteem in the current study may have been enhanced through both of these dimensions since the floral displays created by the participants would have demonstrated a

level of competence and the ideological messages received from the beneficiaries provided concrete evidence that could have been experienced as being a person of value or worth.

Self-esteem can also be based on wider global judgments of self-worth (Rosenberg, 1965) or more localised evaluations of the self, such as appearance, education, fitness, etcetera (Woike & Baumgardner, 1993; Rosenberg et al., 1995). For some, self-esteem may be based around competencies, while for others it may be based on social judgements such as approval or disapproval received from others (Crocker & Wolfe, 2001). Again, the altruistic activity offered both these facets since on a global basis, the participants received the opportunity to identify as people who were able to provide for others, and at a localised level, participants could realise their artistic skills and creativity through flower arranging. It is considered that people have a trait self-esteem which is temporally stable, and a state self-esteem which fluctuates according to the environment and existential phenomena (Crocker & Wolfe, 2001). It is possible that the self-esteem baseline mean score within the current study represents the trait self-esteem score while the post intervention score is in response to a fluctuation in state self-esteem as caused by the exposure to the ideological messages received from the beneficiaries.

Self-esteem research has been driven through a belief that social problems are a result of low self-esteem and that raising self-esteem could reduce these problems (Crocker & Wolfe, 2001). This notion led to the self-esteem movement, often administered in schools, with the assumption that raising children's self-esteem would not only solve any social problems, but also increase academic achievement (Crocker & Wolfe, 2001). Critics of the self-esteem movement, however, have suggested that low self-esteem is a cause of social problems as opposed to a symptom of them (Smelser, 1989; Dawes, 1994; Baumeister, 1998). From this

stance, attempting to raise self-esteem in schoolchildren is futile and researchers suggest it would be more effective to justify or affirm a person's self-esteem through accomplishment (Dawes, 1994; Seligman, 1998; Baumeister, 1999). This framing of self-esteem is in support of SIT where identity is defined as part of one's self-image determined by their social categories (Tajfel & Turner, 1979). The self is comprised of multiple identities that reflect an individual's various social positions, and these can be either high or low-status (Cast & Burke, 2002). Individuals strive towards gaining a positive social identity which in turn increases self-worth and self-esteem (Trepte & Loy, 2017).

Accomplishment may well be a mechanism for increasing self-esteem, however, research exploring employment motivation demonstrates that employees will gain a stronger awareness of the prosocial impact of a purposeful job role if they encounter their beneficiaries (Grant et al, 2007). This contact provides observable concrete evidence of the meaningful outcomes of their work for real living people (Grant et al, 2007). Gaining a greater sense of prosocial impact results in employees focusing on their beneficiaries which increases their work productivity (Grant et al., 2007, Grant, 2008). Another effect of having an awareness of prosocial impact is that it is likely to affect employees' identities (Grant, 2007) as their work allows them to experience accomplishment, competence, and social worth (Ryan & Deci, 2000, 2001). Within the altruistic activity of the current study, participants would have experienced an occupation that had a purpose, felt a sense of accomplishment through seeing the results of the flower garden, and demonstrated to themselves a level of competence in arranging flower bouquets. Furthermore, on receiving the ideological messages from their beneficiaries, participants would have gained a greater sense of the prosocial impact their actions had on real people.

To further understand the impact of increasing meaning and purpose in NBIs, linear regression was carried out to explore whether changes in PIL and MIL predicted changes in MWB and SE. The results revealed that collectively increases in PIL and MIL predicted improvements in MWB and SE. However, when PIL and MIL were examined as independent predictors, only changes in PIL emerged as a significant predictor of changes in MWB. This could suggest that purpose in life is a stronger predictor of MWB or that the participants of the study did not perceive the activity as being very meaningful on a personal level. In relation to the latter observation, it is unlikely that all participants perceived the activity as personally meaningful despite recognising its purpose or usefulness in supporting an elderly population. This point is supported in the focus group results (section 4.5.7). According to Costin and Vignoles (2020) the concept which is suggested to have the greatest effect on perceived meaning in life is 'mattering' or feeling that one's life matters. Despite purpose in life being a contributing factor to meaning in life (King & Hicks, 2021), the altruistic activity was perhaps too short lived to have had a large impact on a person's sense of mattering (a point revealed in the focus group discussions). This is one factor that could explain why MIL increased, but not to the same extent as PIL.

The statistical improvements observed in all measures along with the difference in MWB scores between the two groups demonstrates the potential impact of incorporating existing theories from SIT, i.e., enhancing one's identity and social status, and OT models such as the MOHO into NBIs. Furthermore, the results from the quantitative analyses of psychological outcomes provide further evidence that mental health interventions should consider the role that meaning, and purpose has on psychological wellbeing and therefore should aim to address and enhance a person's existential wellbeing. Understanding how meaning and purpose in life contributes to depression and anxiety for instance, could help to inform

current conceptualizations of these disorders and improve treatment outcomes (Boreham & Schutte, 2023). The altruistic element introduced in this study through the environmental adaptation has been suggested to be particularly influential on outcomes of wellbeing. Xi et al. (2017) for instance, posit that altruistic attitudes and behaviours are especially important for enhancing wellbeing and should therefore be integrated into mental health interventions.

4.5.3 Psychological outcomes limitations

As with all research utilising psychometric measures for detecting changes in scores, the data is generated through self-report and could be affected by demand characteristics or participant bias where the participants alter their responses in accordance to perceived expectations (Villar, 2008; McCambridge et al., 2012). Furthermore, the measures used do not consider context or any recent life events, whether negative or positive, that could influence participant responses. A comparison was made between the change in MWB percentage scores of the altruistic activity group and the treatment as usual group. The results from this t-test must be interpreted with caution for several reasons. Firstly, two different versions of the WEMWBS were used in this study. The altruistic activity group completed the full 14-item scale version, and the treatment as usual group completed the short 7-item scale version, therefore, the non-altruistic group was not a robust control condition. Another factor affecting the comparison is that the two groups of participants were taken from different community gardens. Although operated by the same charity, the service users would have had different experiences from different garden locations, different staff, and different service user peer groups. Therefore, the social dynamics experienced across the six gardens would have been different. Additionally, the current study was underpowered which could affect the results observed with a consequence of reducing the chance of detecting a true

effect. Since this research is a pilot study utilizing a novel approach borrowed from the theory of other disciplines, it has set a course for future research to build on its foundations. Future research could therefore attempt to ascertain the effect of having meaning in life on a person's mental wellbeing by incorporating personally meaningful activities into NBIs on an individual basis. Larger population sizes would further enhance the research and improve on statistical power.

4.5.4 Physiological results

Twenty participants were recruited for the physiological measures portion of the study, however, one participant dropped out and four were excluded through insufficient data. A one-way repeated measures ANOVA examined the effect of receiving emotionally loaded stimuli on HRV with four stimulus conditions (i) no stimulus (ii) whole stimulus (iii) recipient stimulus, and (iv) care home stimulus. Repeated measures ANOVA revealed a statistically significant effect on MeanHR, [$F(1.38, 17.91) = 6.71$; $p = .012$] with a small effect size ($d = .341$). Bonferroni pairwise comparisons revealed a statistically significant difference in MeanHR between baseline and whole stimulus ($p = .029$) and baseline and recipient stimulus ($p = .014$). MeanHR values were highest at baseline (Figure 4). There were no statistically significant differences between any other stimulus comparisons ($p > .05$).

Figure 4. Mean heart rate.

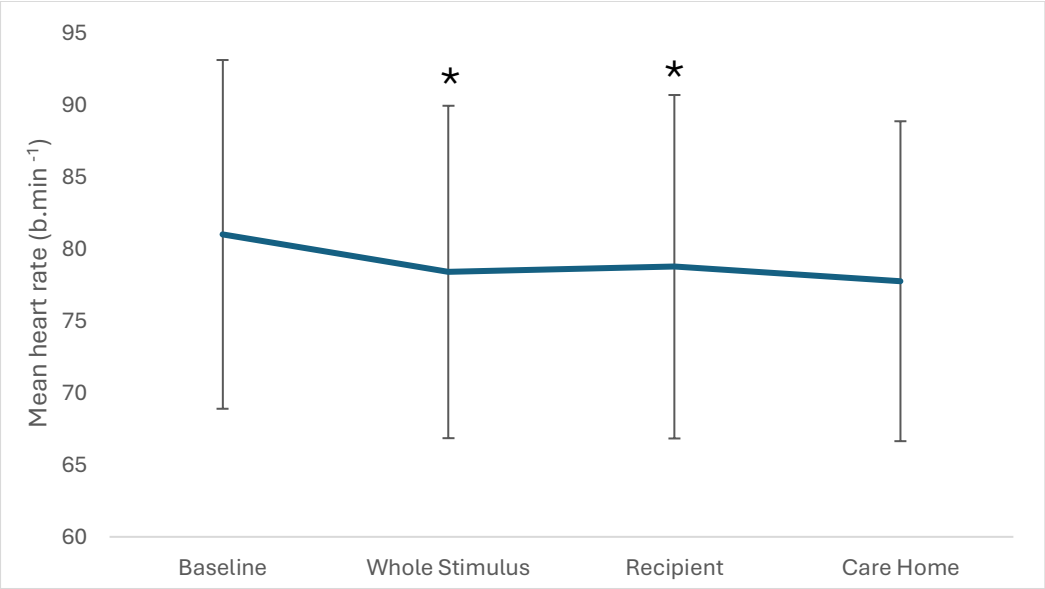

Figure 4 shows the mean heart rate showing a drop in heart rate from baseline to stimulus demonstrating the stimulus influenced cardiovascular activity. (*indicates a statistically significant difference from baseline).

A statistically significant impact of the stimulus was also observed on RMSSD [F(1.86, 24.13) = 8.46; p = .002], with a small effect size (d = .394). Bonferroni pairwise comparisons revealed a statistically significant difference in RMSSD between baseline and whole stimulus (p = .021), baseline and recipient stimulus (p = .021), and baseline and the care home stimulus (p = .041). There were no statistically significant differences between any other stimulus comparisons (p >.05). RMSSD values were lowest at baseline compared to all stimulus measurements (Figure 5).

Figure 5. RMSSD parameter.

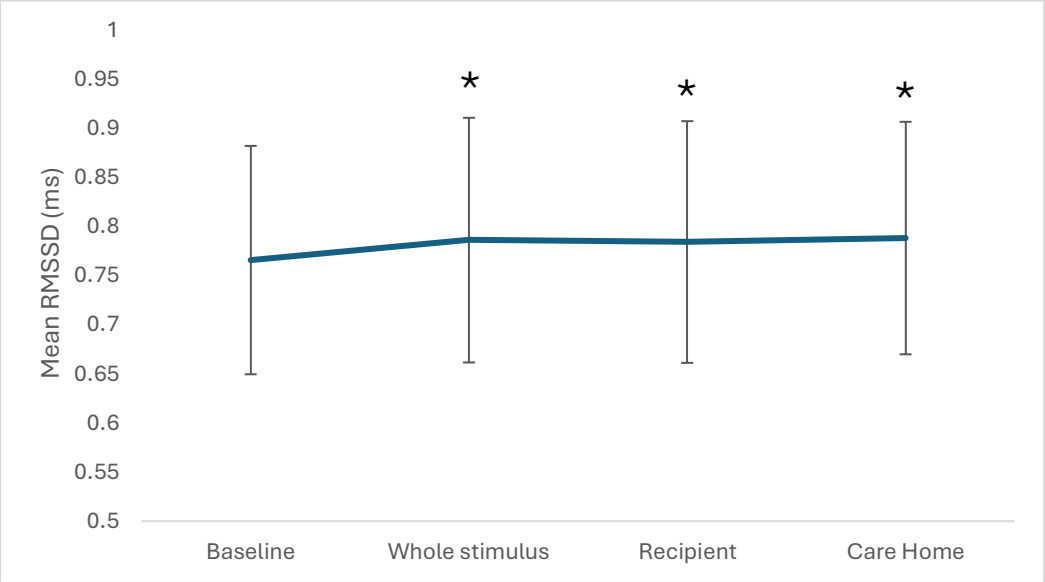

Figure 5 shows the RMSSD parameter showing a rise from baseline to stimulus demonstrating greater parasympathetic activity (rest and restore response) during the stimulus phase. (*indicates a statistically significant difference from baseline).

There was also a statistically significant effect of the stimulus on SDRR [F(1.81, 23.59) = 4.23; p = .03], with a small effect size (d = .245). However, none of the Bonferroni pairwise comparisons reached statistical significance. SDRR was highest at baseline compared to all stimulus measurements (Figure 6).

Figure 6. SDRR parameter.

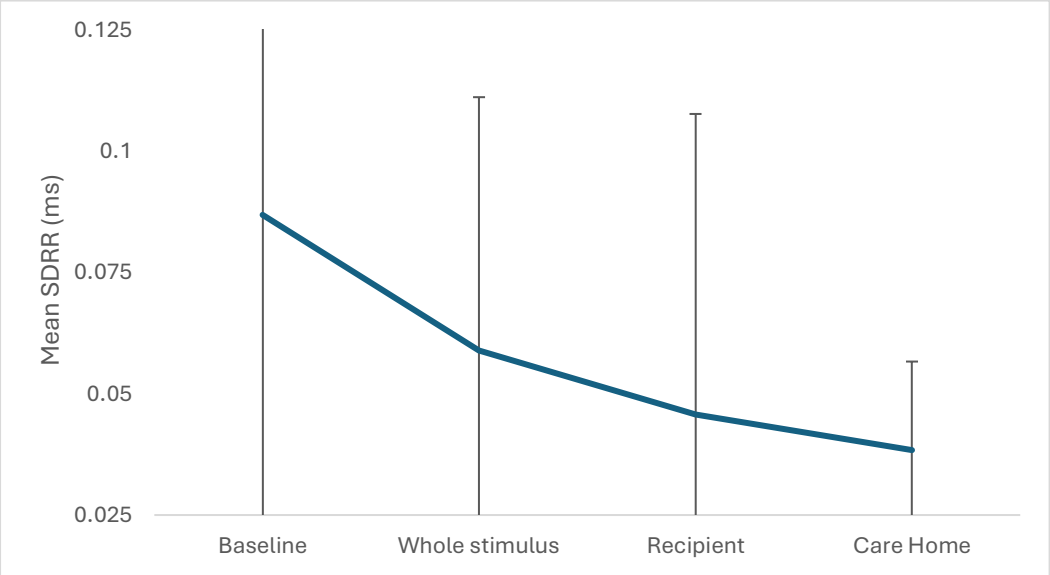

Figure 6 shows the SDRR parameter showing automatic nervous system activity. The high SDRR at baseline suggests participants may have been adjusting to stressors.

There were no statistical significant effects of the stimulus on LF/HF ratio mean [F(1.52, 19.72) = 1.73; p = .207], with a very small effect size (d = .117). LF/HF ratio mean was highest at baseline compared to the stimulus measurements (Figure 7).

Figure 7. LF/HF ratio mean parameter.

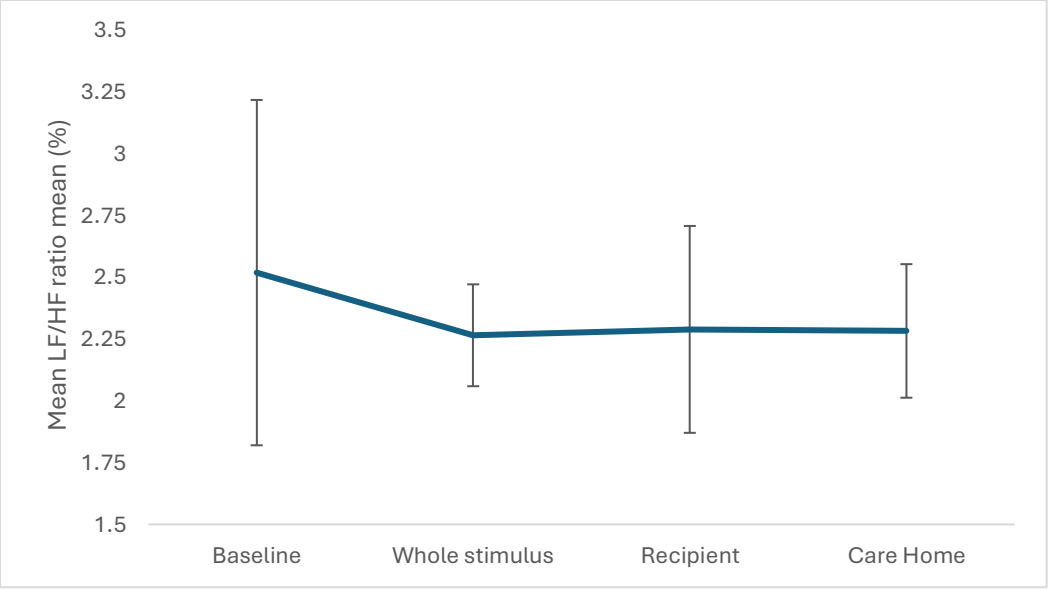

Figure 7 shows the LF/HF ratio mean parameter showing a fall in LF/HF ratio from baseline to stimulus demonstrating greater activity in the sympathetic nervous system (the 'fight-or-flight' response) during baseline phase.

4.5.5 Physiological discussion

The current study used HRV as a biomarker to explore emotional arousal in the participants during exposure to the ideological messages. Research suggests that altruistic behaviour can enhance positive affect, create changes to identity or self-concept, increase feelings of positive growth, happiness, optimism, life satisfaction, confidence, and increase internal locus of control (Andreoni, 1990; Otake et al., 2006; Kerr et al., 2014; Hui et al., 2020). HRV has been used in research to investigate the associations between the autonomic nervous system (ANS) and affective states (Gullett et al., 2023). For instance, a pilot study (Liu et al., 2020) investigated the differences of HRV parameters between two opposite emotions, happiness and sadness, to reveal the differences of ANS activity whilst under different emotional states. The results revealed that six HRV parameters indicated a significant difference between happiness and sadness. These were two time-domain parameters, Mean ($P = 0.028$), SDNN ($P = 0.002$), three frequency-domain parameters, LFn, HFn (normalised LF/HF) and LF/HF (all $P < 0.0001$), and one nonlinear parameter, Fuzzy Measure Entropy (FuzzyMEn), ($P = 0.047$). Liu et al. (2020) concluded that different emotional states could be detected using HRV and that happy and sad emotional states showed significant differences in HRV parameters.

In the current study, the stimulus had a statistically significant effect on MeanHR, RMSSD and SDRR. MeanHR, SDRR and LF/HF ratio mean were all highest at baseline. The higher

mean heart rate observed at baseline could potentially indicate a high stress level, which would perhaps be expected since the laboratory type set up and the wearing of the HRV sensor could have induced a level of anxiety felt by the participants. However, as the participants viewed the stimulus, the mean heart rate reduced demonstrating that the stimulus influenced cardiovascular activity. Explanations of the mechanisms of affect for this phenomenon are purely speculative, however, the drop-in cardiovascular activity could be due to the stimulus inducing a state of relaxation, possibly through positive affect such as experiencing oneself as a person of value, experiencing an increased level of self-esteem, or gaining an increased sense of MIL and/or PIL. This could be evidenced with embodiment theories which propose a reciprocal relationship between a person's emotional state and their bodily reactions (Scheer et al., 2021). For instance, depressed people have been shown to walk with decreased speed and arm swing compared to happy people (Michalak et al., 2009), and various studies have demonstrated how cortisol is lower in people with greater positive affect (Davydov et al., 2005; Hoppmann & Klumb, 2006; Jacobs et al., 2007). A different interpretation for heart rate reducing during stimulus exposure could be that the stimulus provided a distraction from anxiety, rumination (or other negative affect states). It is plausible that the activity of receiving the ideological messages brought the participants into the present moment whereby mirroring the Flow effect as described by Csikszentmihalyi (discussed in chapter three).

The LF/HF ratio mean parameter was also highest at baseline. A high LF/HF ratio is indicative of greater activity in the sympathetic nervous system (SNS), associated with stress and the 'fight-or-flight' response. The high LF/HF ratio mean parameter observed at baseline supports the pattern seen in the mean heart rate data, that participants were possibly stressed during baseline. The reduction observed in the LF/HF ratio mean parameter during exposure

to the stimulus indicates that there was a greater influence of the parasympathetic nervous system (PNS), which is associated with the ‘rest and digest’ or ‘rest and recovery’ response. The results of the LF/HF ratio parameter provider further evidence that the stimulus impacted the participants physiology and possibly induced positive affect.

The RMSSD HRV parameter demonstrated an opposite effect to MeanHR, SDRR and LF/HF and was lowest at baseline. This result is not contradictory however, rather it further supports the emerging baseline-stimulus pattern since lower parasympathetic (PNS) activity demonstrates that the PNS is underactive. Research exploring negative affect states suggests an association with a reduction in PNS activity (Gullett et al., 2023). PNS is responsible for regulating rest and recovery and a reduction in activity means that the parasympathetic system's calming effects are reduced. This could potentially impact on mental wellbeing. During the stimulus phase, RMSSD measures were higher suggesting greater parasympathetic activity and therefore, greater rest and recovery.

Finally, the SDRR parameter, also higher at baseline, is harder to interpret. SDRR provides an insight to the activity of the ANS with a higher SDRR suggesting a greater ability to adjust to stressors. The high SDRR at baseline could have been indicative of participants adjusting to the stress induced by the unfamiliar laboratory-style environment. Additionally, as participants were expectant of receiving their thank you messages following the baseline, perhaps this expectation helped participants to be more resilient to any stress or anxiety experienced during the baseline measure. Resilience concerns the phenomenon of maintaining, regaining or increasing one’s mental health following a stressor, i.e., a challenge, hardship, or negative experience (Egan et al., 2024). Research suggests that

positive affect can act as a resilience resource with higher levels of positive affect protecting individuals from the impact of stress, depression and trauma symptoms (Egan et al., 2024). Furthermore, altruistic behaviour has also been shown to help foster resilience (Shillington et al., 2024).

An alternative pathway explaining the observed HRV results is that participating in altruistic behaviour can alter a person's physical feelings. For example, Hu et al. (2016) demonstrated how altruistic behaviours could increase the performer's warmth perception of the ambient environment. Hu et al. (2016) found an immediate effect in participants' perceived warmth of the ambient environment after performing altruistic behaviours. Although the participants in the current study had carried out their altruistic activity minimum one week prior to the HRV measures, exposure to the ideological messages may have evoked their feelings experienced during the altruistic activity. Furthermore, the ideological messages exposure would have been the first time the participants would have come face-to-face (albeit virtually) with their recipients possibly inducing the warmth perception as described by Hu et al. (2016). The assessment of one's perceived warmth of the ambient environment (or thermal comfort), can be accurately estimated based on HRV. (Nkurikiyeyezu et al. (2018) observed that HRV is distinctively different depending on the thermal environment and that it is possible to reliably predict a person's thermal state, for instance cold or hot, with up to a 93.7% accuracy. Research exploring HRV at different thermal comfort levels revealed that LF/HF at discomfort level were significantly higher than at comfort level, in other words LF/HF was higher when participants felt cold, and lower when participants felt warm. (Liu et al., 2008). The LF/HF ratio in the current study was higher at baseline and lower during the stimulus suggesting that participants warmth perception of the ambient environment could have been affected i.e., felt cold during baseline and felt warmer during stimulus. A phenomenon

brought about through receiving concrete evidence of the positive outcomes of their altruistic behaviour. Additionally, other research has suggested that social-related concepts raised warmth perception (Szymkow et al., 2013; IJzerman et al., 2015a) which has been demonstrated with evidence from neuroscientific studies (Kang et al., 2011). It is also possible in the current study that participants may have felt a social connection to their recipients whereby raising warmth perception further and influencing HRV results. Warmth perception of the ambient environment links the psychological and physical worlds (Hu et al., 2016), specifically, individuals could perceive their environment as more secure and predictable (IJzerman et al., 2015b). The evidence presented in the current study goes one step further and suggests that warmth perception links psychological, physical and physiological worlds.

4.5.6 Physiological limitations

The autonomic nervous system has been widely studied in the context of emotion and, advances in technology have made measuring HRV easily accessible (Quintana & Heathers, 2014). However, significant limitations persist due to the complicated nature of HRV (Quintana & Heathers, 2014) and a level of uncertainty surrounding what HRV is measuring (Billman, 2011). For instance, environmental factors can affect HRV such as the time of day (Massin et al., 2000; van Eekelen et al., 2004) and air quality, which can have an impact on the pulmonary and cardiovascular systems and influence HRV data (Morita et al., 2007; Park, Tsunetsugu et al., 2008; Tsunetsugu et al., 2010). Important participant variables also persist such as gender, with men on average reported as having a higher HRV than women (Behbahani et al., 2018), and age, which affects time-domain measurements as age declines

(Nunan et al., 2010; Abhishekh et al., 2013; Almeida-Santos et al., 2016). Health status is another factor with both mental and physical aspects of health influencing HRV (Rajendra Acharya et al., 2006; Shaffer & Ginsberg, 2017), along with medications such as cardioactive medication use and some antidepressants (Kemp et al., 2010). All participants of the current study had a mental health diagnosis, and some were in addiction recovery, however, particulars of mental ill-health and any subsequent prescriptions were all unknown factors. Additionally, breathing patterns and blood pressure regulation affect HRV leading to uncertainty as to what is being measured, i.e., the result of a stimulus or changes to breathing (Quintana & Heathers, 2014).

A further complication is that of individual participant behaviours and lifestyle. For example, nicotine (Hayano et al., 1990; Barutcu et al., 2005; Sjoberg & Saint, 2011), caffeine (Sondermeijer et al., 2002) and alcohol use (Quintana et al., 2013a, 2013b) all influence HRV. A person's physical activity levels (Britton et al., 2007; Soares-Miranda et al., 2014), quality of sleep (Glos et al., 2014), and ability to relax (Kumpulainen et al., 2025) also affect HRV along with eating behaviour such as missing a meal (Pivik et al., 2006), and the digestion of food and water consumption (Lu et al., 1999; Routledge et al., 2002).

Finally, technical variables need to be considered. For instance, the recording period length, which in the current study was short-term HRV. The 24-hour recordings are preferred since they achieve greater predictive power than short-term measurements (Nolan et al., 1998; Kleiger et al., 2005) and are considered the gold standard, especially for clinical assessment (Shaffer et al., 2014). Noise or artifacts within the ECG signal can distort time and frequency domain measurements (Peltola, 2012). Artifact removal can be executed through using an

artifact-free epoch or by editing the affected RR intervals manually (Shaffer & Combatalade, 2013). In the current study, artifact removal was performed manually through a visual inspection of the raw data and applying a low-pass filter with the cut-off frequency of 30Hz. A different artifact removal method could have produced different results. An important factor impacting reliability in HRV research is the sample size required to detect a significant change (Žunkovič et al., 2023). The population recruited for the physiological measures portion of the current study reached 20 which is a small sample size and therefore would have been underpowered. This population was further reduced with one participant dropping out through a clash in their timetable, and four participants were rejected through insufficient or non-existent data suggesting HRV sensor errors.

4.5.7 Focus group results

Four focus groups were conducted with a total of 13 participants: three groups of three and one group of four. The results describe the experiences of seven of the participants with the other six participants having taken a more passive approach to the focus groups and therefore did not contribute enough descriptive experiential data. Following the stages of IPA described by Smith et al. (2009), eight group experiential themes were identified which can be viewed in the table of group experiential themes in appendix L.

Theme 1: The experience of giving and making gifts

1a. General thoughts and feelings towards giving gifts

As an ice-breaker task, the participants were asked to discuss how they felt about giving and receiving gifts. Everyone agreed they enjoyed giving gifts to people, with all but one participant preferring to receive a present over giving a present. Giving gifts was considered a meaningful activity by all. The giving of gifts generated similar experiences among the participants and was associated with a closeness to others, love, a personal experience, and a thoughtful process. Felicia and Penelope viewed giving presents as an opportunity to make something personal by hand whereby adding an extra layer of meaning.

> *"I do prefer giving gifts because I always put a lot of thought, and I like to make gifts"* (Felicia)

> *"I prefer to give because I feel I have everything I need already…I do enjoy, or again, even making presents for people"* (Penelope)

Daniel discussed how giving a gift can be a complicated process if you are thinking about what would make the perfect gift or what the other person would really enjoy receiving, however, the positive experience outweighs the complications.

> *"…probably do prefer giving gifts because it's sort of more personal, someone you love and know well…a thoughtful thing…could be more complicated if you're thinking about it a lot but it's more meaningful"* (Daniel)

Giving a gift is also experienced through being rewarded with positive emotions. Although Bridgette only describes giving as 'always nice to do', Gerald and Sidney go further and relate how they are made happier through giving to others.

> *"You cheer yourself up"* (Gerald)

> *"I think it's the only thing that gives you a bit of emotion, you know, giving something to someone…well, it's because I don't feel sad and that anymore. And happy and that, something that can make yourself feel happy giving like"* (Sidney)

1b. Feelings towards having made flower bouquets for the elderly

The thoughts and feelings generated from making a gift for someone unknown to the participants was not experienced with any less emotion than when discussing giving presents to friends and loved ones in the ice-breaker task. Daniel felt a sense of excitement of what can be achieved through giving a present, the 'potential' of who will be receiving it and what effect the gift could have on that person. This 'potential' allows Daniel to experience feeling good through imagining positive scenarios and the outcome of gifting to others.

> *"…because obviously it's going somewhere…there's that potential of where it's going to…that part, the involvement, yeah I got directly involved with it"* (Daniel)

Felicia described the investment of time and effort, how the gift had been nurtured over time as you maintain the health of the plants and wait for the flowers to grow. Further time is then invested as you hand make the flower bouquets and write a personalised greeting card. A sense of connection to the recipient is felt through a very personal process and the thought that the recipient will be 'incredibly happy' to receive the gift. For Felicia, Penelope and Walter, the 'potential' described by Daniel has been pushed wide open and the imaginary outcome has been replaced with a definite sense of having contributed to the wellbeing of their elderly recipients.

> *"The whole effort of time put into it so you think god, you've made all these people incredibly happy…reminded me that just a little relatively small gesture can make a massive difference…you give something that's homemade or you've grown…it makes a big difference doesn't it, it's very personal"* (Felicia)

> *"I enjoyed doing that, to give to someone to, make things happier, and to feel less lonely and less isolated"* (Penelope)

> *"I quite enjoyed making the bunches of flowers and thinking this is going to go to someone and they're going to enjoy it"* (Walter)

The knowledge that the flowers were being grown and cut specifically for someone described as elderly and living alone provided the incentive and motivation to carry out the activity of creating flower bouquets to the best of their ability. It was deemed unacceptable to just cut flowers haphazardly and participants took a keen interest in how others had arranged and created their bouquets. A slight competitive element crept in as participants saw each other's creation.

> *"We all thought about it…Yeah, cos we all wanted to make them look nice, we didn't just all stick them in a jar and go that'll do…knowing that you're doing it for someone. Yeah, cos when we were making them, we wanted to make them look nice"* (Sidney)

When questioned on whether the activity would have generated the same level of emotions if the flowers were not being gifted, Bridgette replied, 'Probably not' and Gerald added 'no, no, not by a long way'.

Theme 2. Experiencing the altruistic activity

2a. Altruistic activity benefited psychological wellbeing

The participants experienced an array of psychological benefits, one of which was situated around purpose. Felicia describes her life as lacking purpose and stated that she would prefer to carry out activities that provided for others over general gardening activities. Through continued exposure to altruistic activities Felicia believes she would gain a sense of life purpose. Likewise, Bridgette found the purpose element behind the gardening as a motivational driver and contributor to wellbeing. Although undecided and conflicted in her thinking about being someone of value to her community, the altruistic activity has provided further evidence that she is someone who can contribute to society.

> *"Yeah* [altruistic activity was more meaningful], *because I think once you knew there was a purpose to it and the reason, taking them to elderly people…I suppose I am* [of value] *because I'm coming here doing bits and pieces and then I do actually volunteer at the charity shop so not necessarily just garden related"* (Bridgette)

> *"I would prefer to do it for someone, you know, the flowers …I would say I haven't got a purpose so that would be a purpose"* (Felicia)

For Penelope and Walter, the altruistic activity provided a shift in identity or a reassurance that they are needed and of value. Penelope described how she was physically unable and therefore limited in her capabilities to contribute to society which left her in a state of frustration and torment. She describes the altruistic activity as giving her a boost and altering

her thinking to a more positive viewpoint that she is able to contribute. Likewise, Walter discusses how a lack of employment has left a void that leaves him feeling 'a bit pointless'. However, through the altruistic activity, Walter has become more aware that his everyday interactions in his local community are making a valuable contribution which, like Penelope, has shifted his point of view.

> *"there's a lot of physical things I can't do for people so sometimes I do get a bit frustrated oh I can't do this I can't do that I can't get around the gardens when it's wet…I've come to accept that there are things here that I won't be able to do and that so, it's a bit of acceptance…every now and again I get this nagging thinking I wish I could do this or I wish I could do that…It's given me that boost to, erm, because sometimes if you're having a bad day and that, I can suddenly think, well I can contribute to society, I can do this and I can do that"* (Penelope)

> *"I'd say it's had a positive effect on my mental health and I think it's this thing of being of value to society…feeling of being a bit of er, not waste of space, is wrong way of putting it but being, not as valuable as I had been, now it feels less like, less strong a feeling because I'm thinking well, yeah, not only was I a help to those, the old lady that received that particular bunch of flowers, but I'm a help to, oh yeah there's* [name of friend] *there's this lady and this lady and there's the people at Trust Links…I think it's pointed out to me the fact that doing good things to help other people is a valuable contribution to society…being a help to other people, so it's allowed me to shift my point of view from well there's a little feeling of I've not got a job anymore and I'm a bit pointless, to, oh you're not pointless at all"* (Walter)

Gerald and Daniel discuss how the altruistic activity has had an impact on their mental wellbeing through making them feel more positive about life and creating a sense of pure enjoyment. Daniel appears to be describing two levels of enjoyment, Enjoying the activity and then experiencing 'pure enjoyment' on top of this from the gifting. Two forms of happiness are being described here, hedonic, where happiness is experienced through an activity that is personally enjoyed, and eudaimonic happiness, which is a happiness acquired

through the pleasure of doing something for someone else. Daniel also gained a sense of purpose as he says he can see the value in where the flowers are going and for him the altruistic activity became his number one favourite job in the garden.

> *"*[Felt] *Positive. Yeah. Cos it was such a damn good job"* (Gerald)

> *"I'm seeing the point, of where it's going…and giving them to somebody…I'd be quite excited about that…if that job was on the board, I'd probably pay attention to it each week…so it's that potential excitement and possibility of what's happening in the garden…quite possibly my number one job, it probably would be that"* (Daniel)

> *"I enjoyed that, to have that pure enjoyment as well, that's to do something like that was good"* (Daniel)

Daniel made a profound statement where he felt the altruistic activity created a symbiotic relationship. The elderly people were being given something nice to help them feel less isolated which in turn generated a sense of accomplishment and wellbeing for the participants.

> *"I think it helps us as much as it helps them"* (Daniel)

2b. Indifference to the altruistic activity

There was some contradiction described to that identified under theme 2a. In particular, Bridgette discussed that she wasn't aware of any effect on her wellbeing, and the altruistic

activity was ‘just something you were doing’. This experience may have been felt before she realised the greater purpose of the activity. This notion was certainly the case for Walter until he viewed the slideshow of thank you messages from the recipients.

> *“In terms of its meaningfulness, I didn’t really feel the meaningfulness until I’d seen the video”* (Walter)

Felicia felt that she had not contributed enough and made a point of comparing herself to the level of effort the researcher had put in.

> *“You were showing us what to do, and the, you made the labels mostly didn’t you, and then you delivered, you found the people and you delivered them”* (Felicia)

Sidney described a unique experience where he disclosed that his medication leaves him feeling emotionless and like a ‘robot’.

> *“I don’t feel like any of this any way no matter what I do so. I am a robot, that’s what I feel like. I think it’s just the drugs they give you, they just make you emotionless”* (Sidney)

Despite Sidney describing how the side effects of his medication eliminate his capability to feel emotions, he remains conflicted in his experience of whether he did or didn’t feel any emotional or wellbeing benefit.

> *"It probably did* [positively impact wellbeing]*, yeah, but I don't take any notice of it sort of thing"* (Sidney)

However, when asked whether he thought continuing the altruistic activity would be beneficial to his wellbeing Sidney replied, 'I reckon it would yeah' and continued to state that 'it was nice', and he 'liked it', it was just that he was not having a good day.

Theme 3. The creative process

The opportunity to be involved in a creative pursuit added 'another layer', not just to the aim of increasing meaning and purpose, but to the experience of attending the community garden in general. Participants expressed the level of effort they dedicated to the process of creating a nice bouquet which commanded a high level of focus and attention. Bridgette's account appears to suggest a relief from having a focus, a construct that perhaps helps her manage her mental health.

> *"I think it gave us something to focus on because obviously we were going around choosing the colours. And it was positive in a way, and like, ooh, I'll have that colour and I'll have that colour, and I'll have that and I'll have that* [laughs]*"* (Bridgette)

The thought that went into the creation was apparent and demonstrated how the altruistic activity captured the participants' imagination and promoted autonomy through creative expression and experimentation.

> *"we had chosen them and they were grown and everything it was like another layer…putting the effort in, you've thought about it you've made it by hand"* (Felicia)

> *"I took the time to…all the thought that went into picking them…for that thought process to, to give them something like that"* (Daniel)

> *"…although I didn't plant any of the flowers, I helped pick them where I could and I enjoyed putting the bunches of flowers together and trying to do some things like purples and whites"* (Penelope)

There was the recognition that the flower bouquets looked very impressive which created a sense of pride and satisfaction. For Sidney, who demonstrated a natural ability for flower arranging, being singled out, noticed and praised left him feeling awkward and he was aware that other participants were attempting to copy his arrangements.

> *"Very professional…I would be very proud of what I was giving to someone"* (Felicia)

> *"It started annoying more when people kept saying that, you should be a florist… Yeah, certain people snatched on and started doing it* [copying his arrangement]*"* (Sidney)

Theme 4. Exposure to ideological messages

4a. Ideological messages boosts meaningfulness, life purpose and wellbeing

Exposure to the ideological messages were, for some, the crucial point that provided evidence of what their efforts and thoughtfulness accomplished. Whether the participant felt completely immersed in the activity such as Daniel, or whether the participant felt detached from it such as Walter, witnessing the ideological messages provided a sense of having contributed and having been a part of something positive. After exposure to the ideological messages, Walter describes his feelings as having a sense of 'ownership' over the activity and Daniel gained a sense of getting back from life what you give.

> *"I very much enjoyed seeing the videos afterwards, that really kind of brought it home to me…I didn't feel particularly, erm, engaged with how the plants were doing…once they started to come into flower I thought, oh they're looking good…where I'd prepared the ground or sowed the seeds, I then have a sense of ownership…I didn't actually get that feeling until the, the video clips"* (Walter*)*

> *"What you give back will come back to you in terms of, hearing back what the messages said…knowing what you can do, hear that it can go further… to see that physically through the videos and that is quite, it helps me big time"* (Daniel)

The evidence, or 'end result' was important to Penelope and Bridgette too. Penelope describes the whole community garden project as meaningful however, the meaningfulness of her attendance at the garden was enhanced because of the ideological messages. Bridgette enjoyed learning something about the recipients, their 'history', and there is a sense that Bridgette gained a closeness or a connection to the recipients that may have contributed towards the increased self-esteem she declared feeling.

> *"I find the whole project here is meaningful, but then there was this extra bit of meaningfulness on top…you actually saw the end result of giving those flowers,*

> *so it was a bit more meaningful because you saw those videos of the flowers"* (Penelope)

> *"Yeah, it did* [increase self-esteem]*, seeing it, obviously the wider picture…actually seeing that, for those few moments…yeah, and knowing some of the history"* (Bridgette)

Felicia, Gerald and Sidney also stated that watching the ideological messages affected their wellbeing with Gerald stating it made a 'big difference'. Felicia said the messages offered her a sense of life purpose while Sidney; despite declaring he cannot feel any emotions due to his medication admitted that it did have a positive impact on his wellbeing.

> *"…it was lovely because each one was a really happy positive message…after watching the video, then erm, it did"* [enhance life purpose] (Felicia)

> *"Yeah, I did actually* [experience an increase in wellbeing]*, yeah, not my own one* [personal recipient]*, but just seeing the whole thing"* (Sidney)

4b. Ideological messages promote reflections on life

Listening to the messages prompted the participants to reflect on the lives of the elderly recipients along with aspects in their own lives, sometimes imagining a similar future outcome as those elderly people were experiencing. For instance, Daniel reflected on how seeing the elderly people made him concerned that he will one day be old and physically limited which he described as a 'nightmare' situation. Felicia felt empathy towards the recipients and thought some appeared lonely. Hearing that some recipients hadn't had a visit from a son or daughter in a long while triggered Felicia to become annoyed and she suggests

that visiting a parent was a duty. Here Felicia changes her use of language from ‘could’ visit to ‘should’ visit. She goes on to imagine that this could happen to her one day.

> *“I felt very sad for them…they need that* [being visited]*, we can’t do it, but they need, they could do with something like that* [a gift of flowers] *every other week”* (Felicia)

> *“…my children are, they’ve got busy lives* [repeating what she heard in a message]*…if they really, they could make time, they should make time, if they’re really bothered…I don’t know whether my children will, you know, as much as I hope they will, but they may feel, oh god I’ve got to go and see mum”* (Felicia)

Not all reflections on life were concentrated on negative aspects, Walter, Penelope and Daniel all expressed a similar experience of becoming more aware of how they can contribute to the welfare of others and how this contribution is of value to individuals and society as a whole. The terminology used by the three participants differ; ‘conscientiousness’, ‘reinforced’ and ‘pointed out’, however, the essence behind the sentiments remains the same.

> *“…at the time we were doing it, I, mostly I was in a really good head space…it might of furthered my erm, conscientiousness of, I guess, of how I support myself and how other people can be better sort of, looked out for”* (Daniel)

> *“It has reinforced that I can provide for others through the Trust Links project”* (Penelope)

> *“I think it’s pointed out to me the fact that doing good things to help other people is a valuable contribution to society”* (Walter)

4c. Imagining recipient's reactions

Exposure to the ideological messages prompted further cognitions based on imagining how the recipients of the bouquets must have felt. These thoughts were largely positive and evolved around a belief that the recipients would have been delighted and made happier. This type of thinking may have also contributed to the feelings of wellbeing described by the participants.

> *"There was a lot of warmth and appreciation from, you know…which is amazing… to have that gift, that must have meant a huge amount to them, to have that thought and connection to other people"* (Daniel)

> *"…seeing their faces and that you think oh yeah, you could see how pleased they were, and the smiles"* (Bridgette)

Felicia did experience similar positive thoughts about the recipients and even imagined how the gifts would last longer than the life of the flowers through providing the recipient with something to tell friends and family about. Despite this, Felicia demonstrated aspects of self-stigma around mental health and perceived that the recipients were belittling them for having made the bouquets, as if it was all people with mental health issues could accomplish in life.

> *"They'd still be telling family members or a friend or something, you know, this is where the flowers are from, I thought, no, it was lovely, it was really lovely…"* (Felicia)

> *"I felt as if there was an element of pity…probably thought we were, you know when you say mental health issues you don't know how bad we are…we're not*

> *capable of doing an awful lot, they said well done…perhaps I'm thinking about it too deeply"* (Felicia)

Theme 5. Seeing is believing

5a. Evidence required to motivate action

Participants lacked motivation, particularly at the early stages of the project with the clearing of bramble and weeds, preparing the flower beds and seed sowing. Participants discussed the need for a large amount of evidence (i.e., of what the flower garden will look like and that the flowers were going to elderly people) prior to the start, and throughout the duration of the project. The lack of motivation and need for additional stimulus to reassure the participants that the activity was worth doing may be indicative of the state of the participants' mental health. Participants discussed needing to see evidence in the form of photographs, both of what the flowers would look like when fully grown and of some recipients looking happy with their gifts.

> *"…should do things slightly different next time, as you say after the first few have been, have some stills or video explaining how happy they are to receive the flowers and stuff"* (Penelope)

> *"…if you were doing the same thing again another time…showing a much shorter portion of the slide show, this is what we're going to be doing…show two or three of those people or whatever…you did tell us about, what the project was going to be but hearing it once without seeing anything is not quite the same as hearing it again and again and again …I didn't think I disbelieved it was happening, more thinking, I wonder how this will work"* (Walter)

It was also suggested that the participants would have benefited from the researcher being more encouraging by using enthusiastic language, and periodically throughout the duration of the project reiterating what they were doing the flower garden for.

> *"I suppose what would have been really nice is when we were sowing the seeds…maybe to show us pictures… we need to be reminded of what they look like…this is what they're going to look like and wow they're going to be amazing"* (Felicia)

When Gerald was asked what motivated him to participate in the altruistic activity he replied, 'cos it worked'. Although this comment is situated in hindsight and Gerald had contributed to all aspects of the project, it does suggest the importance and need for evidence as a driver towards motivation.

5b. Disbelief and doubt in the project

There was some level of disbelief and doubt that manifested from different aspects of the project. The majority of doubt came from the horticultural side of things and the scale of the task; the clearing of bramble and growing flowers worthy enough of creating bouquets.

> *"We'll we didn't* [believe the project was viable]*, cos I just thought, you'd get rid of it* [the weeds]*, but how much bramble and crap that is there would just take over again…I thought it would just take over the flowers as well"* (Sidney)

> *"I just imagined picking little flowers, but they were huge, and big, you know, so, it was hard to imagine"* (Felicia)

Despite being personally involved in sowing seeds, Gerald was surprised that the entire flower garden was the result of the seed sowing.

> *"Is that where they all came from? The little seedlings. Blimy, I didn't know that"* (Gerald)

Finally, there was some doubt experienced over the distribution of the flowers to the recipients. Felicia imagined that only a few people were going to receive flowers. Daniel, a keen gardener, did not express any doubt towards the horticultural aspect of the project, however, he did admit to needing to see the evidence that the flowers had indeed been delivered to the elderly otherwise he would have had some doubts about whether the gifting event ever happened at all.

> *"Or they* [the participants] *thought that maybe only one or two people were going to receive flowers"* (Felicia)

> *"…to actually see it is quite important to me because sometimes I disbelieve a little bit"* (Daniel)

Theme 6. Longer, closer and more personal

6a. A desire to have gotten closer to the recipients

Three of the participants, Felicia, Sidney, and Bridgette, all expressed a desire to have gotten closer to the recipients. Sidney would have liked to have delivered the bouquets personally to the recipients, an act that he described as inducing more emotion. Sidney portrays a sense of having missed out through the lack of this opportunity, such as seeing their smiles as he hands over the gifts. This idea mirrors the delight found in the act of giving as expressed by Felicia early on in the focus group where she states, 'I like to see their reaction'. For Sidney, social distancing, i.e., viewing the recipients over a screen, and the lapse of time between creating the bouquets and receiving the messages had rendered the event less meaningful.

> *"If I see them in front of me smiling and that, I'd probably feel better, if I went into the room and they all went, why obviously you'd get more emotion"* (Sidney)

> *"If I'd gave it to them in front of me it probably would have…over a screen, cos it's, like, it's a week later, two weeks later, I didn't really* [pause]*"* (Sidney)

A sense of detachment was also experienced by Felicia and Bridgette from the researcher having recorded the recipients' thank you messages in his own voice. Both Felicia and Bridgette understood the complications of asking elderly people to record their own voices, nonetheless, hearing the messages read out in the researcher's voice reduced the emotional impact and again created social distancing.

> *"It's not so much us giving them but if…I appreciate why you did the voice over…but if they'd have spoken them"* (Bridgette)

> *"what would have made quite a big difference for me is to have heard a recording of their voice…I think I would have been more emotional"* (Felicia)

6b. Increased exposure to altruism would increase wellbeing

The dose of altruism experienced was recognised as small by the participants, although, despite this, an increase to wellbeing had been reported such as an increase in self-esteem and an increased sense of life purpose. Purpose was discussed as being linked to the amount of altruism experienced, and, for Walter, there was a suggestion that the amount of purpose felt might come down to how much life purpose a person already perceives they have.

> *"I think for me purpose would need to be something that would be repeated and ongoing…this is like a little nugget of, of giving some pleasure to somebody else…it might depend on how much purpose you currently felt like you have in your life you know"* (Walter)

Walter also lamented on how nice it would be if the participants of Trust Links were able to leave behind a lasting legacy of having contributed to the wellbeing of other people. This idea links back to Walter's other feeling of being valueless and if the altruism was to become an ongoing activity, then a sense of achievement or life accomplishment could replace the lack of value felt.

> *"That would be quite nice wouldn't it, say for example there's a legacy of that"* (Walter)

Felicia agrees that she would need to experience the altruistic activity as a continuing task which, for her, would provide a sense of responsibility whereby creating a stronger sense of life purpose.

> *"I think if it continued…then you would, I would have more purpose…if I didn't do it, then I would feel as if I'd let someone down, but I think if it was repeated then I would…I would feel needed, yeah"* (Felicia)

Even Sidney, who sticks fairly rigidly to the narrative that he is incapable of feeling emotions answered 'I reckon it would, yeah' in response to whether repeating the altruism would benefit his wellbeing.

Theme 7. Personally meaningful population

Participants described how different populations may be more meaningful to them as recipients of their altruistic activities. This was expressed when there was a personal link to the suggested recipient population. Bridgette, Felicia and Daniel all spoke about the sort of population they would like to help, although, with the exception of Daniel, it is unknown whether there is a personal connection. During the altruistic activity Bridgette showed a slight disinterest in the elderly population and discussed having an interest in helping people with 'special needs', particularly children.

> *"Yeah, I think I said to you previously when we were doing the work, not just necessarily for older people, but there's other vulnerable people, like disabled people, children with special needs…there's lots of gardens and that, sensory gardens for special children and adults with special needs"* (Bridgette)

When the topic of a meaningful population arose again, Bridgette clearly demonstrated her preference to do something to help children with disabilities or neurodivergence.

> *"…like I said earlier, working with a school for disabilities, a special needs school or something like that"* (Bridgette)

With the exception of the care home residents, the elderly population used in the study were all living alone, which for Felicia was a meaningful population. In her statement on who she would find meaning in helping, she repeatedly describes lonely people. This repetition or emphasis suggests that this population has a level of importance for her which may be indicative of having felt that way in her own life.

> *"…anyone that's alone, anyone who lives alone or who is lonely really…who I think feel very isolated are young single mums as well, it can be very lonely as a single mum"* (Felicia)

Daniel remembers and recounts how he felt years ago before starting at the community garden. His narrative is a little disjointed as he tries to describe his desire to help those who are facing the same struggles he once had. Daniel seems to be suggesting that he was treated as a diagnosis rather than an individual. He demonstrates a desire to prevent other people with Aspergers from being reduced to a diagnosis and would like to help them understand who they are as people and what they can achieve. This is described as important.

> *"…obviously from where I've come from, when I started as a member here years ago, I really didn't know myself at all so maybe somehow, working with people who are really struggling to know what they are doing with life and just struggling maybe like I was, maybe working with people like that possibly, yeah, so, helping them to know themselves and not actually the thing they've been diagnosed with for me that's actually quite important, learning how Aspergers makes me, and so someone else could benefit from a similar experience as I did, on the autism spectrum"* (Daniel)

When prompted if helping people with Aspergers would be more meaningful, Daniel agrees it would.

> *"I think so, definitely, particularly if they've got similar, like circumstances where they've got no clue what they are doing, and erm, they doubt themselves and they can't see what's possible, I felt like that for a long time so"* (Daniel)

Although not specifying a preferred population to help, Sidney did attempt to describe how it was more meaningful to him to not only present flowers to someone important, such as his mother, but also through delivering the bouquet in person and soon after he had created them. Both these constructs eliminate the social distancing Sidney describes previously.

> *"...when I done them ones for me mum and gave them to her, there was something like, an hour later, yeah. It felt, yeah, cos that's me mum"* (Sidney)

Theme 8. Social status and stigma

To open up the conversation on social status and stigma, the group first explored their thoughts and feelings on whether they perceived providing help to others as a high social status activity or a low social status activity. Participants demonstrated their subjective understanding and interpretations of social status and discussions revealed high status roles as being a judge, doctor, lawyer and football player with suggestions for low-status positions as litter picker, cleaner, and being homeless. A general agreement was formed that helping others is, or rather 'should' be acknowledged as a high social status activity. The word 'should' was used by Sidney, Penelope and Daniel and in using this word they acknowledge

an idealistic social construction where collectivism is rewarded while individualism is abhorrent. Despite the idealism, it was suspected that society as a whole would not view caring roles in this light and would instead see helping others as a throw away activity requiring little to no skill.

> *"...you ask if it's increased our own sense of social status and my answer to that is yes although society might not see that view...I would think, society thinks well everybody can do it and everybody ought to be doing it. Well, yeah, it's kind of universal isn't it whereas er, being a fantastic footballer or a, something high powered businessman or something like that is, not many people can do that so they ought to be getting loads of money for that, so I think, society thinks of caring for other people as being not something to be highly rewarded"* (Walter)

> *"It should be high* [status]*, there should be more of it as well"* [helping people] (Sidney)

> *"Er, I agree with you on society should, er, things are considered low-status i.e., what jobs people do and that but without cleaners in public toilets they would get absolutely disgusting, and road sweepers. We need everybody from every aspect of society, erm, and people who do have high status and that I think well, perhaps sometimes I think they shouldn't have high status in some ways and that but yeah and I view society as everybody has high status, but society views it a different way"* (Penelope)

> *"So, it's more, there's two things here, it's what you think it is to society and what yourself thinks it should be so it's two questions in one, so it's probably, yeah for me it should be quite high like* [member's name] *said, I feel it should be. I'm going to say it is because it should have, it should be"* (Daniel)

Stigma was discussed as being attached to some low-status positions in society and belonging to a community garden for mental health was viewed in this light by both Daniel and Felicia. Felicia described how she would be careful who she discloses her attendance at the garden to

and that she experiences frustration and concern when she is prompted to give further explanation on what the garden is about.

> *"I pick and choose my family and you know and some close friends, I do say what this is about, but other people I don't know so well, I describe it as a gardening group. I think no, don't ask me more, and yeah, but I wouldn't, I don't say what it's* [pause]*"* (Felicia)

Felicia does believe helping others to be 'important in society', however, she also thinks that if she were to describe the altruistic activity that she participated in, to her children then they would react in a way that suggested mum was behaving peculiarly.

> *"I think, if I told my children then they'd think, oh gosh what's mum, she's going to, it's like weaving baskets or something, it's as though, I don't know, I've just got a sense they might think, oh poor mum, what's she doing, she's making* [pause]*"* (Felicia)

Despite the perceived stigma attached to the community garden attendance, both Daniel and Felicia stated that if the altruism was a regular activity and aim of the community garden, then they would be willing to, or be 'very happy to' in Daniels case, tell other people about their attendance.

> *"…if it was regular, even if it was a regular thing, we're picking vegetables or whatever and we're giving them like to the local foodbank then, I would, I would tell people…I would be more open about it"* (Felicia)

4.5.8 Focus group discussion

The effects of altruism

The altruistic activity, that of making and gifting presents, was discussed as a meaningful activity and an activity that provided a sense of emotional wellbeing. Research on giving or carrying out acts of kindness reveals an array of physical and psychological effects experienced by the performer. These include reduced risk of mortality in older adults (Brown et al., 2003), decreases in depression (Mongrain et al., 2018; Schacter & Margolin, 2019), increased life satisfaction (Buchanan & Bardi, 2010), with increased exposure to altruistic behaviour increasing a person's wellbeing (Appau & Churchill, 2019). Brown et al. (2003) suggest that altruistic behaviour induces positive emotions whereby increasing wellbeing and counteracting any deleterious effects from negative emotions. This effect can be observed in a study that investigated the effect of counting kindnesses on people's subjective happiness (Otake et al., 2006). The results demonstrated that the simple act of counting how many times a person shows kindness to another in a given week can increase a person's perceived happiness. The results demonstrated that kind people are happier and have happier memories, that happy people are more kind than unhappy people, and that they become increasingly happier with an increase in memories for being kind. The clinical implication of this result is that an upward spiral could be created since increasing a person's kind acts will result in increasing their happiness, which will in turn increases their incentive to be kind. A systematic review and meta-analysis exploring the effects of performing acts of kindness concludes that performing acts of kindness improves the wellbeing of the actor, and although the effect was small-to-medium, it is comparable to other positive psychology interventions such as 'mindfulness', 'positive thinking' and 'counting your blessings'. These results

suggest that policymakers and practitioners are correct to see kindness interventions as effective ways of improving wellbeing (Curry et al., 2018).

Meaning and purpose in life

Having a sense of meaning and purpose in life is significant since it has a positive effect on a person's psychological and physical wellbeing. An integrative literature review assessing the empirical research and theoretical literature on the sources of meaning in life and people's beliefs regarding the meaning of life provides a catalogue of research supporting the importance of meaning in life (Glaw et al., 2017). Research exploring meaning and purpose in life provides evidence that suggests perceiving a higher sense of life meaning and purpose can help people overcome stress and regulate their emotions (Hill et al., 2018), increase life satisfaction, (Cotton-Bronk et al., 2009), increases a person's level of personal care (Hill et al., 2019), and can contribute to healthy aging (Hill & Turiano, 2014). Meaning in life also helps with stress reduction (Park, 2010) and protects individuals from negative outcomes making them less vulnerable to acquiring psychopathology (Debats, 1999).

Participants in the current study referred to having meaning in life from enjoying the act of gardening, contributing to the beauty of the community garden, and from having participated in the altruistic activity, which was described as meaningful and as providing a purpose. One participant described feeling a double dose of meaning from the joy of gardening and the pleasure in being able to do something nice for someone else. Here, the participant demonstrates the potential for the community garden to be able to provide both eudaimonic and hedonic happiness. Eudaimonic happiness is experienced through psychologically meaningful and purposeful activity such as altruism, while hedonic happiness is experienced

through feelings of enjoyment gained, for example, from participating in a favourite hobby. Eudaimonic theories suggest that eudaimonic happiness provides a sense of wellbeing through contributing to an individual's capacity to fulfil their potential (Steger et al., 2008). The eudaimonic theories are grounded in self-determination theory (SDT), which posits that eudaimonic wellbeing is achieved through fulfilment of three basic psychological needs which are autonomy, competence, and relatedness (Deci & Ryan, 2000).

Steger and colleagues (2008) support their theory through a qualitative diary-based methodology that investigated the relationship between eudaimonic and hedonic activity on a person's wellbeing. The results revealed that a greater sense of wellbeing was connected to performing eudaimonic behaviours and that eudaimonic behaviours created feelings of wellbeing that persisted into the following day. This result contrasts with the wellbeing outcomes of hedonic activity which only provide a moments pleasure (Oishi et al., 2001). Despite the evidence that eudemonic activity, and therefore eudemonic happiness, delivers an increased sense of wellbeing that is maintained for longer, one should not dismiss hedonic behaviours. Further evidence demonstrates that combining both eudaimonic and hedonic activities, i.e., experiencing meaning and pleasure simultaneously, could create the greatest sensation of wellbeing overall (Grimm et al., 2015). Results in this study demonstrate the potential for participants to achieve a heightened dose of wellbeing through experiencing both types of happiness simultaneously. The key tenet and clinical implication here then, is to find an activity that is enjoyable to a given person and incorporate that activity into a meaningful pursuit.

Personally meaningful populations and meaning salience

Group experiential theme seven describes the concept of personally meaningful activities. For example, the current study dictated that attempting to reduce loneliness in an elderly population through gifting flowers was a meaningful activity. The providing for others activity was not chosen ad hoc, rather, it was led by the results from the qualitative study in chapter three. Despite this, it cannot be assumed that all participants would experience growing flowers and creating bouquets, or helping an elderly population, as meaningful. The creative activity of producing flower bouquets was, however, experienced as meaningful by all participants, whereas several participants discussed a desire to provide support to a different recipient population. Personally meaningful recipient populations discussed included single mums, children with special needs and people diagnosed with Aspergers. This outcome demonstrates the importance of meaning salience, a concept termed by Hooker et al. (2018) which describes an awareness of what induces an individual with a sense of meaning. Hooker et al. (2018) suggest that an increase in meaning salience could lead to increased engagement in meaningful activity. For a person to benefit from an activity, they must feel a sense of personal meaning (Hooker et al., 2018). Armstrong and Manion (2015) demonstrated this concept by engaging youth groups affected by depression and suicidal ideation in meaningful activity. The research revealed that adolescents who experienced a greater sense of personal meaning from the activity showed a significant reduction in depressive symptoms and suicidal ideation.

Ideological messages and motivation

The qualitative results clearly demonstrate how important the ideological messages were in the production of the wellbeing benefits experienced. These messages were both audio and

visual and combined helped to provide different layers of evidence. The spoken word portion confirmed the altruistic activity was worthwhile and made some difference in the recipients' everyday life. The photographs of the recipients with their bouquets allowed the participants to see their faces whereby bringing the recipients closer to the participants. This also eliminated any scepticism as to whether the activity had genuinely been carried out and whether the bouquets were sent to where they were said they were going. An ideological message is a phrase termed to describe a message that is thought to inspire employee performance (Grant & Hofmann, 2011). They are sense-giving, or meaning making communications (Pratt, 2000) used by organisations to induce an attitude or behavioural change in employees that increases employees' sense of purpose and importance of their organisation's products or services (Piccolo & Colquitt, 2006). Ideological messages are thought to be strongest when they are delivered by the beneficiaries of an organisation's output. For example, SonoSite, an organisation that makes ultrasound equipment, has invited army personnel to inform their employees of how their equipment has saved soldiers' lives (Pfeffer & Sutton, 2006). Research demonstrates that when beneficiaries deliver ideological messages, employees feel motivated to increase performance (Grant, 2008). In the current study, the ideologically messages were not intended as a motivational tool but were being tested as a tool to induce psychological change through positively enhancing identity, self-esteem, and wellbeing. To this effect the ideological messages were used more in keeping with research on gratitude interventions than workplace motivation. Despite this, on exposure to the ideological messages, participants were made aware of the success of their efforts, and they reported a desire to continue being part of altruistic activities in the future. This result demonstrates that the ideological messages can also act as a motivation tool in a mental health environment.

Ideological messages and mattering

Several participants reflected on having an increased awareness of being able to provide support for other people, with one participant stating how they now recognise helping others as a valuable contribution to society. Perceiving oneself as a person who can help others and contribute to society is linked to the feeling of being needed and of value. A generally accepted assumption is that all individuals desire to feel appreciated (Rosenberg & McCullough, 1981; Dixon et al., 2009). It is from this innate drive that Rosenburg and McCullough (1981) constructed the concept of 'Mattering' which describes the feeling of being important and significant to others, that one is needed and relied upon. Feelings of mattering can arise from both close social structures such as family and friends, or (as seen in the current study), from the wider community (Flett & Heisel, 2020). The feelings connected to a sense of mattering are suggested to manifest from four existential sources: (i) attention, which describes the need for one's actions to be acknowledged, (ii) importance, which describes the relevance of one's actions, (iii) dependence, or the obligations between people and (iv) ego-extension, which is the belief that if one were to leave they would be missed (Rosenberg & McCullough, 1981). The current study provides evidence that satisfy all four existential sources listed above. The ideological messages provided the participants with the attention or an acknowledgement of gratitude, the importance of the altruism was evidenced by perceiving to have made the recipients happy and less isolated, and the dependence and ego-extension was suggested by feeling a level of responsibility to care for someone (but only if the altruistic activities were increased). In support of Rosenburg's theory of mattering, qualitative research exploring the opposite concept of how it feels to not matter revealed that individuals who perceive they do not matter feel that no one depends on them, no one cares about them, and therefore they are no longer needed (Moore, 1997). Indeed, studies examining the relationship to mattering and psychological wellbeing demonstrated a direct

link with an increased sense of mattering and lower levels of anxiety and depression (Rosenberg & McCullough, 1981; Rosenberg, 1985; Schieman & Taylor, 2001; Taylor & Turner, 2001; Rayle, 2005; Dixon et al., 2009). Most enlightening however is the research by Costin and Vignoles (2020), who asked the question, what is it that people are judging when they judge their lives as meaningful? The research examined three separate concepts of meaning in life which were, having a purpose, sense of mattering, and coherence (which the researchers defined as the process of making sense of the world in general). Their investigation revealed that a sense of mattering was consistently more significant to the perception of having meaning in life over purpose and coherence.

Altruism as addictive

The participants demonstrated an enthusiasm for wanting to continue being a part of altruistic activities in the future. The reasons for this desire are not explored in the current study and could be attributed to any of the variables described such as increased psychological wellbeing, enhanced sense of life purpose, or shift in identity from recipient of social aid to a provider of social aid. Another possible variable contributing to this phenomenon could be to do with the idea that the emotional reward gained through acts of kindness, may be 'addictive' (Piliavin et al., 1982). Three participants reported an increased awareness of being able to contribute to society through providing for others while one participant began looking for opportunities to continue to provide help to elderly people within their local community. Although not discussed in the focus groups, many other participants continued to gift flowers to other populations such as friends and relatives after the study had finished. Any addictive like properties experienced through altruism could have been influenced from a form of counting kindnesses as discussed previously whereby counting kindnesses increased

happiness (Otake et al., 2006). Increasing a person's kind acts results in increasing their happiness, which in turn increases their incentive to be kind (Otake et al., 2006). This notion is supported by other research that revealed a correlation between increased frequency of charitable donations and increased wellbeing (Appau & Churchill, 2019). One limitation of this research however is that it leaves with it a direction of effect conundrum of whether kindness creates happy people or happy people enjoy being kind and whether unhappy people would benefit from performing acts of kindness.

4.5.9 Focus group limitations

Focus groups are perhaps less suited for the analytical approach of interpretative phenomenological analysis (IPA) since it can be a complex task to elicit individual experiential narratives from multiple voices (Smith et al., 2009). Particularly if there are dominant voices within the groups (Smithson, 2000). Another criticism of focus groups is that they may suppress (or encourage) conflicting, controversial and non-normative views to emerge (Smithson, 2000). This point was not a concern in the present study however since the participants and the researcher were very familiar and comfortable with each other. Furthermore, group dynamics may lead to less experiential narratives and more discussions on direct evaluations, attitudes and opinions (Smith et al., 2009). Nevertheless, the use of applying IPA to focus group data is increasing as a research methodology (Phillips et al., 2016). The decision to use focus groups was, in part, to reduce respondent fatigue since the members of Trust Links had been scientific 'subjects' for over a year, and many of them had already participated in one-to-one interviews for the study in chapter three. The focus groups were therefore used to offer a new experience with the aim of keeping participants interested.

Additionally, it was important to interview the altruistic activity participants as quickly as possible while the experience of the altruistic phenomenon, especially the exposure to the ideological messages, was still fresh in their minds. One-to-one interviews would have taken considerably longer to conduct, and so, in this time-sensitive scenario, focus groups served as the superior method. As stated in the criticisms, the focus groups proved to have some dominant voices, however, due to four separate focus groups being conducted, the smaller group sizes allowed time for participants to discuss their own experiences in detail while still enabling the construction of joint perspectives which encouraged experiential narratives to emerge (Phillips et al., 2016). Using smaller participant numbers across several focus groups generated sufficient rich experiential data that made IPA viable.

4.6 Chapter four general discussion

This study used triangulation in its methodology, where multiple research methods are employed to explore the same phenomenon. The central concept of triangulation is that where multiple methods lead to the same results, it provides more confidence in the research findings (Rothbauer, 2008) and increases validity (Noble & Heale, 2019). Triangulation can also provide a deeper understanding of the phenomenon being investigated (Heale & Forbes, 2013), reduce the limitations found in each research method through comparing findings (Graham, 2005), and support the confirming of a hypothesis (Noble & Heale, 2019). This study utilised ‘method triangulation’ including quantitative, qualitative, and physiological methods. In addition to method triangulation, the study also utilised ‘theory triangulation’ where several theories were used to build an interpretation of the phenomenon being explored (Rothbauer, 2008). The study was designed using SIT and MOHO, however, in the interpretation of the findings, it was beneficial to include further theory such as Logotherapy

(Frankl, 1959). Logotherapy is a meaning-centred psychotherapy where the client is directed towards exploring meaning, and, ultimately finding meaning in their own life. One of Logotherapy's main tenets is that a person's motivational drive does not come from seeking pleasure or avoiding pain, but to make sense of their life through discovering and experiencing meaning (Frankl, 1959).

The method of triangulation has aided in providing a clearer picture and more comprehensive answers to the study's aims. Individually, all three methods used presented limitations. For instance, the outcome measures may have been affected by 'subject bias', also called response bias, which can occur when participants alter their responses due to an awareness of being part of a study (Villar, 2008). Likewise, the results from the focus groups could be biased through group dynamics and dominant personalities, along with a reluctance to disclose information in the presence of other people (Smith et al., 2009) Finally, the physiological method can provide information on emotional arousal, however, it cannot demonstrate the direction of effect, i.e., whether the arousal came from positive emotions such as joy, or negative emotions such as fear. Collectively however, all three methods add weight to the evidence which supports the findings that the altruistic intervention increased MIL, PIL, MWB and SE, and that MIL and PIL were primarily responsible for the increases in MWB and SE. To illustrate, the quantitative data revealed a greater increase in PIL than MIL scores but could not explain why. The assumption was made that although the participants experienced the altruistic activity as purposeful, it may not have been experienced as personally meaningful. The data collected in the focus groups confirmed this assumption with the identification of the importance of 'meaning salience', or how important an activity is perceived by a given individual. Here, the participants described enjoying the creative activity of flower arranging and, at least from the artistic aspect, experienced it as

meaningful. However, not everyone experienced the recipient population as meaningful, for instance, data revealed a preference for helping single mothers or neurodivergent children. Despite the lack of meaning salience, the focus groups highlighted that the activity and population of recipients were still experienced as purposeful. In other words, the participants could appreciate the need to reduce the loneliness and isolation felt by elderly people living alone. The HRV results demonstrated that the stimulus viewed in the slide show influenced cardiovascular activity helping to validate the responses given in the psychological outcome measures and focus groups whereby helping to reduce the concern over any participant response bias.

Whether the participants experienced changes in meaning and purpose through the altruistic activity and whether this influenced the observed outcomes, i.e., heart rate variability, psychological wellbeing, sense of value, and social identity is difficult to answer. The quantitative study revealed that MIL and PIL significantly increased from baseline measures after the altruistic intervention. Likewise, the HRV provided physiological evidence with the altruistic activity influencing all HRV parameters compared to baseline. Additionally, the focus groups presented data that described the experience of meaning, purpose, enhanced social identity, reduced stigma, and an awareness of being able to contribute to society. At first glance, one might conclude that the method of triangulation provides a comprehensive picture which increases confidence that the enhancement of meaning and purpose was responsible for the observed positive affect. However, as stated, the study also uses theory triangulation which makes use of several theories in the interpretation of the phenomena. Indeed, SIT, MOHO and Logotherapy can be utilised to offer differing interpretations for the observed outcomes in MIL, PIL, MWB and SE.

According to Logotherapy, mental ill-health is suggested to originate from an existential crisis or 'noogenic neurosis', where one describes feelings of meaninglessness or a lack of life purpose. This feeling is described by Frankl (2010) as an 'existential vacuum'. Individuals in an existential vacuum can experience a loss of motivation and interest in pursuing activities. Alternatively, individuals may experience 'existential frustration' (Frankl, 2010), where one feels blocked from actualising meaningful goals that make life worthwhile. The altruistic activity may have created a pathway that enabled the participants to break free of their existential frustration. Although the existential vacuum robs a person of their motivation, MOHO and SIT can explain how the participants were able to find the motivation to perform the altruistic activity. MOHO suggests that central to an individual's motivation is their thoughts and feelings towards the questions, "Am I good at this?", "Is this worth doing?", and "Do I like this?" (Taylor, 2017, p.12). The question of 'is this worth doing' would have been accepted as 'yes' given the results from chapter three where participants described how they received enormous satisfaction and psychological wellbeing from helping others. Furthermore, SIT tenets, such as the chance to enhance identity through gaining responsibility and contributing to society, would have provided further motivation towards the participation in the altruistic activity. The other questions, 'Am I good at this?' and 'Do I like this?' would most likely have been answered on seeing the success of their efforts, i.e., the flourishing flower garden. Moreover, success would have been confirmed indisputably on exposure to the ideological messages. Hearing the messages of gratitude could have demonstrated to the participants that they were indeed good at the activity. In turn, this could have generated a sense of meaning and purpose in life explaining the increase in MIL and PIL scores.

Having become a person relieved of existential frustration can be used to provide an explanation for the increase in MIL, PIL, MWB and SE. However, so can the shift in social identity as described in the focus groups, with the participants experiencing being needed, valued and someone who could contribute to society. Having a sense that one's life has a meaning and a purpose can counteract a sense of worthlessness and creates distance from an illness-dominated identity (Mancini et al., 2005). Distancing a person from a negative or low social status identity, such as being mentally unwell, is an important tenant in SIT (Tajfel & Turner, 1979, 1986). Research in social psychology highlights how social groups can foster environments that are detrimental to wellbeing, for instance, through processes such as stigma, discrimination and inequality (Wakefield et al., 2019). A group member must feel their identities are of value to society for social processes to induce positive effect (Bowe, et al., 2019; Wakefield et al., 2019). In Chapter three it was stated how SIT and self-categorisation theory can explain the dilemma of attaining a low-status social identity through joining a mental health programme i.e., the difficulty in classifying oneself as a person in need and the acceptance of this identity. Increasing the meaning and purpose of a given activity could counteract any negative social processes described in SIT. This study tested a specific SIT hypothesis presented by Haslam et al. (2018) which suggests the enhancement of a person's identity would increase their psychological wellbeing. Several participants in the current study reported experiencing a realisation that they are of value to society, and experienced a renegotiation of identity to someone who can provide for others. This effect wasn't experienced however until the exposure to the ideological messages.

Another concept, offered by MOHO, suggests that the outcome of the altruistic activity could have altered one's sense of capacity. Sense of capacity is the awareness of one's own capabilities and, throughout a person's life, new experiences can affect or change one's sense

of capacity (Taylor, 2017). Engagement in the altruistic activity, especially in regard to exposure to the ideological messages, may have altered the participants sense of capacity and provided concrete evidence of the participants' 'personal causation'. Personal causation is having an awareness that one can be the cause of events happening (DeCharms, 1968) and involves a self-assessment of one's abilities and self-efficacy or the effectiveness in using personal capacities to achieve a desired outcome (Lefcourt, 1981). MOHO suggests that individuals who feel capable and effective will seek out opportunities (Taylor, 2017). This process may have taken effect since data identified in the focus groups revealed that some participants sought opportunities to continue creating bouquets and gifting them while others looked for further opportunities to help others in their communities. The whole cycle described above may have provided the participants with what MOHO terms an 'occupational identity'. For example, one form of neurosis described in Logotherapy is 'unemployment neurosis' which originates from identifying oneself as jobless, useless and ultimately lacking meaning in life. This sentiment resonates with a statement made during a focus group in the current study that a lack of employment left a void that made the participant feel "pointless." For this participant, realising that helping other people made a valuable contribution to society allowed them to shift their point of view, increase their sense of capacity and gave them an occupational identity.

All participants showed a societal understanding of what constitutes a low or high social status in the community and a general consensus was agreed upon that society 'should' view helping people as a high-status role, however, it was acknowledged that society probably does not view it this way. Despite this, several participants suggested that if the altruistic activity continued on a regular basis, it would provide an occupational role and identity that they would be proud to talk about and share with others. This notion is significant since

stigma was felt and expressed by several participants who preferred not to reveal their attendance at the community garden to friends or relatives. The idea that identity could potentially be changed through social engineering and increasing meaning and purpose could not only increase referral, uptake and attendance of NBIs, but increase mental wellbeing and self-esteem too. Self-esteem enhancement theory, (Batson, 1998) suggests that being able to provide support to someone can lead to an increase in self-esteem and wellbeing, whereas being in receipt of support can have detrimental effects on wellbeing through negative self-evaluations (Bracke et al., 2008). A study exploring the effects of the reciprocity of peer support on self-esteem and self-efficacy in a mental health population concluded that providing support is more beneficial to wellbeing than receiving it in terms of empowerment and self-esteem (Hutchinson et al., 2006). This could in part be due to the significance of occupation and a possible identity shift from 'recipient' to 'provider' whereby becoming a valued contributor to society (Hutchinson et al., 2006).

4.7 Chapter four conclusion

Through the lens of SIT, MOHO and Logotherapy, increases in MIL, PIL, MWB and SE are interpreted through enhancement of identity (and therefore reduced stigma), an altered sense of capacity, and the actualising of values that replace any existential crisis with meaning. MOHO views the environment as the most important tool in occupational therapy (de las Heras et al., 2003). Indeed, environmental adaptation was central to the altruistic intervention with the creation of an environment that attempted to provide motivation to engage in activity, support the participants in gaining meaning and purpose in life, enhance social identity, and offer an occupational role that promoted feeling needed, being of value, and allowed for reciprocity in the provision of social aid. Chapter four has utilised method

triangulation and theory triangulation in a study that tested the theory in an applied psychological paradigm to explore enhancing MIL, PIL, MWB and SE. The mechanisms of the observed outcome were discussed through the lens of multiple perspectives. However, the answer to the mechanism/s of positive affect no doubt lies in the phrase 'the whole is greater than the sum of its parts', and the observed increases in MIL, PIL, MWB and SE are likely due to all variables combined. The final chapter, chapter five, will discuss the thesis as a whole before suggesting a practical application for the findings through the construction of an integrated model of NBIs for adult mental health.

Chapter 5. General discussion

5.1 The barriers to nature-based interventions

The overarching question that underpinned the thesis concerned how to upscale NBIs for adults with mental health problems. To begin answering this question, one first needs to identify and understand the barriers that are preventing the upscaling of NBIs. Once identified, the research can then address these barriers and explore how they can be reduced, eliminated, or even turned into enablers and facilitators. A preliminary review of the literature on NBI barriers revealed the majority of barrier research focused on the organisational, practical, and bureaucratic barriers such as unclear referral pathways, GP buy-in, NBI programme transparency, local availability of green spaces, funding issues, staffing challenges, and health and safety concerns (Jepson et al., 2010; Fixsen & Barrett, 2020; Robinson et al., 2020; Wong, 2020). There is also the issue of a lack of availability of NBIs (Robinson et al., 2020; Wood, Polley, et al., 2022) and, where NBIs are provided, the issue of accessibility (Weerasuriya et al., 2019). All these barriers (described in detail in the literature review), are acting within a 'build it and they will come' mindset suggesting that, if the above list of barriers were all addressed, then there would be NBIs in every town with long attendance waiting lists. This notion ignores any barriers experienced by the NBI service user, the psychological, psychosocial, and physical (PPP) barriers.

5.1.1 Psychological, psychosocial and physical barriers

Chapter two explored the PPP barriers via a scoping review revealing a total of five physical barriers, fourteen psychological barriers, and twenty-eight psychosocial barriers. These findings mirrored that of a UK government report exploring the perceptions of 'green social prescribing' which concluded the social elements, specifically the element of meeting 'unknown people', was the most common barrier (Department of Health & Social Care, Gov.UK, 2023). A scoping review on the impact of NBIs on health found a contradiction in results for the social elements. Across the studies considering the social processes, the presence of other people was found to be the most common barrier, but also the most common enabler (Nejade et al., 2022). Chapter 3, the qualitative study exploring the social phenomenon of NBIs, offers a possible explanation for the observations reported by Nejade et al. (2022) which is that the social elements begin as the greatest barrier to uptake and attendance of NBIs, however, with time the social elements become the greatest enabler and the most enjoyed aspect.

One social barrier reported in social prescribing research (and found again in this thesis) is that of stigma surrounding mental health or a low social status identity. For instance, Aughterson et al. (2020) report how programmes labelled as mental health interventions can act as a barrier to attendance. Joining a NBI for mental health, although far removed from a clinical setting, still asks the service user to accept a stigmatised or low social status identity through the self-categorisation of being a person in need of help and subsequently identifying as mentally ill. SIT highlights this as problematic since people prefer to distance themselves from low social status identities and search for more favourable identities (Tajfel & Turner,

1979). In this light, not joining a NBI could benefit psychological wellbeing through the rejection of a stigmatised identity. There is some evidence from research on psychiatric patients to support SIT's claim, for instance, Mancini et al. (2005) revealed how being forced to publicly identify as a 'mental patient' was a barrier to recovery from 'psychiatric disabilities'. Indeed, a loss of social status has been included in the very definition of stigma (Link & Phelan, 2001).

One answer to prevent undesirable identities becoming a barrier to NBI attendance would be to prevent the internalisation of a mentally ill identity. Internalisation is a process whereby one assimilates culture, attitudes or opinions of others into their own identity (Zittoun & Gillespie, 2015). For example, Tajfel (1978) suggested that when people are repeatedly treated by others in terms of a particular social group, they are likely to internalise this categorisation to the self. This is a key concept in SIT with the internalisation of negative identities being detrimental to psychological wellbeing and the internalisation of valued identities enhancing psychological wellbeing. Internalisation leads to self-stigma which in turn can result in negative consequences that could inhibit the recovery process (Warner, 2010). These include social isolation (Watson et al., 2007), reduced wellbeing (Morgades-Bamba et al., 2017), low self-esteem and a loss of identity (Livingston & Boyd, 2010; Yanos et al., 2010). Even when members of stigmatised groups do not experience acts of discrimination, they may 'internalise' negative representations of their group membership or social status (Goffman, 1963). However, stigma is not always internalised, although the basis for why some people are not susceptible to the internalisation of perceived stigma is not fully understood (Livingston & Boyd, 2010; Hasson-Ohayon et al., 2011). It is possible that social support (Chronister et al., 2013) and perceiving that one is of value and contributing to society (Sibitz et al., 2011; Thoits, 2011) could offer a buffering effect against internalising

stigma (Bradstreet et al., 2018). The idea of contributing to society was also discussed in a qualitative study by Sells et al. (2006) where engagement in community activities enhanced wellbeing through the transformation of identity away from that of a 'mental patient'. Equally, research has shown that not everyone internalises their diagnostic label, however, those that do accept an identity label, for example depression, will display how that identity shapes their behaviour (Cruwys & Gunaseelan, 2016). For instance, when people are aware of how they are considered by others, they often present themselves in line with these expectations (Barreto & Ellemers, 2003). In agreement with ideas put forward by SIT, research demonstrates that it is not necessarily a group category that defines a person or their behaviour, but rather how one negotiates their identity and association with the group (Cruwys & Gunaseelan, 2016).

Another answer is to allow service users the freedom to use social creativity to construct an alternative reality. Chapter three reveals how participants used social creativity to redefine their position in society, i.e., they choose to identify as a community garden volunteer rather than a NBI service user. Furthermore, several participants discussed attending a NBI at a location far away from their hometowns to avoid seeing people they knew while in attendance. Finally, a few service users created the pretence that they were training to be a gardener and would use this construction when talking to friends or family. Other research has shown similar trends with reports of service users renegotiating their identities by viewing their NBI as a resource for the broader community, rather than a mental health intervention and enjoying how it is not always easy to tell 'who's who', for instance the difference between volunteers and participants (Whatley et al., 2015). The reframing or transformation of a service user's identity from patient to volunteer has been suggested as a fundamental step and a key issue in treatment and recovery (Stevens, 2018).

A preferable solution would be to not provide a mentally ill identity or label in the first instance. This concept, that of offering and promoting the internalisation of a positive identity would add another dynamic to the wellbeing mechanisms offered within NBIs and could be achieved through social creativity or the rebranding of NBIs. SIT provides the theory to help turn social barrier aspects around whereby unlocking the social cure. There are at least five hypotheses presented in Haslam et al. (2018) which can be utilised in the context of rebranding NBIs, providing positive identities and empowering service users. These are (i) The social identity hypothesis – which states one's identity is central to both good and ill health, (ii) The identification hypothesis – A person will experience the wellbeing benefits or negative affect through group membership only if they identify with the group, (iii) The group circumstance hypothesis - social identity contributes to psychological wellbeing when the group that defines a person's social identity is enhanced, e.g., by success or high status, (iv) The creativity hypothesis – should circumstances threaten positive social identity then people are likely to respond through strategies of social creativity, (v) The norm enactment hypothesis – a person will behave in accordance to the norms and values associated with a given identity if they define themselves in terms of that social identity.

Several of these hypotheses have been demonstrated or implemented within this thesis. The creativity hypothesis has already been discussed above with the service users re-constructing their identities and involvement with the NBI. The group circumstance hypothesis was implemented through the altruistic activity study in chapter four with identity being enhanced through helping others and becoming of value to one's community. It is also possible that the norm enactment hypothesis could be used to explain why the helping of others persisted after the study terminated through the continuation of making flower bouquets to gift, and (as stated in one focus group) looking for opportunities to help others in the local community.

5.2 Rebranding nature-based interventions

To destigmatise an identity and create an attachment to a highly valued social enterprise, NBIs could investigate the concept of renaming programme titles, programme descriptions, and service user titles. The NBI charity employed in this thesis calls their service users 'members'. Chapter three revealed that the title of 'member' was not enjoyed by all service users and there was some concern expressed over this label being difficult to shed oneself of. This statement captures the notion of power in perpetuity or 'once a patient, always a patient' (Gutheil & Brodsky, 2011). Secondly, the thesis revealed how some service users refrained from sharing their attendance at a mental health intervention due to stigma. Therefore, it would be advantageous to rebrand NBIs to offer a positive identity and to de-medicalise the programme. For instance, Jauregui (2022) discusses the development of a new NBI aimed at college students as a preventative measure for mental illness. The title proposed is the 'Mindfulness, Nature, Wilderness, and Spirituality Program' which completely sheds itself of any association to mental ill-health or stigmatised identities. The use of language can influence the way we think, and the specific choice of words used can shape a person's thoughts and subsequently their responses and actions (Lasalvia, 2018). For instance, research exploring the rebranding of adult education demonstrates that renaming the student population from 'adult learner' to 'post traditional learner' can have a positive impact through the reduction of stigma attached to the adult returning to education (Sutton, 2018). The renaming of Schizophrenia is another example of the positive effects that can be attributed to the choice of language used. The current diagnostic label of Schizophrenia is made up of two Greek words meaning 'split mind'. Several studies have examined the outcome of renaming Schizophrenia with suggestions including 'intergration dysregulation syndrome' and 'attunement disorder' (Lasalvia, 2018). Evidence gathered under these name

changes demonstrates an improvement in clinician, patient, and family communication, a significant increase in the number of patients informed about the diagnosis (Sato, 2006), and a reduction of stigma (Takahashi et al., 2009).

Through careful rebranding, i.e., programme name and description change, de-medicalisation and the repositioning of NBIs from the medical model to the biopsychosocial model, a shift in identity could be created from one who is a recipient of social aid to one who can care and provide for others. Additionally, NBI service users could experience an occupational change from person of vulnerability to person of responsibility and a person of value who can contribute to society. Internalisation of a positive and valued social identity could be an integral key to reducing stigma, enhancing wellbeing, providing motivation to attend, and increasing attendance rates. Certainly, recovery from mental illness should involve growth and development, which, at the heart of this process, lies the transformation of identity (Mancini et al., 2005). A further consequence of internalising a valued social identity is that of causing a shift in locus of control (LOC). People who have an external LOC attribute what happens to them as fate, luck and out of their control whereas people who have an internal LOC believe they are in control of their life and future (Rotter, 1966; Gore et al., 2016). From a health perspective both internal and external LOC are significant predictors of health behaviour. External LOC positively predicts unhealthy behaviours, for example, junk food and substance consumption, whereas internal LOC positively predicts healthy behaviours such as increased exercise (Gore et al., 2016). The Multidimensional Meaning in Life Scale (MIL) contained four questions related to LOC, questions that explored whether one feels events are random or whether one feels they understand the events in their life. The fact that these questions are part of the scale demonstrates the importance of LOC in MIL. The altruistic activity study resulted in an increase in MIL scores which may in part be due to a

shift in LOC from the external to the internal. It is plausible therefore that service users may gain an internal LOC through internalisation of an enhanced social status or valued identity. A salutogenic model (a health model that focuses on the origins of health rather than the pathogenesis of disease) (Antonovsky, 1996), proposed in a study by Aviad-Wilchek (2021) found that meaning in life mediates between LOC and suicidal tendency in patients with mental illness. As studies have demonstrated that internal LOC and MIL can protect against various pathologies, including reducing suicidal ideation (Aviad-Wilchek, 2021), it follows that mental health professionals should aim to increase their patients' internal LOC through exposure to positive experiences and successes (Aviad-Wilchek, 2021).

5.3 The significance of meaning and purpose

A coping mechanism identified in chapter three was having a greater meaning or purpose as a reason for attending an NBI, which appeared to build resilience allowing people to 'endure' the social challenges. Indeed, occupational therapists use meaning and purpose as a tool to motivate clients into initial engagement (Jackson et al., 1998), a facet that is equally influential in NBI attendance (Iancu et al., 2014). In their research, the motivation to attend a NBI came from undertaking personally meaningful activities. Chapter three and four also revealed how purpose, in the form of feeling needed and of value to society, positively affected one's psychological wellbeing. In essence, this was fulfilled through helping other people which is perhaps not surprising since our social relationships provide our lives with purpose, allow our lives to matter and influence how meaningful one perceives their existence to be (King & Hicks, 2021). According to Ryan and Deci (2001) perceptions of social relatedness are one of the strongest determinants of psychological wellbeing. This

sentiment is clearly demonstrated in NBI research for instance, meaning has been experienced through engaging in activities that were useful to others (Iancu et al., 2014), through being needed and having a place and a role in society (Granerud & Eriksson, 2014), and through feeling useful, helping nature and making people happy (Thomson et al., 2020). Additionally, research exploring reasons for attending community engagement programmes in general revealed that the biggest motivational factors were making social connections and engaging in meaningful activities (Pernice et al., 2021).

What constitutes as meaningful activity, however, will differ for each individual. The focus group discussions in chapter four revealed how some of the participants preferred helping other populations in their community rather than the elderly such as children with learning difficulties, single mums, and people diagnosed with Aspergers. Organising an activity or a population of beneficiaries unique and personally meaningful to each participant was beyond the scope of this thesis. In order to increase meaning and purpose for every individual the concept of meaning salience (described in chapter four) would need to be considered. However, where participants from chapter four did experience the elderly population as personally meaningful, and where they simultaneously enjoyed undertaking the garden tasks required to provide for this population, a double dose of happiness was described. This resulted in some participants experiencing eudaimonic and hedonic happiness simultaneously, which is suggested to provide a greater sense of wellbeing (Grimm et al., 2015).

In a study examining the therapeutic benefits of horticulture in a mental health population (Parkinson et al., 2011), it was described how having an interest in gardening was the best

predictor of high levels of volition. Volition is a term used by occupational therapists as described in MOHO (Kielhofner, 2008) and refers to motivational factors leading to occupation. Self-determination theory describes two types of motivation. Autonomous motivation, which involves acting with a full sense of volition and choice, and controlled motivation, which involves acting with the experience of pressure and demand (Deci & Ryan, 2008) (for instance, NBI staff dictating what a meaningful activity is instead of asking what service users find meaningful). The altruistic activity supports the tenets within occupational therapy, that activities are not meaningful per se, rather they rely on individuals and social groups to provide them with meaning and purpose (Creek, 2003).

Ignoring the importance of meaning salience could have negative consequences and hinder positive outcomes from NBI attendance, particularly in the area of task engagement. To illustrate this point, Sempik et al. (2014) examined four mechanisms of NBIs; 'Social', 'Communication' (operationalised as talks or gestures to convey wants or information to others), 'Motivation' and 'Task engagement'. The findings revealed no difference between assessment scores of any of the measures taken at day zero compared with those at 30 days. However, scores for social and motivation (but not task engagement or communication) were significantly greater after 90 days of NBI attendance. These findings are in keeping with the results presented in chapter three of this thesis where socialisation was experienced as the biggest barrier to begin with, but with continued attendance, the social aspects eventually became the main reason for attendance and a significant motivating factor. Sempik et al. (2014), however, were unable to report any significant changes for the scores in task engagement or communication. The authors discussed having had an expectation for task engagement scores to increase and suggested the lack in improvement may be down to the

study's method of measurement. A different conclusion to the lack of improvement would be to consider that Sempik and colleagues neglected 'meaning salience' in their study design and the participants did not find the tasks personally meaningful and therefore did not grow to enjoy them. MOHO discusses the importance of 'performance capacity' which describes a person's ability to perform. Individuals who lack a sense of capacity will tend to avoid occupation (Taylor, 2017). A lack of task engagement could therefore have affected and stunted confidence which would explain why Sempik and colleagues found no change in the communication mechanism either.

Chapter three also demonstrated the importance of meaning and purpose through three interviewees who described the NBI lacking in purpose. For them the gardening activities were void of the opportunity for personal development from learning new skills or acquiring new knowledge. As a result, the activities were experienced as boring and soulless. One of these interviewees eventually dropped out of the intervention. This leads to the question of just how important meaning and purpose is in a person's life, and what the outcome might be when a person lacks a meaningful or purposeful life. The psychiatrist Carl Jung stated that 'man' [sic] cannot stand a meaningless life (British Broadcasting Corporation [BBC], 1959), and one may well enquire exactly what is meant by being unable to 'stand' meaninglessness, along with the associated cost to one's health. An extreme answer to this can be provided by a report from the Canadian health service on a programme called 'Medical Assistance In Dying' (MAID). Released on July 24, 2020, the report provides yearly trends in who has requested and receives MAID, and the circumstances under which it is provided. To be accepted for MAID, patients must be experiencing unbearable physical or psychological suffering that cannot be relieved to a level that the patient finds acceptable. MAID

practitioners are required to report on how the person requesting MAID describes their suffering. It would be reasonable to assume that the most intolerable physical or psychological suffering reported would be unbearable or relentless pain, however, this was not the case. It was in fact the loss of ability to engage in meaningful activities (stated by 84.9% of patients) that caused the most suffering. The total number of medically assisted deaths through MAID in Canada since the enactment of the legislation in mid-2016 is 21,589. In 2020, 232 patients requested to withdraw from MAID (Government of Canada, 2020), whereby demonstrating that, despite fulfilling the criteria of MAID (i.e., experiencing unbearable suffering), candidates can still change their minds. This beckons the question whether any MAID cases would withdraw from the programme if an occupational therapist could be employed to increase their meaning or purpose in life.

A unique article in which the author writes from personal experience of mental health recovery describes a mental health practitioner's directed goal of achieving valued roles but suggests that a role has no value unless you fill it with your own personal meaning and purpose (Deegan, 1997). Research has attempted to understand the characteristics of occupations experienced as meaningful from the perspective of people with mental health disorders. A qualitative phenomenological study on long-term mentally ill people living in the community identified themes around occupational roles and identity, contributing to society, and being significant to, and needed by others (Hvalsøe & Josephsson, 2003). The authors revealed how identity was important with a desire to be seen as 'normal'. Occupation was therefore experienced as meaningful when it reduced the perception of being an 'outsider', reduced a stigmatised identity, and enhanced a sense of social connectedness through being able to participate in and contribute to society. Accounts demonstrated an

appreciation for social support but a desire to manage without it, therefore meaningful occupations were those that enhanced identity. Participants described the qualities of future occupations which were characterised as being productive, satisfying, personally meaningful, contributing to society, a desire to be seen as important by others and to be of benefit to others. Being needed by other people was a salient theme with one account expressing enjoyment gained through being a shopping assistant for the elderly. In this role they experienced being needed and depended on. In other words, they had a responsibility and a life purpose (Hvalsøe & Josephsson, 2003). Christiansen (1999) argued that meaningful occupation was connected to the identity of a person and that identity is developed through the social environment and perceiving a meaningful life. Quantitative research using the Recovery Assessment Scale (RAS), revealed that social factors, including perceptions of social status within the community were associated with higher scores on the RAS (Garverich et al., 2021). This result further supports the significance of social connection and identity in mental health recovery.

Similarly, Hancock et al. (2015) described an emerging hierarchy of occupations in terms of personal meaningfulness with caring for other people at the top. Despite occupation having provided other sources of meaning, such as developing a positive sense of self, gaining new skills, personal development, having a routine, financial gain, and enjoyment, the occupations considered the most meaningful were those that provided the greatest opportunity for social connection and being valued by others. The concept of being valued by others was described by participants as being a contributor in social relationships, looking after other people, feeling needed, wanted and cared for, and feeling one is able to give something and help people. The second most described benefit of meaningful occupation was gaining a positive sense of self. However, it is possible that a positive sense of self is experienced through the

social factors and that this benefit is obtained through feeling needed and valued by others (Hancock et al., 2015).

Further qualitative research concluded that staff of mental health facilities, who spend their time in occupations that provide help, should reflect on how they might be depriving their service users of the opportunity of experiencing meaning through helping others (Tønnessen et al., 2023). Meaningfulness is derived through helping other people, and being in a position of giving provides more meaning in life than being in a position of receiving, (Baumeister et al., 2016). This is because being in a position of giving is positively related to meaning, while being in a position of receiving is negatively related, therefore, givers may perceive life as more meaningful than receivers (Tønnessen et al., 2023). Borg and Davidson (2007) argue that being stuck in a position of receiving creates an imbalance in the recovery process and that a greater balance is gained if the person in recovery is allowed to give whereby experiencing being a part of something greater than the self. Mental health professionals are often in the empowered position of giving, while the service user is usually in the position of receiving. Tønnessen et al. (2023) suggest to promote recovery from mental health, professionals should provide opportunities for service users to give and not just receive. Additionally, a scoping review by Doroud et al. (2015) provides similar supporting evidence in their synthesis. The authors reported that meaningful and valued occupations support recovery through increasing social connectedness, hope, and meaning in life, enhancing social identity, providing empowerment, and normalising life through establishing structured routines.

Accumulatively, what these researchers have revealed from people living with mental health issues is that they have a need to feel important and that they matter to the world. Mattering, defined as the feeling of being significant and important to other people (Rosenberg & McCullough, 1981), offers a unique pathway to maintaining psychological wellbeing since perceiving one is valued by others can reduce mental health stigma (Pernice et al., 2017), while feelings of not mattering are linked to depression and suicidal ideation (Flett et al., 2019). Paradisi et al. (2024) describe two pathways to existential wellbeing, (i) through gaining a sense of life satisfaction (hedonic wellbeing), and (ii) from feeling a deep sense of purpose and self-worth (eudaimonic wellbeing). In their meta-analysis, mattering was a significant factor in determining one's sense of self-worth and purpose in life, however, the largest effect size was observed when mattering was derived from eudemonic wellbeing. This result demonstrates that mattering becomes a stronger predictor of wellbeing when it is achieved through deeper existential dimensions such as when people feel they are needed and important to others (Paradisi et al., 2024). For some, perceiving that they matter or do not matter becomes an issue of life or death (Flett, 2022). Since suicidal ideation is linked with not mattering, a growing number of suicide intervention programs in the US are focusing on the theme of mattering. The National Suicide Prevention Lifeline is one such example which uses the message "You Matter" (Flett, 2022). As NBIs are centred around occupation, and as occupation is one way of operationalising mattering, NBIs should aim to offer activities that enhance an individual's sense of mattering, not just through meaningful activity, but through activity that is meaningful to the individual, and through activity which allows for the experience of giving to others.

5.4 Unlocking the nature cure

5.4.1 Connection to nature

The research in this thesis was heavily influenced by SIT, particularly from the aspect of reducing what has emerged from within this thesis as NBIs' greatest barrier – the social aspects. By utilising specific hypotheses within SIT it was demonstrated that it is possible to unlock the social cure (Haslam et al., 2018) and turn around some of the social curses or social barriers, i.e., low self-esteem, low social status identity and stigma, into social cures. In the same manner, nature as a cure may not be simply available by engaging in nature, it is possible that the benefits of nature need unlocking too.

In an article on nature and social prescribing, the National Academy for Social Prescribing (NASP, 2024) stated that there is a strong link between connecting to nature and improvements in mental health. This sentiment is reiterated in the same article again with the suggestion that, although years of academic research reveals a link between nature engagement and mental wellbeing, it is through "connecting with nature, appreciating it and building a relationship with our natural environment" (NASP, 2024) that the benefits are most profound. The NASP present the reader with some interesting words such as appreciation, relationship and connection. They do not describe engaging in nature as being important for mental health, rather, they state one must have a 'connection' to nature as the important factor for wellbeing. Nature engagement and nature connectedness are two very different constructs. Nature connectedness is described as having a psychological and emotional connection with nature, while nature engagement has been described as engaging

with nature directly and indirectly by either spending time in nature or carrying out nature-based activities (Richardson et al., 2021).

One study has simultaneously explored the differential influences of nature connectedness and nature engagement on wellbeing (Richardson et al., 2021). Across various analytical approaches, results revealed passive nature engagement, i.e., time spent in nature was not a significant predictor for wellbeing. Rather, it was nature connectedness and nature-based activity that predicted wellbeing (Richardson et al., 2021). Similar findings were reported by Wicks et al. (2023) where having a connection to nature was found to significantly improve mental wellbeing, whereas the percentage of green space available in a given residential ward was not significantly associated with any outcomes in mental wellbeing. This suggests that nature engagement per se is not a significant predictor of mental wellbeing. Wilson (1993) argues that the notion of biophilia is compelling through the logic of evolutionary history and that humans evolved in a biocentric world, not a machine-regulated world. Wilson should define 'machine' however, since the word machine has evolved and attached itself to different technologies over the course of human history. For example, in the 1500's the word machine was used in reference to weaponry (Oxford English Dictionary, 2000). Anthropologists suggest mankind became bipedal to free up their hands to use 'machines' (Washburn, 1960). It could be argued therefore, that machines are not only part of our anthropological evolution, but also, we have adapted with their use. Wilson himself demonstrates uncertainty towards the biophilia hypothesis by opening his chapter on biophilia with the words; "Biophilia, if it exists…" (Wilson, 1993, p. 31). Wilson does argue for the existence of biophilia but also recognises that biophilia has atrophied through urbanisation. Within the academic community, there is a concern that global urbanisation is increasing biophobia, a phenomenon termed the urbanisation-disgust hypothesis (Fukano &

Soga, 2021) and, akin to biophilia, there is an argument that biophobia originates from a genetic component. For instance, the development of an automatic physiological response to avoiding elements in nature that could cause harm (Bertels et al., 2018), which would be an advantageous evolutionary adaptation enhancing an individual's chances of survival (Soga, 2023). A three-stage pathway to biophobia has been proposed in a framework that describes the 'vicious cycle' of biophobia. Stage one suggests that an increase in biophobia is driven by an exposure to negative information about nature. This results in nature-avoidance (stage two), which can lead to long-term disconnection from nature (stage three) (Soga, 2023). The framework describes a vicious circle since a disconnection from nature can lead to nature-ignorance (Soga, 2023), which can generate further negative information about nature.

If a decrease in nature engagement results in an increase in biophobia or a loss of nature connectedness, perhaps by increasing one's engagement with nature, one can begin to increase their connection to nature. Research has suggested this is the case (Mayer et al., 2009), however, other research has revealed that passive contact with nature has no effect on connectedness to nature (Lengieza & Swim, 2021a; Richardson et al., 2022). Various theories have been explored to investigate the formation of nature connectedness, and a growing body of research has demonstrated that nature connectedness may form through specific interactions with nature. These include environmental education (Liefländer et al., 2013; Pirchio et al., 2021), performing activities out in the natural environment (Garza-Terán et al., 2022), undertaking garden-based activity to enhance visible biodiversity (Hamlin & Richardson, 2022) and regularly reflecting on one's relationship with nature (Samus et al., 2024). Further predictors of improving nature connectedness include engagement with natural beauty (Richardson & McEwan, 2018), nature contact that generates emotion, meaning and compassion (Lumber, Richardson, & Sheffield, 2017), and investigating nature

through the senses, art, conservation, growing food, scientific enquiry, and engaging in wild nature (Lumber et al., 2018). Uniquely, virtual reality has also been utilised to promote human-nature connectedness through the artificial generation of the 'overview effect' (a term astronauts use when viewing the Earth from space which instils a sense of awe and heightened interconnectedness). Results utilising the generation effect showed significant increases on human-nature connectedness (McKeever et al., 2024). Despite the growing body of research, little is known about the pathways to strengthen nature connectedness (Samus et al., 2024) and a greater understanding of the pathways that lead to the formation of nature connectedness is needed (Lengieza & Swim, 2021b). Furthermore, initiatives that increase nature engagement, sustain nature connection, and encourage repeated exposure to nature need designing and testing (Sheffield et al., 2022). One such theory worthy of exploration would be whether personally meaningful or purposeful nature-based activities would lead to an increase in nature connectedness.

Through designing personally meaningful and purposeful service-user specific activities, NBIs could facilitate a steady increase in nature connectedness and therefore increase nature engagement. This could break the 'vicious cycle' of biophobia and lead to a connection to nature-nature engagement loop. In this light, a new conceptual framework could be proposed such as the 'self-perpetuating connectedness to nature cycle'. For example, to initiate nature engagement, particularly with someone who has low or no nature connectedness, a NBI would have to provide the motivation. Motivation, according to Repper and Perkins (2003) is a key facilitator in maintaining intention to participate in therapeutic recreation activities. The results in this thesis have demonstrated that personally meaningful and purposeful activities affect social identity, pro-social behaviour, self-esteem and psychological wellbeing, and therefore could also act as a potential motivating factor to NBI engagement. The personally

meaningful activities would then act as the driver towards continued nature engagement which in turn could begin to increase a person's connection to nature and so begins the self-perpetuating cycle, unlocking the potential benefits of nature connectedness and nature engagement.

Having suggested that the benefits of nature connectedness and nature contact may need 'unlocking', it is appropriate to continue the discussion by examining exactly what is being unlocked. However, synthesis of the evidence is not as straight forward as it should be due to the differing terminology adopted by various researchers. Although the terminology is most likely being used interchangeably, and therefore probably describing the same constructs, this practice nonetheless results in an uncertainty as to whether the same phenomena is being measured. For example, research examining the benefits of nature on mental wellbeing used in the following synthesis have described 'Nature engagement' (Anggraini & Oktavia, 2024), 'Nature contact' (van den Berg et al., 2018), 'Nature interaction' (Keniger et al., 2013), 'Nature-based recreation' (Lackey et al., 2021), 'Wildland recreation' (Thomsen et al., 2018), 'Nature dose and duration' (Shanahan et al., 2016), 'Green exercise' (Barton & Pretty, 2010), and 'Nature walks' (Bratman et al., 2015). Likewise, 'Nature connectedness' is also referred to as 'Nature relatedness' (Liu et al., 2022; Phuoc et al., 2024). Despite the discrepancies in terminology, a growing body of research demonstrates promising results to psychological and physiological wellbeing through engaging in nature.

5.4.2 Evidence synthesis of the wellbeing benefits of nature

Nature connectedness or relatedness has been shown to increase both hedonic and eudaimonic wellbeing, mood and life satisfaction, and increase life meaning, autonomy, vitality, and feelings of transcendence (Capaldi et al., 2015; Martin et al., 2020; Nisbet et al., 2020; Pritchard et al., 2020; Phuoc et al., 2024). Additionally, nature connectedness increases positive affect including personal growth, and purpose in life (Nisbet et al., 2011). Nesbit and colleagues conclude that nature relatedness and the observed positive affect may be the mechanism of nature's restorative power (Nisbet et al., 2011). This statement is supported by Liu et al. (2022) whose research indicates that nature connectedness is a stronger predictor of mental wellbeing than nature exposure. Health benefits observed through nature engagement include decreased stress and negative affect, increased subjective wellbeing and positive affect (Bratman et al., 2021), decreased anxiety and rumination (Bratman et al., 2015; Lackey et al., 2021), improved hedonic wellbeing and self-transcendence i.e., shifting focus from self to the wider world (Neill et al., 2019), emotional wellbeing, self-esteem, social cohesion, reduced depression and improved perceived quality of life, and increased physical activity and sleep quality (Thomsen et al., 2018; van den Berg et al., 2018).

Franco et al. (2017) describes how the benefits of nature became unlocked through engaging the five senses. Reduction of stress and lower heart rate through viewing nature; the relaxing effects of hearing moving water and birdsong, increased calmness and mood through floral scents, tactile comfort through animal petting, and through taste, or rather inhalation and ingestion of negative air ions, phytoncides and microbiota which show improvements in depression, mood, and increased serotonin levels. A further wellbeing benefit identified in the

literature that derives from nature engagement is that of mindfulness. Several studies suggest that nature engagement can lead to an increase in mindfulness (Thomsen et al., 2018; Anggraini & Oktavia, 2024). Additionally, practising mindfulness-based stress reduction (MBSR) in a natural environment has a greater effect on mental wellbeing outcomes when compared to MBSR practised in indoor environments (Choe et al., 2020). In contrast, other research reveals that the mindfulness-nature relationship occurs in polar opposition and mindfulness enhances the beneficial effects of engaging in nature (Nisbet et al., 2019). Alternatively, mindfulness and connectedness to nature may have a reciprocal relationship with mindful awareness fostering feelings of nature connectedness and nature connectedness increasing mindfulness (Schutte & Malouff, 2018).

Within the research presented in chapter three, mindfulness and mindful experiences were described through passive nature engagement where being alone in the garden allowed one participant to 'communicate' with nature, while for another participant the sound of birdsong was enjoyed which helped them settle into the NBI. Active nature engagement was also described as inducing a state of being in the present moment. The act of carefully choosing colours and arranging flowers to create flower bouquets appeared to facilitate being in a state of 'Flow'. The thesis has already suggested that 'Flow' (Csikszentmihalyi, 2013) and not 'ART' (Kaplan & Kaplan, 1989) appears to be the more prevalent mechanism benefiting the mental wellbeing of NBI service uses. Nature engagement can potentially pull one away from mental torment, negative thoughts and rumination, the so called 'psychological quicksand' (Williams & Penman, 2011) that is our minds. Nature engagement, whether passive such as the enjoyment of listening to nature sounds or active such as the creation of flower bouquets has the power to bring a person into the present moment and into the healthy state of mindfulness or present awareness. In summary, this synthesis demonstrates that there are

various pathways that nature can contribute to a person's mental wellbeing and, understanding how nature connectedness and nature engagement are beneficial to a person's wellbeing, will help build a model of NBIs as a treatment for mental health.

5.5 Nature-based interventions – In search of a model

5.5.1 Evidence-based treatment

The National Institute for Health and Care Excellence (NICE) provide guidelines which are evidence-based recommendations for health and care in England and Wales (NICE, 2025). As an example, to the current evidence-based treatment options for mental health, the NICE guidelines on treating 'less severe depression' include guided self-help, group CBT, group behavioural activation, group mindfulness, interpersonal psychotherapy, psychodynamic psychotherapy, counselling, transcranial magnetic stimulation and electroconvulsive therapy. Pharmacological interventions include selective serotonin reuptake inhibitors (SSRIs) and serotonin and norepinephrine reuptake inhibitors (SNRIs). There is no mention of NBIs as a treatment for mild to moderate depression, therefore, one can assume that NICE does not consider NBIs an evidence-based treatment for depression. The closest recommendation to anything resembling social engagement programmes in the NICE guideline for treating depression is group exercise, which is described as moderate intensity aerobic exercise under trained supervision (NICE, 2022). The NICE guidelines on other mental health diagnoses follow a similar approach to treatment options with no mention of NBIs or community engagement of any sort. The lack of NBIs within NICE guidelines will no doubt be influenced by the lack of definitive explanatory frameworks or models describing nature's mechanisms of effect. There is a demand in the literature for better theoretical understanding

of nature's pathways and mechanisms of impact (Wilke & Davidson, 2021) and it is argued that clinicians will only be able to confidently prescribe NBIs once the evidence for how NBIs treat specific conditions becomes clear (Marx & More, 2022).

Despite the potential risk involved with not prescribing the right treatment, the lack of evidence stance ignores a large evidence base for the efficacy of NBIs for treating mental health disorders (as discussed previously in 'Unlocking the nature cure'). An argument can be made that this may be due to an unwillingness to move away from a medical model. Furthermore, if there is a need for definitive evidence for NBIs mechanism of effect on various mental health diagnoses, then the same evidence should be required for prescribed pharmaceuticals, for instance, SSRIs, which are a NICE evidenced-based pharmacological treatment for depression. The drug is said to work by increasing serotonin through inhibiting presynaptic reuptake of serotonin at the serotonin transporter, referred to as the serotonin hypothesis of depression (Chu & Wadhwa, 2020). However, whilst this has been widely accepted for decades, there is a lack of high-quality evidence supporting a biochemical basis to depression, even despite the vast research effort attempting to support the serotonin hypothesis (Moncrieff et al., 2023). A review conducted by Moncrieff et al. (2023) explored whether the current evidence base supports a role for serotonin in the aetiology of depression. Research methods that produce high quality evidence such as studies of plasma serotonin and metabolites and genetic and gene-stress interaction, all failed to demonstrate an association between markers of serotonin activity and depression. The reviewers conclude that the serotonin theory of depression is not empirically substantiated, and any therapeutic effect experienced from SSRIs cannot be purely based on reuptake inhibition of serotonin. Therefore, other explanations for the effects of antidepressants should be considered, for

instance, that they may work via a placebo effect or through their ability to numb emotions in general (Moncrieff & Cohen, 2006; Jakobsen et al., 2020).

The evidence-base argument could in fact be turned around if the medical model's treatment options were compared to NBIs not through claims of mechanisms of effect, but rather through a risk-benefit analysis. For example, as one participant from a qualitative study on pharmacists' attitudes to social prescribing states "…you don't get side effects from social prescribing." (Rathbone et al., 2024). Pharmaceuticals on the other hand have long lists of side effects attached to them, some of which can be very serious. For instance, side effects associated with SSRIs include nausea, insomnia, drowsiness, headache, decreased sex drive, agitation (Chu & Wadhwa, 2020; National Health Services [NHS], 2020) and exacerbating suicidal ideation (Edinoff et al., 2021). The side effect of suicidal ideation is particularly disturbing when presented alongside evidence from Healy (2006) who suggests that the risk of suicide is around 2.6 times greater when depression is treated with SSRIs compared to a placebo. Furthermore, little is understood of the effect of SSRIs on the developing brain of a young person with depression (Edinoff et al., 2021). In fact, the literature presents two conflicting claims about SSRIs. They either decrease the risk of suicide, or they increase the risk of suicide (Hall, 2006). In the light of SSRIs potential for causing iatrogenic harm, any argument put forward by the medical model of NBIs being unable to offer a robust explanation of the mechanism of effect falls flat, demonstrating that there may be other reasons for the medical model denying NBIs as an efficacious treatment option for mental health problems. Critics of disease-mongering, defined by Moynihan et al. (2002) as 'widening boundaries of treatable illness in order to expand markets for those who profit from treatments', have argued that the large-scale depression awareness campaigns operating across several western countries is a sociocultural shift towards the biomedicalisation of

unhappiness, a shift that is linked to commercial profit of pharmaceutical companies (Liebert & Gavey, 2009). This argument is supported by the fact that pharmaceutical companies invest more money into advertising than they do on research and product development (Blech, 2006; Lexchin, 2018). This critique of evidence-based treatment will conclude with one final point described by Gøtzsche (2014) who states that there is a corruption of scientific evidence about drugs, bribery of doctors, and lies told in drug marketing. All these factors contribute to prescription drugs becoming the third leading cause of death in the United States and Europe after heart disease and cancer (Gøtzsche, 2014).

5.5.2 The medical model and the biopsychosocial model

Currently NBIs are not recommended by NICE as an evidence-based treatment for mental health disorders. One reason for this could be that NBIs are being scrutinised from a medical model perspective. The medical model is a reductionist approach that attributes illness to a single cause located within the body and does not consider the social, psychological and behavioural dimensions of illness within its framework (Wade & Halligan, 2017). The medical model explains illness through one or more physical malfunctions at a lower level of organisation i.e., an infection manifests from parasites, a metabolic disorder comes down to genetics, a psychiatric disorder is an imbalance of neurotransmitters, and a physical disability is a result of neuronal damage (Rocca & Anjum, 2020). Furthermore, the medical model medicalises existential issues and life events categorising them as biomedical issues. For example, introversion or shyness may be defined as social anxiety, bereavement through loss of a loved one may be defined as depression, and childhood trauma may be diagnosed as a psychiatric disorder (Kirkengen & Thornquist, 2013).

To ignore that psychological distress can be the result of social factors above biological factors could result in the medical model extending its influence within specific populations, for example, medicalising distress experienced through neurodiversity, ethnicity, sexual orientation, and identity. For instance, neurodivergent people may experience distress due to hostile behaviour towards brain-based forms of diversity (Chapman, 2021). Queer and gender diverse young people (QGDYP) relate their psychological distress and depression to having their identities dismissed and invalidated (Cowie & Braun, 2022), general discrimination (Almeida et al., 2009), lack of acceptance from family members (Lucassen et al., 2014), and marginalisation in educational environments (DePalma & Atkinson, 2010). Additionally, QGDYP people have reported experiencing suicidal ideation due to not feeling safe or being able to live in a way that affirmed their gender (Cowie & Braun, 2022). Psychological distress from social and societal determinants are also the cause of researchers reporting that Muslims in the US experience greater mental health issues than any other minority group (Tanhan & Young, 2022).

Munetz and Frese (2001) have criticised the medical model for being extremely paternalistic in approach, disregarding the potential for growth while emphasizing illness, weakness, and limitations. Paternalism, although a contested concept is defined as acting on behalf of another person’s best interests without taking that person's will into account, or, acting expressly against their will (Sullivan, 2016). Displays of paternalism were prevalent during the Covid-19 pandemic, for instance, denying an unvaccinated child with organ failure an organ until vaccinated (Navin et al., 2025). The risk of serious illness from Covid-19 in children is low, however, a common serious adverse event from COVID-19 vaccination in young people is myocarditis (Munro et al., 2024). Heart abnormalities persist in 54% of cases after 90 days, which, although described by clinicians as mild (Munro et al., 2024), this does

not consider that the heart has a very limited capacity to regenerate muscle cells, and damage can lead to heart failure (Eschenhagen & Weinberger, 2019). This evidence provides support that the criticism made from Munetz and Frese almost a quarter of a century ago still stands and demonstrates that paternalism is alive and well in health care. Additionally, Munetz and Frese (2001) claim that the medical model has been perceived as stamping out hope by suggesting that biology is destiny resulting in an external locus of control (Frese et al., 2001). A loss of hope can be detrimental to wellbeing. For example, hope represents future beneficial developments, achievement of goals, valued outcomes or a state of being such as finding employment, having a romantic relationship, or gaining a home of your own (Dufault & Martocchio, 1985). Hope is central to an individual's ability to rise to the challenge of re-building and recovery, hope motivates, protects against depression, and reduces the risk of a person giving up (Repper & Perkins, 2003). Acceptance of a mental health disorder can be too daunting in the absence of hope (Repper & Perkins, 2003). Along with a loss of hope, Spaniol et al. (1997) describes three other forms of trauma-based impact that are associated with acquiring a mental health diagnosis. These are loss of a sense of self, loss of a sense of power, and loss of meaning in life. A biopsychosocial approach to mental health addresses the above list of losses. For instance, the recovery model is set around a set of principles that include empowerment (Warner, 2010), recognizing and nurturing a person's abilities, interests and goals, supporting people to regain a place in their communities (Jacob, 2015), and living a satisfying, hopeful, and contributing life (Frese et al., 2001). The biological focused medical model on the other hand has been accused of fostering helplessness and chronicity (Munetz & Frese, 2001).

The use of psychiatric medications has dramatically increased and mental disorders are often considered a disease of the brain resulting from chemical imbalances (Deacon, 2013).

However, not all illnesses have known mechanisms of disease or knowledge of the biological aetiology such as irritable bowel syndrome (Huda, 2021). In these circumstances, the medical model fails to account for a patient's illness in the absence of any physical or biological sign of dysfunction (Rocca & Anjum, 2020). The medical model also fails to explain health through social determinants. To illustrate, recovery from heart surgery in children is dependent on family relationships, and recovery is even affected by pet ownership and animal companions (Ellis, 2012). Despite this criticism, the medical model can be of benefit through reframing conditions as pathology (rather than personal weakness or moral failings) while connecting people to clinical and social services (Knopes, 2025). In the case of the QGDYP population discussed above, where society failed to legitimise their identity, recognise their experiences, perspectives and subsequent distress, the medical model was able to provide validation through diagnosis, acknowledgement that their distress is real, and increase awareness in others of their suffering (Cowie & Braun, 2022). Additionally, the medical model has helped reduce the stigma attached to addiction by revealing addiction to form through faulty neural circuitry where the ability to make decisions and control behaviour has been disrupted (Deacon & McKay, 2015).

One criticism of NBIs is that there are uncertainties regarding the ideal duration and intensity of nature-based activities to improve mental health (Barton & Pretty, 2010). Under the medical model, dose-response modelling is the norm, and, as noble as it is to try to answer the dose-response conundrum, a factor that remains essential under the medical model, its usefulness could be questioned if we situate NBIs within a biopsychosocial model. Researchers have tried to demonstrate the effectiveness of NBIs in comparable ways to those of the medical model, however, the health outcomes of NBIs become apparent over a long period of time and are not as specific as the results gained from some pharmaceuticals

(Sempick et al., 2010). Further to the demands of providing dose-response data, the medical model approach requires the generation of quantifiable health recommendations that include a mechanistic examination of the links between nature and health (Shanahan et al., 2015). This demand is working on the assumption that it is the nature engagement component of NBIs that are providing the health benefits observed and ignores the social aspect and physical activity element. Furthermore, the demand fails to recognise the more abstract benefits of NBIs that have been identified in the research conducted in this thesis. These include skill and knowledge acquisition, creative expression, experiencing responsibility, caring for something or someone, being needed and of value (mattering), contributing to society, enhancing social status, mindfulness or being in a state of 'Flow', and gaining meaning and purpose in life. This takes us back to the concept of dose-response again and leads to the question of whether it is worth attempting to quantify the ideal dose of nature exposure when it is not yet established what it is about nature or NBIs that promote wellbeing. For example, research has argued that it is not nature engagement that acts as the facilitator to wellbeing, rather it is nature connectedness (Richardson et al., 2021). Additionally, Marsh et al. (2018) suggests the mechanism to wellbeing is gaining a healthy lifestyle, while on care farms it is suggested to be employment and the noticeable lack of an 'institutional' aspect that enhances wellbeing (Hassink et al., 2007). Barely et al. (2012) and Harris, (2017) argues it is the social aspects of NBIs that act as the driver towards recovery while nature is merely a backdrop. Sempik and colleagues (2010) suggest that nature is not simply a backdrop for 'green care' and that, although there are health benefits to be gained from passive engagement in nature, everything that is green, they argue, is not 'green care'. Despite the natural environment being the setting where an NBI takes place, there is no apparent therapeutic intent and the natural surrounding does not amount to 'green care' (Sempik et al., 2010).

The biopsychosocial model recognises the interconnectedness of biological, psychological, and social factors in the outcome of health and disease (Vögele, 2015). From a psychological position, the 'person' has a context i.e., their thoughts, emotions, attitudes, expectations and life experiences, along with a temporal context, such as their stage of life and the stage of their illness (Wade & Halligan, 2017). From a social context, a person interacts with the environment and other people and will make observations on behaviours and social roles which they will attach meaning to. The person can then evaluate their quality of life against the measures they deem personally meaningful, such as wealth, personal relationships, or position in society (Wade & Halligan, 2017). Given the complexity of 'the person', under a biopsychosocial model, it should be apparent that measurement becomes near impossible (Wade & Halligan, 2017) and, by situating NBIs within the biopsychosocial model, quantifying, measuring or recommending doses becomes obsolete. The challenge is not one of 'getting better' or being 'cured' that a person with mental health problems must face, but retaining or rebuilding a meaningful and purposeful life (Repper & Perkins, 2003). Furthermore, Repper and Perkins (2003) state that recovery from mental ill health is a continuing journey that involves the gradual reclaiming of social roles and relationships that fill life with meaning.

5.5.3 A dose of responsibility

The theory adopted within the design of the studies presented in the thesis, that of SIT and enhancing identity (specifically the group circumstance hypothesis), and tenets of occupational therapy and MOHO such as engaging people in meaningful activity, have been supported in their claims through (i) evidence discussed in the literature review and (ii) the

results presented through the research conducted in this thesis. In support of the notion of meaningful occupation, the literature describes how NBIs could benefit service users through allowing them to experience feeling valued (Cole & Christie, 2016), feeling useful and engaging in activities that were useful to other people (Elings & Hassink, 2008; Iancu et al., 2014), mattering to other people (de Bruin et al., 2021), having a place and a role (Granerud & Eriksson, 2014), feeling a part of society through 'real work' (Hassink et al., 2010) having the opportunity to help others and contribute to society (Triguero-Mas et al., 2020), and feel a restored purpose in life (Wästberg et al., 2021). In support of SIT concepts nature-based occupation allowed service users to lose their stigmatised identity and gain a normalised identity (Feildhouse, 2003). Identity transformation was experienced through purposeful occupation which was conceptualised as being a recipient of social aid to becoming a provider of social benefits (Triguero-Mas et al., 2020), being a mental health service user to a farm hand (Iancu et al., 2014) and being approached as a worker as opposed to a client (Hassink et al., 2010). Furthermore, through occupation, NBIs can provide service users with the experience of responsibility and gain meaning and purpose in life (Elings & Hassink, 2008; Schreuder et al., 2014). Having responsibility is enjoyed and described as important and meaningful, especially regarding taking care of animals (Hassink et al., 2010; Schreuder et al., 2014; Ellingsen-Dalskau et al., 2016). Through responsibility and the simulation of having a job, some service users progress into employment (Cipriani et al., 2018).

Likewise, the research conducted in this thesis highlighted the importance of identity, social status, being able to help others, and contributing to society. To briefly recap, the theme of 'We rise by lifting others' conceptualised in chapter three identified the importance of being able to help other people and demonstrated the significance to one's psychological wellbeing. Interview extracts revealed that service users felt a sense of happiness, increased self-worth,

and gained a sense of feeling needed and valued. Additionally, chapter four highlighted the significance of being able to carry out a meaningful and purposeful activity that provided for others, with results demonstrating that an altruistic intervention led to an increase in meaning in life, purpose in life, increased self-esteem and mental wellbeing. Furthermore, the data collected from the focus groups revealed how some participants felt an increase in social status and a shift in identity as they experienced being able to contribute to society.

Responsibilisation is a term used to describe the process of shifting responsibility from an authority to an individual (Brown, 2021). Research exploring the effect of responsibilisation in a mental health population observed that didactic responsibilisation, that of instructing people to take accountability for their own health has negative consequences. In the context of the delivery of a mental health service, responsibilisation was experienced by patients as being 'thrust upon them', unsuitable and unwelcome, burdensome, and beyond what patients felt they could achieve (Brown, 2021). In contrast, responsibilisation within a setting outside the mental health service involving contributing to society through community engagement and volunteering schemes provided a sense of accomplishment and pride. The responsibility taken on was profoundly social and allowed the patients to contribute, develop a sense of autonomy and make a difference to the lives of others (Brown, 2021). From a recovery model perspective, mental illness can consume a person's identity and recovery involves redefining identity away from that of being mentally ill (Estroff, 1989). Often, a person with mental health problems finds themselves on the receiving end of helping relationships which can be a dispiriting and devaluing experience (Repper & Perkins, 2003). Alternatively, being able to reciprocate and help others can make one feel valued and worthwhile (Repper & Perkins, 2003). Occupation is one way of achieving this and NBIs should aim to facilitate engagement in meaningful and purposeful roles that provide the experience of responsibility and

providing for others. With the above constructs (mattering, responsibilisation, identity etcetera) having been brought to the forefront, a more appropriate question to ask than dose and duration of nature exposure is that of the required level or 'dose' of responsibility. Considering the evidence above, exposure to responsibility could enhance identity, provide an occupational role that offers a meaningful existence, a life purpose, and facilitates in the process of recovery. Getting this dose right is not simply a matter of assisting in the development of a minimum-dose recommendation, an approach adopted by the medical model. The dose of responsibility needs to be calculated on a case-by-case basis to facilitate positive affect such as personal growth, increased self-esteem, self-worth, and perceived purpose in life, all without overwhelming the service user or exacerbating mental health issues such as anxiety.

5.5.4 Theories and models linking nature to health

A systematic review of the available evidence regarding the mental health benefits of nature engagement generated 51 articles (Lackey et al., 2021). A total of fifteen different theories, frameworks, or models were identified and used to structure the research. However, 30 of these articles did not utilise any existing theoretical frameworks or models in the development of their research. The authors conclude that there is an apparent need to build upon existing theory and develop new theories to explain the nature-health relationship (Lackey et al., 2021). The most frequently cited theory identified in the review and used to explain why nature engagement was beneficial for mental health, was attention restoration theory (ART). A discussion and critique of ART was included in the discussion section of chapter two, however, to briefly reiterate, ART suggests that nature has a restorative effect

since it only commands a low level of 'fascination' or attention which helps people recover from mental fatigue (Kaplan & Kaplan, 1989). In chapter three, however, it was highlighted how nature alone or the processes described in ART were not being utilised as a mechanism for mental wellbeing, rather, it was Csikszentmihalyi's theory of 'Flow' and the seeking of an activity that commanded a high level of attention. The mechanism of effect through 'Flow' is that a high level of attention results in an inability for the mind to wonder towards unpleasant or unwanted thoughts (Csikszentmihalyi, 2013). It was through this process that the NBI service users who participated in this thesis' research were able to experience mental restoration or a relief from mental ill health. Since the suggested wellbeing benefits of nature engagement may rely on having a high level of nature connectedness (as discussed in 'Unlocking the nature cure'), perhaps for mechanisms of ART to be beneficial to a mental health population, one first needs to increase their level of nature connectedness. This proposal would need testing, however, regardless of whether ART is utilised during NBIs or Flow, both pathways should be considered as contributing to the psychological wellbeing benefits experienced during engagement of NBIs.

Current models explaining the pathways that link nature to health typically begin their frameworks with the accessing of greenspace. This aspect covers the distance and amount of green space available in the local area (Lachowycz & Jones 2013), accessibility and location (Lawrence et al., 2019), spending time in green space in general (Bedimo-Rung et al., 2005; Kuo, 2015; Markevych., et al 2017), and frequency of visits and duration (Hartig et al., 2014; Lawrence et al., 2019). Despite research demonstrating that the natural beauty of a place may be one pathway to increasing nature connectedness, only three models consider the quality of the green space (Lachowycz & Jones, 2013; Hartig et al., 2014; Kuo, 2015). Furthermore, only one model, presented by Lachowycz and Jones (2013) highlights the need to include the

mechanisms towards getting people to engage with nature. For instance, people's personal drivers and motivators, their physical activity preferences, personal mobility, and what one enjoys using nature for i.e., bird watching, dog walking, or exercise. Of the mechanisms of effect used in the identified models, the majority of them do not actually describe nature specific mechanisms, and the health benefits are explained through physical exercise and social cohesion (Bedimo-Rung et al., 2005; Lachowycz & Jones, 2013; Hartig et al., 2014; Kuo, 2015; Markevych et al., 2017; Lawrence et al., 2019). Where nature is described as the mechanism towards health and wellbeing, it is done so rather abstractly with little explanation, i.e., air quality, aesthetic pleasure, relaxation, reduction of urban stressors (air, noise, and heat pollution), and relaxation, which, could also come from non-nature specific pursuits such as reading, sports, and craft hobbies. Only the model presented by Kuo (2015) provides the details of nature's mechanism of effect for health and wellbeing. These are exposure to phytoncides, mycobacterium vaccae, negative air irons, and natural sights and sounds.

Individually, the current models fail to offer a complete story of how nature, nature connectedness, nature engagement, nature-based activity, or NBIs which incorporate physical activity and socialisation contribute to the health and wellbeing of people with mental health issues. Collectively, the models do present a more coherent understanding of NBIs and their mechanism of effect, however, the gaps in the models have been made apparent through the findings in the current thesis. If we were to take the mechanisms of effect presented in the current models at face value (nature exposure, physical activity, and socialisation), then the notion of digging a hole in a pleasant natural environment with a group of people, (who you may or may not know), with no purpose to digging the hole other than to get physical exercise, should be experienced as wholly therapeutic. Even through the process of synthesis,

the current models are missing the ‘ingredients’ highlighted in this thesis and identified by integrating models and theories such as SIT, MOHO, Logotherapy and the recovery model. Therefore, a logical next step would be to suggest a practical application for the use of the findings from the current research in the construction of an integrated model of NBIs for mental health.

5.6 An integrated model of NBIs for mental health

An integrated model explaining the pathways of NBIs for the treatment of mental illness should firstly be situated in the biopsychosocial model. This incorporates advances in modern medicine, whilst emphasising that many health conditions remain unexplainable through detecting changes at the cellular or molecular level alone (Rocca & Anjum, 2020). This positioning of NBIs would mean that concepts such as the dose, or frequency of nature contact and duration of nature exposure would be replaced by facets found in the recovery model such as empowerment, emphasising optimism, hope, the regaining of a meaningful life, recognizing and fostering interests and goals, finding productive roles and the development of relationships that provide lives with meaning and purpose. In the development of any new model, drivers and motivators should be essential factors, particularly considering the 47 barriers identified in the scoping review in chapter two. Among the most stated social barriers were fear of socialising, social judgement and mental health stigma. Lack of motivation, lack of confidence, and anxiety were among the top psychological barriers (with the exception of a deterioration in mental health). These barriers could prevent referral, uptake and attendance of NBIs. With this in mind, it is essential to build a model that factors in the need to alleviate the barriers to NBI engagement. Additionally, the model should be informed by the existing theories and models shown to be

relevant and affective through the research conducted within this thesis (SIT, MOHO, and Logotherapy). Finally, the model should provide a summary of the main pathways in which NBIs facilitate people with mental health issues towards recovery. Recovery in this instance refers to the biopsychosocial interpretation as discussed by Repper and Perkins (2003), that recovery involves rebuilding meaningful and purposeful lives.

5.6.1 Biopsychosocial and a recovery model approach

Results from chapter three revealed how the social aspects began as the greatest barrier to NBI attendance. However, with the addition of supported attendance, distraction through activity, time, and the identified coping strategy 'graded exposure', the social elements became the most enjoyed aspect of the NBI. Repper and Perkins (2003) describe a set of tools to aid in the recovery process, not too dissimilar from the coping strategies described in chapter three. These are 'Graded exposure' which involves slowly building up greater exposure to the things that cause anxiety. 'Just visiting' involves making a brief visit to a site to familiarise oneself, 'Time-limited experience' involves trying something for a short period before committing. 'Providing transport', involves facilitating transport to eliminate the anxiety of going somewhere new and finding the location. 'Doing with' involves supported attendance from friends, family or a professional, 'Special groups' involves facilitated introductions with others who have similar difficulties, and 'Mentoring' involves being shown an activity by someone already confident to carry it out. As the biopsychosocial model includes social contexts in the aetiology of mental health, the above tools from the recovery model should be implemented in NBIs. In doing so, the barriers identified in the scoping review; anxiety, lack of confidence and fear of socialising could be reduced.

5.6.2 Social identity theory (SIT)

Integrating elements of SIT into the model has the potential to reduce stigma through enhancing identity as stated in the 'Group circumstance hypothesis': "When a group that defines a person's social identity is enhanced in some way (e.g., by success, high status, or advancement), social identity becomes a beneficial psychological resource and tends to have positive consequences for wellbeing" (Haslam et al. 2018, p.18). Enhancement can be operationalised through activity that allows a service user to feel needed and of value to their society. Furthermore, by rebranding NBIs as community-based initiatives that need volunteers to help their community, service users could lose their 'recipient of social aid' identity and gain a more psychologically empowering 'provider of social aid' identity. Through this form of social engineering, the barriers of 'social judgement' and 'mental health stigma' could be reduced, and service users may not have to engage in any social creativity, for instance, pretending to their acquaintances that the NBI is a gardening apprenticeship.

5.6.3 Logotherapy

Experiencing meaningful and purposeful activity was one of the aims behind the altruistic intervention (along with enhancing social identity). However, it was revealed in the focus groups that some participants did not find contributing towards the wellbeing of an elderly population personally meaningful. It was beyond the scope of the altruistic intervention study design to carry out personally meaningful activities for each individual participant, but it does highlight the importance of 'meaning salience' (Hooker, Masters, & Park, 2018). Therefore, Logotherapy should be integrated within the development of a new model. Logotherapy is a

meaning centred therapy which helps individuals find meaning in life through three pathways. (i) Assisting people to experience something they consider valuable, such as meaningful work, (ii) facilitate experiencing the meaning of love through social interactions involving doing something valuable for others, (iii) challenging any negative attitudes towards life by activating the 'will to meaning' through Socratic dialogue (asking questions that prompt reflection on discovering meaning and purpose in life) (Sun et al., 2022; Shaygan et al., 2023). Research suggests that Logotherapy can help people find meaning and purpose in life, improve quality of life and reduce the symptoms of depression, hopelessness, and suicidal ideation (Shaygan et al., 2023). By directing service users towards activities that are purposeful and personally meaningful, the activities could become a driver and motivating factor to continued attendance whereby reducing the 'lack of motivation' barrier.

5.6.4 Model of human occupation (MOHO)

Having mental health issues has been described as forming a barrier to occupational participation, and subsequently to recovery. However, people who have experienced occupational pursuits in an environment where MOHO guides practice have reported feeling a sense of hope, social inclusion and recovery (Hitchman, 2010). MOHO is a client-centred, occupation-focused model that focuses on understanding what motivates an individual to action (Taylor, 2017). MOHO should be used in an integrated model on NBIs for mental health as it addresses volition, or how occupation is motivated, but more specifically, how to engage and motivate a person who is facing impairments or ill health. For many therapists, volition can be the starting point for creating change. Through tapping into a client's personal interests, what activities they find value in pursuing, and then assessing what the client feels

they can or cannot accomplish, a therapist can provide an activity that motivates (Taylor, 2017). Additionally, MOHO uses the environment as another pathway to initiate change. For instance, an aspect of the environment could be manipulated to offer a specific expectation or provide a unique opportunity (such as the altruism carried out in chapter four). The influence of person-environment interactions can result in new thinking patterns, altered perceptions of the self, and lead to change (Taylor, 2017). MOHO can be implemented to guarantee fit between the client and their environment and support their engagement in occupations that provide meaning, purpose, demonstrate competence, provide a sense of occupational identity, and support physical and psychological wellbeing (Taylor, 2017).

5.6.5 Integrated model of NBIs for mental health

Situated in the biopsychosocial model incorporating The Recovery Model, Logotherapy, SIT, and MOHO, the integrated model of NBIs (Figure 8) contains three circles, each representing a self-perpetuating loop i.e., increasing meaning and purpose in life enhances social identity, enhanced social identity increases meaning and purpose in life etcetera. The pathways listed inside each circle are not exhaustive, for example there are other mechanisms discussed within this chapter that potentially increase nature connectedness such as the overview effect. Additionally, SIT could also influence motivation to engage as well as enhance meaning and purpose in life. The model presents theory-based pathways to increasing referral, uptake and attendance of NBIs whilst suggesting mechanisms that could increase nature connectedness and unlock the nature cure. Health benefits and outcomes are only referenced within the model itself; however, a more detailed description of the integrated model of NBIs' health benefits and outcomes can be found in Table 11.

Figure 8. The integrated model of NBIs for mental health.

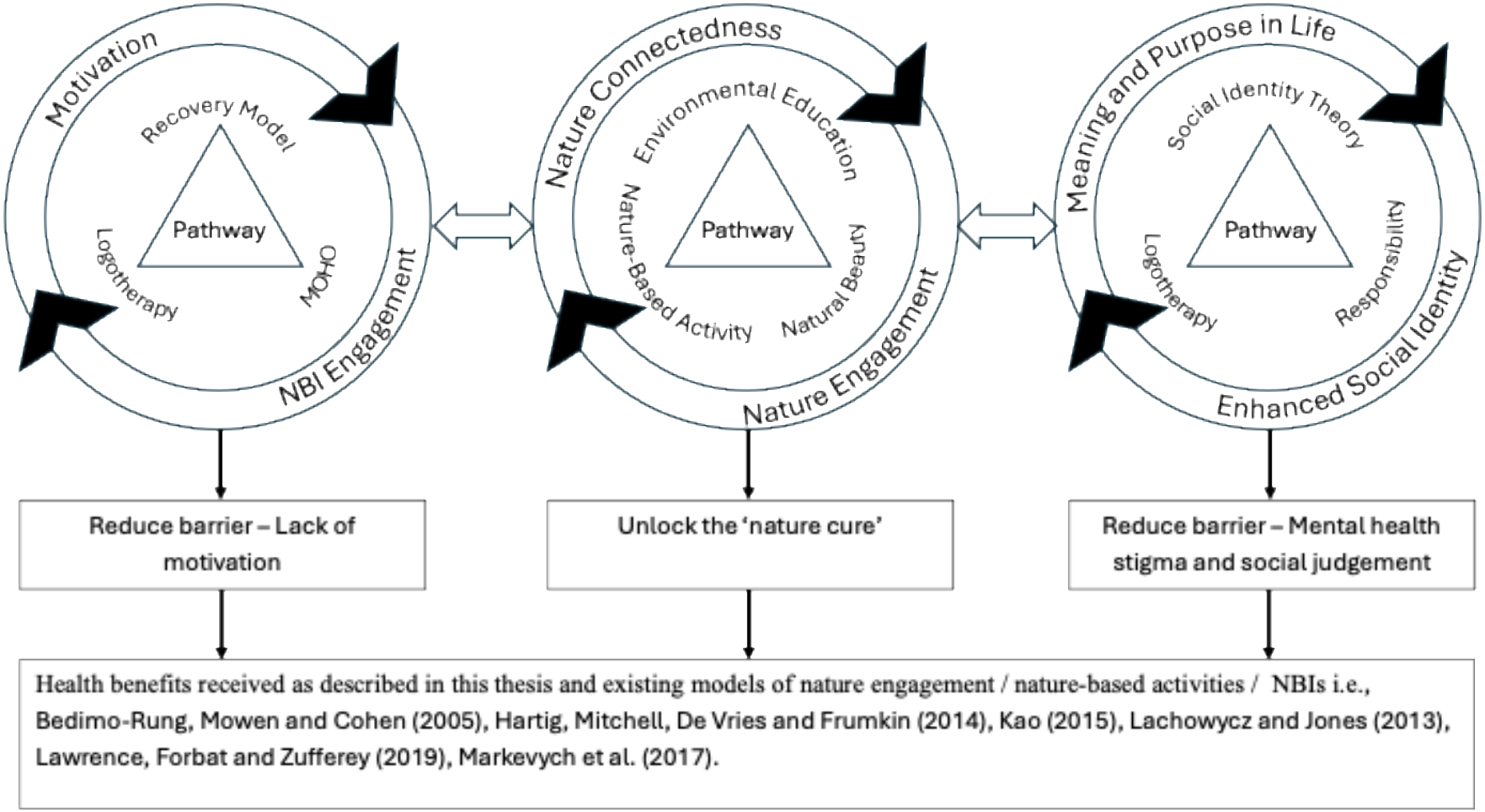

Figure 8 shows the theories that make up the integrated model of NBIs and how they create pathways to motivation, engagement, nature connectedness, meaning and purpose in life, and enhanced social identity.

Table 11. Mechanisms of nature and NBIs positive affect and health benefits

Model Author/s	Year	Mechanisms of Positive Effect	Health Outcomes
Bedimo-Rung, Mowen, & Cohen.	2005	Physical activity, social benefits.	None listed.
Hartig, Mitchell, De Vries, & Frumkin.	2014	Air quality, physical activity, social contacts, stress reduction.	Increased subjective wellbeing, stress reduction, cognitive and physiological restoration
Kuo.	2015	Phytoncides, negative air ions, mycobacterium vaccae, environmental biodiversity, reduced air pollution, exposure to natural sights and sounds, physical activity, social contact.	Relaxation, attention restoration, improved immune function, decreased anxiety, ADHD, cardiovascular disease, depression, respiratory disease.
Lachowycz, & Jones.	2013	None listed.	Increased vitamin D, lower blood pressure, reduced heart disease, improved mental wellbeing, recovery from stress and attention fatigue.
Lawrence, Forbat, & Zufferey.	2019	Physical activity, social contact.	Stress and fatigue reduction, improved cognition.
Markevych, Schoierer, Hartig, Chudnovsky, Hystad, Dzhambov, ... & Fuertes.	2017	Attention restoration, reduced exposure to environmental stressors i.e., air, noise, and heat pollution.	Stress reduction, improved self-perceived health, lower BMI, reduced depression, cardiovascular, and all cause mortality.
Discussed within the current Thesis	2025	Identity transformation, personally meaningful activity (valued occupation), mattering (feeling needed and valued), responsibilisation, contribution to society, Flow (mindfulness).	Enhance social identity, reduced stigma, increased life meaning and purpose, increased self-worth and self-esteem, empowerment, Hope.

Table 11 shows the mechanisms of positive affect through nature engagement and NBIs that are possible through the integrated model of NBIs.

Chapter 6. The integrated model of NBI - Implications

6.1 Critical discussion of the proposed integrated model

Although the development of the NBI model is essentially the end product of the thesis created through the accumulation of the theory discussed, and the findings described across multiple studies, it is by no means the end. Rather, the proposal for a new model is merely the beginning. It would be expected that the model would be open to criticism and change through researcher collaboration. For instance, this thesis has discussed the importance of autonomy within the findings disclosed in chapter three, which, was highlighted as being an integral part of NBIs from referral to attendance and the activities undertaken. Additionally, self-determination theory (Ryan & Deci, 2000) discusses the importance of autonomy as one of the three basic psychological needs. However, the NBI model does not specifically express the concept of autonomy, rather it is implied through situating the model within a biopsychosocial and recovery model approach. Furthermore, this model currently provides the theory for change, however, it only operationalises the theory in broad terms, for instance, the model helps to operationalise the reduction of stigma, an objective of mental health policy (The World Health Organisation [WHO], 2024), through the tenets described in SIT i.e., through the construction of an enhanced social status. The model does not provide the NBI practitioner with a step-by-step method for enhancing social identity nor does it equip the practitioner with the necessary tools. To implement this model in a practical capacity there needs to be a manual or workbook developed to operationalise the components within the model and guide the practitioner. To illustrate, therapists using the MANTRa workbook to guide treatment in patients with anorexia described the workbook as a '*treasure trove of*

possibilities and ideas' and enjoyed the flexibility to choose pathways that best suited the patient (Zeiler et al., 2025).

In an environment where the NHS is aiming for streamlining the health sector, reducing the burden on staff and waiting times, the proposed model supports the NHS movement to the extent that it is supporting the shift of treatment from a clinical context to a community context (The National Health Service [NHS], 2025). However, the proposed model commands a high demand intervention in that it is very person-centred and far from the streamlined approach or digital context the NHS is aiming for. Individual differences including motivations, goals, desired knowledge and skill sets, along with the provision of personally meaningful activities results in a very hands-on approach for organisers and staff of NBIs. Therefore, additional training will be required to equip NBI staff with the theory and techniques described by SIT, Logotherapy and MOHO. This model extends the opinion that NBI staff need to be fluent in the language of health care and the language of nature (Bloomfield, 2017; Tambayah et al., 2022), by the addition of knowledge of specific psychological processes and occupational therapy concepts. Despite the high demands this model places on resources, it may produce superior results in comparison to streamlined services, such as online CBT, since the online delivery method has higher dropout rates (up to 34.2%) compared to face-to-face therapies (25.1%) (Vöhringer et al., 2020). This could in part be due to standardised programmes not meeting individual needs (Miller & Ronis, 2026). For example, online interventions are structured to address core symptoms of target disorders with minimal consideration of extraneous factors (Martin et al., 2011), they lack transferability and are often overly reductive (Cook et al., 2017; Patalay & Fried, 2021), which may result in individuals not receiving appropriate treatment (Miller & Ronis, 2026).

6.2 The integrated model of NBI - Future research

After developing the NBI model, the next steps are to transform it from a conceptual framework to an actionable tool for improving mental health outcomes. This is a complex process involving the shift from theory to evidence-based research, to empirical validation, to real-world application. As stated above, there needs to be a manual or workbook created that outlines how to apply the theory to ensure consistency and replicability in treatment. Furthermore, assessment tools such as specific Patient Reported Outcome Measures (PROMs) need to be developed or adapted to create relevant questionnaires or scales to test the models' components. The development of these tools (the workbook and assessments) would most likely be a collaborative task with input from psychologists and occupational therapists. Next, the theoretical constructs within the model need to be tested, i.e., the self-perpetuating loops, one concept at a time using the suggested pathways, for instance, increasing NBI engagement and motivation to attend through the use of Logotherapy and/or MOHO. Additionally, research will need to be conducted on how to train NBI staff in the delivery of the proposed model and whether any additional specialist staff need to make up the team, i.e., a dedicated occupational therapist already informed in MOHO practices. Testing the models' components should take the form of small pilot tests to begin with to identify any issues or barriers, assess the feasibility of the model and examine the initial validity in a real-world setting before a wider rollout. Further empirical research to follow could include longitudinal studies, observational studies and Randomized Controlled Trials.

6.3 The integrated model of NBI – A conceptual change

The proposed NBI model is grounded in evidenced-based psychological theory, meaning-centred psychotherapy, and occupational therapy practices. This is far removed from the criticised theory of attention restoration theory (ART), which is the most frequently cited theory explaining why nature engagement is beneficial for mental health (Lackey et al., 2021). ART has been subject to various criticisms, for instance, uncertainty regarding which aspects of attention may be affected by nature exposure (Ohly et al., 2016), no empirical support of nature's ability to innately hold attention (Neilson et al., 2019), little support for restoration deriving from an evolutionary adaptive response (Joye et al., 2018), and no attention restoration effects found in a sample of older adults (Cassarino et al., 2019). The mechanisms of how ART work become further blurred when considering research that shows farmers have higher levels of mental ill-health than non-farmers, a statistic that remains constant across the UK (Hounsome et al., 2012), Norway (Sanne et al., 2004), Canada (Roy et al., 2014), Australia (Judd et al., 2006), France (Truchot et al., 2018), and Finland (Saarni et al., 2008). ART tries to explain this phenomenon through the occupational, cognitive, and emotional stressors experienced by farmers limiting the restorative potential of natural surroundings (Morris & Morris, 2026). However, if ART suggests that a person's high stress levels limit the restorative effects of nature, then this begs the question of whether ART can have any significant effect on people suffering from PTSD, depression, anxiety, rumination, bereavement or issues resulting from physical ill-health such as chronic pain. It could be the case that other mechanisms are in fact responsible for the observed positive affect from nature exposure. For example, Bettmann et al. (2021) demonstrated that nature exposure has a positive effect on veterans suffering from PTSD. However, the nature exposure utilised in the study consisted of one or more activities including hiking, cycling or rock climbing. All these activities would have involved socialisation, physical exercise and a high level of attention to undertake them resulting in the uncertainty of whether ART played any part in

the observed therapeutic effects. Unlike ART, the proposed NBI model goes beyond ART's rather abstract 'soft fascination' explanation and considers nature engagement as one small component of a nature-based intervention. The NBI model acknowledges NBIs as an activity-based (or occupational-based) intervention that is embedded in social processes and therefore these constructs are considered alongside nature-engagement. This conceptual change, with the addition of a working manual and empirical research would have the potential to provide policy makers with an evidence-based, comprehensive model that operationalises the therapeutic mechanisms that make up NBIs. As a mental health intervention, it would outline the step-by-step actions that NBI staff should follow to implement a structured and standardised mental health service.

6.4 The integrated model of NBI - Policy and practice

The proposed model has the potential to influence policy makers by shifting the focus from an economic position (i.e., the NHS aim of reducing burden and streamlining health services (NHS, 2025), to an evidenced-based human-centred approach that prioritises the needs and wellbeing of individuals in the design of health care services. The proposed model, when implemented in a research capacity, could lead to an evidence-based intervention that would help demonstrate people's cognitive biases, behavioural drivers (such as what motivates them to action), and highlight the mechanisms for change and positive affect. Policies designed using the NBI model could ensure that NBIs foster a culture of excellence, provide consistency in their services, the necessary environmental opportunities, and structure how the services are provided.

The NBI model can affect policy through transitioning away from a purely biomedical treatment towards a social model of care. The NBI model fits within the NHS 10-year plan through shifting treatment from institutional, hospital-based care to a community-based set-up (NHS, 2025). The model allows for autonomy and choice through its logotherapy and MOHO stance with the focus on 'volition' and 'will to meaning' (Frankl, 1959). The meaningful occupational-based focus addresses social determinants such as lack of education, training, skill sets and employment. Furthermore, the proposed model aligns with the NHS aim of preventing sickness rather than diagnosing and treating sickness (NHS, 2025). For example, using NBIs as an early intervention in mental health treatment could connect those in an 'existential crisis' (frankl, 1959), towards finding meaningful occupation, life purpose, physical exercise, increased nature connectedness and skill development for future employment. The proposed model also aligns with current health policy by aiming to reduce stigma through the integration of SIT.

Within the National Health Service's 10-year health plan for England (NHS, 2025) the current state of the health service is described as being in a 'critical condition' and the NHS must reimagine its services embracing transformational change to survive. The NHS proposes to reinvent itself through three radical shifts: i) from hospital-based treatment to community-based treatment, ii) from analogue to digital embracing the latest technologies including AI, iii) move away from simply diagnosing and treating sickness to a model that predicts and prevents ill health (NHS, 2025). The NHS describes itself as hospital-centric and detached from communities. It has identified a need to treat more people locally in their own homes or neighbourhoods and shift health care from hospital to community. The NHS propose a 'Neighbourhood Health Service' that will focus on the new principle of preventative care. The service will maintain the core principles and values of the NHS but integrate a wider

network of technology, life sciences, local councils, civil society and third sector organisations, working in partnership to improve the nation's health, help get people back into work, and unlock broader economic benefits for the UK (NHS, 2025).

One major shift, that of moving focus from diagnosis and treatment to sickness prevention has been operationalised in the 10-year plan. The 'create a healthier country' aim will be realised through delivering on a new Tabacco and vapes bill, tackling harmful alcohol consumption, and ending the obesity crisis. Along with these targets, the NHS proposes to introduce mandatory health food sales, ensuring all schools provide nutritious food. Furthermore, the NHS aim to create a movement that encourages and incentivises citizens to make healthier lifestyle choices motivating a population into regular physical activity (NHS, 2025). Additionally, there is the goal of creating a new genomics population health service to be used in preventative care enabling early identification and intervention for individuals at high risk of developing common diseases (NHS, 2025). Despite the huge push for preventative care, there is little description in the 10-year plan towards the early detection or prevention of mental health sickness. The plan aims to expand mental health support in schools and colleges and provide mental health 'Hubs' for children and young people, however, this has not been operationalised in the same way as the preventative care for physical health (i.e., tackling obesity, diet, smoking/vaping etcetera). This could be due to a lack of research, discussion or understanding on what is causing the mental health crisis.

The NBI model proposed has addressed a number of components that could be contributing to the mental health crisis such as a lack of nature connectedness, a lack of social contacts and opportunities for socialising (one possible oversight or deficit in the NHS aim of moving

care into a digital sphere). The model also considers enhancing social identity, meaningful occupation, life purpose, existential mattering (being needed and of value), responsibilisation and reciprocity in the context of providing for others. The NBI model supports the NHS 10-year plan through the acknowledgement of employment as part of staying healthy. For example, the plan aims to join up support from across work and skills systems to help people find and stay in employment. A key component of the NBI model is to locate a person's meaning in life in an occupational context and provide the skills, training and necessary environment towards future goal attainment. In this manner, the NBI model has the potential to form part of the suggested health and growth accelerator model proposed by the NHS. The health and growth accelerator model will integrate health and employment support, prevent long-term sickness absence and reduce the burden on doctors by making use of other professionals that could support patients' return to employment (Department of health and social care (2026). Additionally, the NHS also aim to transform NICE by delegating a new role to identify outdated therapies that should be removed from the NHS in order to free up resources for investment in more effective ones (NHS, 2025). As part of this aim (once manualised), the NBI model could be added to NICE guidelines as part of the integrated health and employment support plan or, as an early treatment option to prevent mental illness becoming acute. This move could potentially reduce the need for other services such as counselling, CBT, or pharmacological treatments.

The Improving Access to Psychological Therapies (IAPT) manual states that psychological interventions should be evidence-based and led by NICE guidelines (IAPT, 2018 / 2023). As chapter five highlighted, NBIs are not currently listed by NICE as an evidence-based intervention. This could be because there are currently no satisfactory models with working

manuals guiding the delivery of NBIs. With the realisation of all the steps discussed above, the proposed NBI model could jump start the process towards validation by NICE.

6.5 Conclusion

The results of the research conducted in this thesis have been applied in a practical capacity through the suggestion of a new integrated model of NBIs for mental health. In developing a new model, the statement by Sempik et al. (2010) should be considered, i.e., that 'not everything green is green care'. Psychosocial barriers need to be reduced, motivation to attend needs to be increased, and pathways to enhance nature connectedness should be addressed. Additionally, activities presented within a NBI should be personally meaningful, purposeful and have the potential to empower, enhance social identities and reduce stigma. Akin to Sempik and colleagues, this thesis has highlighted that NBIs are far more complex than nature exposure in a vacuum and the measuring of nature exposure through dose or duration is unrealistic and impractical. Furthermore, the thesis argues that NBIs should be situated in a biopsychosocial model to incorporate both biological and social explanations of health.

The thesis is the first to consider utilising SIT to confront the social barriers and enhance the wellbeing benefits of engaging in NBIs. It questions established theories such as the biophilia hypothesis and attention restoration theory (ART) and provides evidence that other processes may be at play, especially in light of the compatibility criteria suggested in ART not being met through fear of socialisation. The theories described in this research (SIT, MOHO, Logotherapy) are well established, however, the suggestion of integrating these theories into

a model of NBIs for mental health is novel and therefore contributes to the construction of a more comprehensive model than those currently in publication.

The strengths in this research lie in the methods. The securing of a volunteer position at the charity Trust Links allowed the researcher to gain access to a population that would have been otherwise difficult to interview. Through comparing the interview data to observations and conversations recorded in a research diary kept throughout the volunteering period, an increased level of confidence in both the qualitative and quantitative data was assured. The method of triangulation in chapter four enhanced the reliability of the data further. The research argued strongly for the importance of meaning salience, however, delegating a personally meaningful activity to each Trust Links member was not feasible given time and resource restrictions. Although the results showed an increase in MIL, PIL, MWB and SE, it would be expected that these results would be increased further if each Trust Links member carried out a personally meaningful activity. Future research should aim to test the integrated model in the delivery of NBIs. Meaningful activity needs to be explored on a 'meaning salience' basis, to test its effectiveness at increasing motivation to accept referral and maintain attendance. The suggested self-perpetuating loop theories also need testing, for instance, whether increasing meaning and purpose in life enhances social identity, and whether enhanced social identity increases meaning and purpose in life.

Dr James Fleming, a founder of the social prescribing movement, reflected on why he prescribed anti-depressants to a patient whose source of depression was unemployment. Fleming questioned; in these circumstances, why he wasn't assisting the patient to gain employment. It was from this position that Fleming shook up a system that provided only

biomedical solutions (Steadman et al., 2017). In the same manner it is hoped in some small way the research presented within this thesis will rock the system again through the notion that any wellbeing benefits suggested to be found in nature may first need unlocking.

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Appendix A – Ethical Approval Confirmation Letters

University of Essex ERAMS

10/08/2023

Mr Mark Burrell

Sport, Rehabilitation, and Exercise Sciences

University of Essex

Dear Mark,

Ethics Committee Decision

Application: ETH2223-2330

I am pleased to inform you that the research proposal entitled "Gardening-based interventions for adults with mental health problems: A qualitative study of the psychosocial barriers to referral, uptake, and attendance." has been reviewed on behalf of the Ethics Sub Committee 2, and, based on the information provided, it has been awarded a favourable opinion.

The application was awarded a favourable opinion subject to the following conditions:

Extensions and Amendments:

If you propose to introduce an amendment to the research after approval or extend the duration of the study, an amendment should be submitted in ERAMS for further approval in advance of the expiry date listed in the ethics application form. Please note that it is not possible to make any amendments, including extending the duration of the study, once the expiry date has passed.

Covid-19:

Please note that the current Government guidelines in relation to Covid-19 must be adhered to and are subject to change and it is your responsibility to keep yourself informed and bear in mind the possibility of change when planning your research. You will be kept informed if there are any changes in the University guidelines.

Yours sincerely,

Aleksandra Birn-Jeffery

Ethics ETH2223-2330: Mr Mark Burrell

University of Essex ERAMS

21/12/2023

Mr Mark Burrell

Sport, Rehabilitation, and Exercise Sciences

University of Essex

Dear Mark,

Ethics Committee Decision

Application: ETH2324-0595

I am pleased to inform you that the research proposal entitled "Gardening-based interventions for adults with mental health problems: A qualitative study of the psychosocial barriers to referral, uptake, and attendance." has been reviewed on behalf of the Ethics Sub Committee 2, and, based on the information provided, it has been awarded a favourable opinion.

The application was awarded a favourable opinion subject to the following conditions:

Extensions and Amendments:

If you propose to introduce an amendment to the research after approval or extend the duration of the study, an amendment should be submitted in ERAMS for further approval in advance of the expiry date listed in the ethics application form. Please note that it is not possible to make any amendments, including extending the duration of the study, once the expiry date has passed.

Covid-19:

Please note that the current Government guidelines in relation to Covid-19 must be adhered to and are subject to change and it is your responsibility to keep yourself informed and bear in mind the possibility of change when planning your research. You will be kept informed if there are any changes in the University guidelines.

Yours sincerely,

Aleksandra Birn-Jeffery

Ethics ETH2324-0595: Mr Mark Burrell

University of Essex ERAMS

18/06/2024

Mr Mark Burrell

Sport, Rehabilitation, and Exercise Sciences

University of Essex

Dear Mark,

Ethics Committee Decision

Application: ETH2324-1281

I am pleased to inform you that the research proposal entitled "The effects of increasing perceived meaning and purpose behind the activities presented within a nature-based mental health intervention for adults." has been reviewed on behalf of the Ethics Sub Committee 2, and, based on the information provided, it has been awarded a favourable opinion.

The application was awarded a favourable opinion subject to the following conditions:

Extensions and Amendments:

If you propose to introduce an amendment to the research after approval or extend the duration of the study, an amendment should be submitted in ERAMS for further approval in advance of the expiry date listed in the ethics application form. Please note that it is not possible to make any amendments, including extending the duration of the study, once the expiry date has passed.

Covid-19:

Please note that the current Government guidelines in relation to Covid-19 must be adhered to and are subject to change and it is your responsibility to keep yourself informed and bear in mind the possibility of change when planning your research. You will be kept informed if there are any changes in the University guidelines.

Yours sincerely,

Izzie Easton

Ethics ETH2324-1281: Mr Mark Burrell

Appendix B – Qualitative Study Participant Information Sheet

Title of study

Gardening as a nature-based intervention for adults with mental health problems: A qualitative study of the social barriers to referral, uptake, and attendance.

Invitation

My name is Mark Burrell and I am a PhD student in the School of Sport, Rehabilitation and Exercise Science at the University of Essex. I would like to invite you to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and ask the University of Essex researchers if you have any questions. Participation in this research is voluntary.

Purpose of the study

Research demonstrates that for some people social engagement within nature-based mental health interventions are the most enjoyed aspect, however, other research demonstrates that social engagement can be the least enjoyed aspect. This research project aims to explore how you have experienced the social elements of attending a gardening intervention for mental health. The information collected could be useful in helping facilitators of gardening-based mental health interventions understand any social barriers affecting referral, uptake and attendance and address any described social issues within the delivery of their services.

Do I have to take part?

Participation is voluntary and you do not have to take part in this research. If you are interested in taking part then you must fit the inclusion criteria of being aged between 18 and 65 and be attending a gardening programme for mental health. You will also need to provide your consent to take part in a one-to-one interview. You can decline to answer any of the questions in the interview. If you decide that you do not want to continue participating in the research project before or during the interview, or before interview data is transcribed and anonymised, you can withdraw your consent and the answers you have given. After transcription and anonymisation of interview data is complete, it will not be possible to withdraw your data as all responses will be anonymous. If you do change your mind and decide to withdraw from this research, please contact the research team using the contact details at the end of this information sheet and quote your participant ID number which you will create on the consent form.

What will participation involve?

You will be asked to take part in a one-to-one interview with the researcher at the garden where you work on your usual day of attendance. The interview will involve a conversation around a set of questions asking you about the social aspects of participating in the gardening programme, your opinions of society's attitudes towards mental health, and aspects concerning stigma. You do not have to answer all the questions and you may decline to answer any questions you do not feel comfortable with. The interview is estimated to last approximately 45 minutes and will be recorded using a digital recording device to enable the researcher to transcribe the interview. The research does not require any data that will identify you and a pseudonym will be created for the written transcript to increase anonymity.

An example interview question is: *Can you describe how you felt about meeting new people when you first joined the gardening programme?*

What are the possible risks of taking part?

Participating in this research is not intended to cause any psychological discomfort. The interview explores your experiences and opinions of social elements around the mental health intervention, gardening, stigma, and mental health. You do not have to answer any question you do not feel comfortable with and you may stop the interview at any time. Withdrawal will not affect your participation at the gardening programme and you do not have to give a reason for withdrawing. At the end of the interview, there will be a debriefing to reiterate what the research was about, a chance for you to ask questions, and the contact details of mental health charities will be made available.

What are the possible benefits of taking part?

There are no personal benefits gained by taking part other than to help advance knowledge through research. Your participation will help to provide evidence of any existing social barriers to participation in gardening programmes for mental health. The information collected could inform facilitators and help design user-friendly programmes in the future.

Will my information be kept confidential?

The data collected will be anonymous and only made accessible to the researcher and research supervisors via a secure password protected login. The interviews will be transcribed and any identifying information within will be removed. All participants will be given a pseudonym. Audio files and transcripts will be securely stored on 'Box', a cloud storage space used by the University of

Essex following the General Data Protection Regulation (GDPR) guidelines. Audio files will be destroyed after interviews have been transcribed. Consent data, audio files and transcripts will be stored in separate folders to ensure that they cannot be matched. Upon completion of the project, the anonymised transcripts will be published in a suitable research data repository. After ten years the interview transcripts and consent data will be destroyed.

What is the legal basis for using the data and who is the Data Controller?

The legal basis for using the data is participants informed consent. The Data Controller is the University of Essex Information Assurance Manager (dpo@essex.ac.uk).

What will happen to the results of the research project?

The results collected will be analysed to identify themes across the entire data set and will be written up as part of a university thesis. The thesis as a whole could be published in the future, or the data analysed could be used and published in other formats such as in academic journals at conferences, or a chapter in a book. Direct quotes may be used from the interview; however, no information will be reproduced that would enable the reader to identify you. The anonymised data will also be published in a suitable research data repository to support future research. If you wish to receive a summary of the research findings, please contact the principal researcher using the contact details provided below.

Who has reviewed the project?

This project has been reviewed and approved by the University of Essex Ethics Sub Committee 2.

Concerns and complaints

If you have any concerns about any aspect of the study or have a complaint, in the first instance please contact the principal researcher Mark Burrell, using the contact details below. If are still concerned, you think your complaint has not been addressed to your satisfaction, or you feel that you cannot approach the principal researcher, please contact the lead supervisor of the research responsible for this project, Dr Carly Wood. If you are still not satisfied, please contact the University's Research Governance and Planning Manager, Sarah Manning-Press (e-mail sarahm@essex.ac.uk). Please include the ERAMS reference which can be found at the foot of this page.

Research Team Members

The details of the team involved in this research project are:

Mark Burrell; Principal researcher and PhD candidate at the School of Sport, Rehabilitation and Exercise Sciences, University of Essex. Email mb22573@essex.ac.uk

Dr Carly Wood; Lead supervisor and lecturer in Sport and Exercise Science; School of Sport, Rehabilitation and Exercise Sciences, University of Essex. Email: cjwood@essex.ac.uk

Dr Jo Barton; Co-supervisor and Reader in Sports and Exercise Science; School of Sport, Rehabilitation and Exercise Sciences, University of Essex. Email: jobarton@essex.ac.uk

Professor Gina Reinhardt; Co-supervisor and Lecturer in the Department of Government, University of Essex. Email: gina.reinhardt@essex.ac.uk

Thank you for taking time to read this information sheet and for your interest in contributing to help us understand the social aspects of taking part in a nature-based mental health programme. Talking about mental health related issues can be a challenge and may cause distress. If you need to talk to someone please be assured that there are people very willing to help.

The Samaritans. Phone 116 123 open 24 hours or email jo@samaritans.org (please note it can take several days for an email reply).

NHS advice and helpline for physical and mental health. Phone: 111 open 24 hours

Mind, Uk's largest mental health charity Offers advice on mental health and where to get help in your area. Helpline: 0300 123 3393 open 9am – 6pm Monday to Friday.

Appendix C – Qualitative Study Consent Form for Interview Participants

Project Title: Gardening as a nature-based intervention for adults with mental health problems: A qualitative study of the social barriers to referral, uptake, and attendance.

Research Team: Mark Burrell, Dr Carly Wood, Dr Jo Barton, Professor Gina Reinhardt.

To take part in the survey you must give consent. Please read the following statements, and if you agree with them and feel happy to participate please tick the check box at the bottom.

I confirm that:

1. I have read and understood the information about the research study, as provided in the participant information sheet. ☐
2. I have had an opportunity to consider the information, ask questions and have had these questions answered satisfactorily. ☐
3. I understand that my participation is voluntary, that I am free to withdraw my consent, and that if I decide to withdraw, I do not need to give reasons, and that I will not be penalised, or asked why I have withdrawn. ☐
4. I understand that if I withdraw my consent after the submission of the survey, the data cannot be withdrawn because it is anonymous. ☐
5. I understand that my fully anonymised data may be used for research publications, book chapters, may be presented at conferences, and will be used to inform future research. ☐
6. I give permission for the anonymised data to be deposited in a suitable Research Data Repository so that they will be available for future research and learning activities. ☐
7. I understand and agree to the storage, access, and destruction of my data, as outlined in the Participation Information Sheet. ☐
8. I agree to take part in the above research project. ☐

Appendix D – Interview schedule for Trust Links service users

Introduction

Welcome the participant, introduce yourself and your project.

Attend to the preliminary ethical requirements: informed consent, right to leave at any time, anonymised data kept secure, explain why the interview needs to be recorded.

Warm-up Question/s to build a relationship and ease participants into the interview

Discuss what activities take place in the garden this time of year / ask how long they have attended the programme / ask if they have any favourite activities.

Main Body of Interview – Theme 1: Support

- I would like to know if you had anyone to accompany you on the first day or subsequent days of Thrive / Trust Links and how did having support help you to attend?

Follow up: How many sessions did you have support to attend for?

Follow up: What would you have done if there was no one to support you coming?

Follow up: How did you find the confidence to come on your own?

- (If applicable) Can you tell me how well you got on with your support worker?

Follow up: Can you tell me whether this relationship is important to attendance?

Follow up: Would you have liked a support worker and do you think this would have helped you in anyway?

- Can you describe how you felt about meeting new people when you first joined Thrive / Trust Links?

Follow up: Did the support you had help you to meet new people? (If participant had support)

Follow up: How did you manage to cope with this? (if participant felt anxious)

Follow up: What made meeting new people enjoyable? (if participant felt at ease)

Main Body of Interview – Theme 2: Relationships

- I would like to learn how well people get on with each other at Thrive / Trust Links. Can you describe one good relationship you've had and one bad relationship? This could be with a volunteer, staff member, or other garden members / garden clients.

Follow up: Have you made any friends here and how would you feel if they left the garden?

Follow up: Has there ever been a time someone here upset you and can you explain what happened?

Follow up: Has there ever been a person here who made you feel like not coming back and what happened to make you feel this way?

Follow up: Have you ever seen arguments happen at Thrive / Trust Links and if so can you describe what happened?

- I am wondering whether you have ever experienced feeling isolated, rejected, or like you didn't fit in whilst at Thrive / Trust Links. If so what happened to make you feel this way?
- Have you wanted to be friends with anyone (or has anyone wanted to be friends with you) and meet up outside of Thrive / Trust Links. How did you feel about this and what came of it?
- Can you describe whether you have ever felt you have upset someone here or done something wrong?

Follow up: (If applicable) Did this affect you coming back?

- Have you ever made judgements or compared yourself to what other garden members get done, or their skills and abilities they have, or their achievements?

Follow up: How do you feel when you watch other people doing well?

Follow up: How does it make you feel to see someone struggling and how do you think that person feels?

Follow up: Have you ever worried about not being good enough or being a disappointment to other people you work with at Thrive / Trust Links?

- I would like to know whether people here talk to each other about their mental health problems and whether you like this or try to avoid this?

Follow up: What is it you like / dislike about talking about mental health with other people?

Main Body of Interview – Theme 3: Stigma

- Can you tell me how you heard about Thrive / Trust Links.

Follow up: Can you describe your initial reaction to being referred to the programme?

OR (whichever is applicable)

Follow up: Can you describe your feelings on referring yourself to the programme?

- Do you chat about your activities at (Thrive / Trust Links) with anyone outside the programme, or on social media and if so what do you say about it.

Follow up: Can you explain why you choose (to/not to) chat about it outside of Thrive / Trust Links or on social media?

- Can you describe what Thrive / Trust Links is to you, for instance, is it a social club, a community garden, a mental health programme, or a place to learn new skills, or perhaps it is a combination of things?

Follow up: Why do you think you like to describe it this way?

- What do you think about Thrive / Trust Links calling their attendees client/ gardener / member? Do you like this description or would you prefer to be called something else?

Follow up: If so why / what title would you prefer to have?

- How would you feel if you were given some form of clothing to wear, a high vis jacket or uniform for instance, (Thrive have a uniform) so that the staff or general public could easily see you and identify you as a member of the group?

Follow up: Why do you feel that way about it?

- Do you prefer to be gardening in a public space where people from outside of Thrive / Trust Links could be wandering around, or do you prefer to be in a private space?

Follow up: Can you explain why you prefer that?

- Can you describe whether you had any thoughts about what people who did gardening were like and did you see yourself as someone who was, or could be a gardener?

Follow up: Why do you think you had that impression of gardeners?

- I am interested to know whether you think people with mental health problems face any kind of discrimination in society?

Follow up: Can you tell me what you think the general public's opinions or attitudes might be about people with mental health issues?

Follow up: What do you think the general public's attitude would be about people who attend mental health programmes?

Main Body of Interview – Theme 4: Mental Health

- I would like to ask whether there are days when you feel like working in the garden on your own or whether you ever need a break away from other people?

Follow up: Can you explain the reasons for wanting to be alone on those particular days?

Follow up: Does wishing to be alone have anything to do with mental health?

- Can you tell me whether you think this type of programme is a good place to come for someone with social phobia or a fear of socialisation?

Follow up: Why do you think this?

- Can you describe whether you, or anyone else you know here, have managed to develop any coping strategies to deal with meeting new people or being around lots of people?

Follow up: Do you or other people look like they try to avoid social engagement?

Follow up: Do you, or anyone you see go and have tea break or lunch by themselves?

Follow up: Do you or anyone you see look like they try to avoid group activities?

Closing Questions

- Do you see many people come and go and if so what do you think the reasons could be for leaving or not coming back to the garden?
- Can you describe what is the most important thing about being at Thrive / Trust Links is for you, or what is it that keeps you coming?
- Some people enjoy the social element and some people do not. How much do you enjoy the social element?
- On the topic of the social aspects, whether good or bad, is there anything you think I have forgotten to ask about, or is there something you would like to add?

Ending the Interview

Close with collecting demographic information. Ask the participant if they are happy to provide their age and sex, how often they attend the programme and how long they have been coming to the programme. Explain that this information will be used to see whether perceptions are influenced by these factors.

Summarise what the data will be used for and reiterate that it will be anonymous. Invite the participant to ask any questions about the research project. Thank the participant.

Appendix E – Development of the psychosocial-themed Interview

Context

The study is researcher led and influenced by experiences of working with a charity providing social therapeutic horticulture to a population of adults with mental health disorders. The researcher observed social difficulties some service users displayed on attending the intervention (including lack of confidence to attend alone, peer arguments, a dislike for other service users and displays of social distancing and isolation. The researcher also observed significant dropout rates which were left unexplored by the charity (i.e., follow up forms were not implemented).

The qualitative study on social barriers responds to the call in the literature for more research into the social barriers affecting nature-based intervention (NBI) participation and the results from a recent scoping review. The review was conducted as an exploration into what is already known on the psychological, psychosocial, and physical (PPP) barriers interrupting or preventing NBI referral, uptake, and attendance in the adult mental health population. The results revealed a total of 46 barriers in which the greatest array of barriers was collected in the social domain (social barriers n=28; psychological barriers n=13; physical barriers n=5). Furthermore, a recent UK government survey entitled 'Exploring Perceptions Of Green Social Prescribing Among Clinicians And The Public' (Published 30 March 2023) revealed that the most commonly reported barriers (described in the report as attitudinal barriers) were social in nature including not wanting to take part in activities with unknown people and a lack of confidence.

The researcher remains acutely aware of the risk of bias due to experiences of working in a NBI environment and will only be constructing research questions and the interview schedule based on the results revealed in the scoping review.

Data instrumentation

The instruments used for data collection (the interview and survey questions) are researcher developed. The questions were developed in four stages. Firstly, the questions were derived through the results of a scoping review on the PPP barriers and the most frequently occurring barriers which were support needed to attend, social phobia, Social judgement and stigma, and the barriers listed under the heading 'Peers' of which there were ten in total. The data extracts from the nine articles that generated the social barrier data were re-examined to identify what was said in the full data extract. This included noting the context of the barrier, for example, how the barrier data was generated, where and by whom (i.e., a service user attending a NBI or a clinician's perceived barrier), the extent of what is known on the specific barrier, and what aspects need further investigation.

Next, four separate interview themes were created entitled 'Support', 'Relationships', 'Stigma', and 'Mental Health'. The theme Support included questions exploring the depth of

how support helps one to attend and whether attendance would have been possible without support. In response to data identified in the scoping review, the concept of support is also explored temporally in the interview. Evidence suggests that support is needed for both initial attendance and ongoing attendance, therefore it would be beneficial to explore the duration of support needed by service users to maintain attendance and prevent dropout. Follow up questions explore the importance of a good link worker relationship, whether the support facilitated meeting new people, and confidence to attend without support. This theme also includes a question which touches on one of the most frequently identified barriers which was social phobia.

The relationships theme was developed in response to the 'Peers' group in the psychosocial category of barriers from the scoping review. These barriers were; achievement comparisons, peer garden ownership, resentment, volunteer attendance, volunteer relationships, not fitting in, social comparisons, upset by peers, peer arguments, and burdensome peer relationships. The relations theme also covers barriers form the Perception group, namely perceiving having done wrong and perceiving being a disappointment to others. There is one further enquiry in this theme that questions participants about the notion of dwelling on patient identities and whether this is welcomed or disliked.

The stigma theme was developed from data identified in three studies included in the scoping review. Four barriers were considered during the development of this section of the interview. These were stigma around mental health, social judgement, a dislike of being seen in public with a mental health group, and concerns around membership of a mental health group being socially undesirable.

The mental health theme explores how much of an impact mental health issues have on service users' ability to socialise. The barrier 'social phobia' was the most commonly occurring barrier in the psychosocial category identified across five studies included in the scoping review. The questions in this section explore whether service users need to break away from social contact within the intervention, whether or not social coping strategies are developed, and the asks for a subjective opinion on whether NBIs are even a good option for someone who struggles to socialise.

Next the identified questions were written in the form of open-ended questions to prevent yes and no answers in order to produce longer responses. The questions were organised in accordance with guidance from (Magnusson & Mareck p. 56, 2015) to lead the participant into the interview gently, asking the more personal, challenging, or sensitive questions in the middle of the schedule, then ending on a less personal subject to close the interview and to attempt to ensure that the participant is not left dwelling on the difficult topics. A debriefing including mental health contact details also formed part of this strategy for reducing psychological harm. Finally the interview questions were subjected to two test interviews (piloting stage) with two service users. Interviewees were informed that the interview was to be a test interview, however, following advice form Braun and Clark (2013), if no issues with clarity (or other concerns) were reported, the responses to the interview were to be included in the study with the participants consent.

Interview Question Rationale for all questions

Main Body of Interview – Theme 1: Support

- I would like to know if you had anyone to accompany you on the first day or subsequent days of Thrive / Trust Links and how did having support help you to attend?

Follow up: How many sessions did you have support to attend for?

Follow up: What would you have done if there was no one to support you coming?

Follow up: How did you find the confidence to come on your own?

What am I trying to achieve with this question:
Explore whether people need / prefer supported attendance, whether they could attend alone on the first day (or subsequent days), and whether they had to overcome a barrier or find a strategy to assist with attending on their own. Question in response to scoping review studies 1,3, &,4.

- (If applicable) Can you tell me how well you got on with your support worker?

Follow up: Can you tell me whether this relationship is important to attendance?

Follow up: Would you have liked a support worker and do you think this would have helped you in anyway?

What am I trying to achieve with this question:
To explore whether a link worker is a key relationship in the referral and initial uptake stage. Question in reference to 'trust in link worker' barrier described in scoping review study 2.

- Can you describe how you felt about meeting new people when you first joined Thrive / Trust Links?

Follow up: Did the support you had help you to meet new people? (If participant had support)

Follow up: How did you manage to cope with this? (if participant felt anxious)

Follow up: What made meeting new people enjoyable? (if participant felt at ease)

What am I trying to achieve with this question: Explore whether there was any anxiety experienced, or whether it felt intimidating and how the person was able to cope with any anxiety. Question in response to social phobia as one of the biggest barriers identified across 5 studies in the scoping review.

Main Body of Interview – Theme 2: Relationships

- I would like to learn how well people get on with each other at Thrive / Trust Links. Can you describe one good relationship you've had and one bad relationship? This could be with a volunteer, staff member, or other garden members / garden clients.

Follow up: Have you made any friends here and how would you feel if they left the garden?

Follow up: Has there ever been a time someone here upset you and can you explain what happened?

Follow up: Has there ever been a person here who made you feel like not coming back and what happened to make you feel this way?

Follow up: Have you ever seen arguments happen at Thrive / Trust Links and if so can you describe what happened?

What am I trying to achieve with this question: Ascertain the extent to which relationships (with either staff, peers, volunteers) are beneficial and therapeutic or whether they act as a burden or cause distress. Question responds to five separate barriers across four studies in scoping review that suggested relationship difficulties.

- I am wondering whether you have ever experienced feeling isolated, rejected, or like you didn't fit in whilst at Thrive / Trust Links. If so what happened to make you feel this way?
- Have you wanted to be friends with anyone (or has anyone wanted to be friends with you) and meet up outside of Thrive / Trust Links. How did you feel about this and what came of it?

What am I trying to achieve with these two questions: Exploring whether service users can still feel isolated / rejected despite being part of a social group. Does socialization lead to wellbeing or does the quality of the relationship lead to wellbeing? Responds to scoping review studies 5 and 9.

- Can you describe whether you have ever felt you have upset someone here or done something wrong?

Follow up: (If applicable) Did this affect you coming back?

What am I trying to achieve with this question: This question is in response to Wood et al. (2022) where a service user perceived having negative social encounters and perceived having 'done wrong', to understand whether this phenomenon is common or rare.

- Have you ever made judgements or compared yourself to what other garden members get done, or their skills and abilities they have, or their achievements?

Follow up: How do you feel when you watch other people doing well?

Follow up: How does it make you feel to see someone struggling and how do you think that person feels?

Follow up: Have you ever worried about not being good enough or being a disappointment to other people you work with at Thrive / Trust Links?

What am I trying to achieve with this question: Understand whether service users make comparisons with what they can do and what their peers are able to do and whether this has an effect on mood. This phenomenon was reported in one study as a unique barrier, therefore it would be of benefit to explore this further.

- I would like to know whether people here talk to each other about their mental health problems and whether you like this or try to avoid this?

Follow up: What is it you like / dislike about talking about mental health with other people?

What am I trying to achieve with this question: To provide further evidence into whether negative shared experiences (mental health in this instance) acts to create a supportive relationship / environment or a burdensome relationship / environment. The negative experiences of dwelling on patient identities were observed in scoping review study 8.

Main Body of Interview – Theme 3: Stigma

- Can you tell me how you heard about Thrive / Trust Links.

Follow up: Can you describe your initial reaction to being referred to the programme?

OR (whichever is applicable)

Follow up: Can you describe your feelings on referring yourself to the programme?

What am I trying to achieve with this question: Gain understanding of how people feel when accepting a place on a mental health programme.

- Do you chat about your activities at (Thrive / Trust Links) with anyone outside the programme, or on social media and if so what do you say about it.

Follow up: Can you explain why you choose (to/not to) chat about it outside of Thrive / Trust Links or on social media?

What am I trying to achieve with this question: Whether people are willing or unwilling to disclose that they attend a mental health programme, or to what extent they are willing to talk about the programme, and to whom they will talk to about it. In essence, the question is exploring whether stigma or self-stigma is attached to joining a GSP programme for mental health.

- Can you describe what Thrive / Trust Links is to you, for instance, is it a social club, a community garden, a mental health programme, or a place to learn new skills, or perhaps it is a combination of things?

Follow up: Why do you think you like to describe it this way?

- What do you think about Thrive / Trust Links calling their attendees client/ gardener / member? Do you like this description or would you prefer to be called something else?

Follow up: If so why / what title would you prefer to have?

- How would you feel if you were given some form of clothing to wear, a high vis jacket or uniform for instance, (Thrive have a uniform) so that the staff or general public could easily see you and identify you as a member of the group?

Follow up: Why do you feel that way about it?

What am I trying to achieve with these 3 questions: Exploring how service users identify with their programme and how they internalise being a member of this group. It is also trying to explore how service users prefer to construct their social identity in relation to group membership and whether a forced identity (whether in the form of a service user label or a uniform) affects the success of service user constructed identities. This question was informed by the literature review and the data that describes how service users prefer not to be identifiable as a mental health service user.

- Do you prefer to be gardening in a public space where people from outside of Thrive / Trust Links could be wandering around, or do you prefer to be in a private space?

Follow up: Can you explain why you prefer that?

What am I trying to achieve with this question: This question is in response to 3 barriers from the scoping review which described a dislike of public space, a fear of having a panic attack in public view, and the acknowledgement that the activity or group is socially undesirable to be seen with.

- Can you describe whether you had any thoughts about what people who did gardening were like and did you see yourself as someone who was, or could be a gardener?

Follow up: Why do you think you had that impression of gardeners?

What am I trying to achieve with this question: Question is exploring identities related to the specific activity provided by the GSP mental health programme and whether a potential service user positively identifies with the proposed group membership, in this instance – a gardener. This question responds to the scoping review barrier of not fitting in. It is also potentially exploring whether stigma is attached to the activity (i.e., gardening was described as low profile activity by Marsh et al., 2018).

- I am interested to know whether you think people with mental health problems face any kind of discrimination in society?

Follow up: Can you tell me what you think the general public's opinions or attitudes might be about people with mental health issues?

Follow up: What do you think the general public's attitude would be about people who attend mental health programmes?

What am I trying to achieve with this question:
Question is self-explanatory in that it is enquiring whether service users think that mental health stigma exists.

Main Body of Interview – Theme 4: Mental Health

- I would like to ask whether there are days when you feel like working in the garden on your own or whether you ever need a break away from other people?

Follow up: Can you explain the reasons for wanting to be alone on those particular days?

Follow up: Does wishing to be alone have anything to do with mental health?

What am I trying to achieve with this question:
This question is in response to a statement in the literature that reported that gardening was little more than a vehicle for the 'real' benefit which was social contact. This question is in response to study 6 from scoping review and the need to withdraw socially and work alone in the gardens.

- Can you tell me whether you think this type of programme is a good place to come for someone with social phobia or a fear of socialisation?

Follow up: Why do you think this?

What am I trying to achieve with this question:
Exploring the general opinion as to whether this type of intervention i.e., social prescribing is the right option for people with social phobia.

- Can you describe whether you, or anyone else you know here, have managed to develop any coping strategies to deal with meeting new people or being around lots of people?

Follow up: Do you or other people look like they try to avoid social engagement?

Follow up: Do you, or anyone you see go and have tea break or lunch by themselves?

Follow up: Do you or anyone you see look like they try to avoid group activities?

What am I trying to achieve with this question:
Exploring whether service users have developed a social coping mechanism or strategy to engage socially.

Closing Questions

- Do you see many people come and go and if so what do you think the reasons could be for leaving or not coming back to the garden?

What am I trying to achieve with this question:
Question borrowed from supervisors own interview schedule. It is exploring whether a high or low dropout rate is perceived by attendees and what they think the reasons are.

- Can you describe what is the most important thing about being at Thrive / Trust Links is for you, or what is it that keeps you coming?

What am I trying to achieve with this question:
Exploring what the possible mechanism/s responsible for inducing wellbeing or enjoyment as felt by the service user.

- Some people enjoy the social element and some people do not. How much do you enjoy the social element?

What am I trying to achieve with this question:
Making a general enquiry on how much the social element means to the service user.

- On the topic of the social aspects, whether good or bad, is there anything you think I have forgotten to ask about, or is there something you would like to add?

What am I trying to achieve with this question:
Making sure the participant has said everything they feel they want to say on the interview topic and that I have not overlooked something.

Appendix F - Table of additional qualitative extracts

Social Curse Themes	Extracts
As long as I know them, it's alright	*"Very scared cos my confidence is, quite bad on meeting new people, especially a lot of people at one time"* C6P6
	"So whenever meeting new people there's always a little tiny bit of, oh, I wonder what, what, you know, who these people are…I'm always a bit the same which is, a little bit reserved because, it's a natural way to be I think for a lot of people. It's a little bit reserved at first cos you don't know who the characters are and how they interact and what have you so there's quite a lot of, just observing…" C6P3
	"I would say, I would put that down to me, erm, and my anxiety and er, sometimes I come here now and I have something I need to say or something to, to show, and they're busy (the staff) *or they're doing something, or something going on and I would get very offended, way beyond the normal person would get offended, So I would take that away, I wouldn't stay in that situation, I would immediately leave and walk, cos that's my, that's my cure, I walk, I just let it, breathe itself out and then I come to the realisation that was just fucking stupid what you just did* [laughs] *and just why. Why'd you do that, why, I get so upset for the most menial thing"* C9P19.
You have the right to remain silent	*"I want, yeah, and there's been times where I've had a go at people because they're talking about suicide across the table and I'm just like, do you mind…have some respect, and not talk about that subject over the table, I kind of like, segregate myself… Yeah, I mean some people will approach the subject of suicide and stuff and I'm just like, that's the reason why I'm here. I don't want to talk about it"* C40P9 / C21P9.
	Yeah, it depends for me, myself, if it's really bad, and I'm feeling really down, I could just start blurting it out to someone, or anyone and just start going oh I'm really down, it would be if I'm working with them or something and they ask how I am…" C13 P12.

	"I think it's good to talk, erm, within reason. Some people will just, be nasty and toxic and other people you can talk to, you just, you've got to pick your friends haven't you and just, yeah, some people you can talk to and others" C12P16.
One bad apple can spoil the barrel	*"…there are a couple of people that are, er, just a little bit overwhelming like they, sort of talk a lot, erm, or are quite loud, hmm, I really struggled with that at first, but erm, it's, it's , the longer I've been here and the longer I've known them it's got easier"* C35P11.
	"Oh god yeah plenty (of arguments witnessed)*, I can't remember any specifically off the top of my head… it's probably their mental health playing up or something you know, that's what I would guess"* C7P8.
	"It is, it's whether I'm having a bad, sometimes I just don't want to speak to people, but I haven't had that for a while though, but I just don't want to, I just, I'm so agitated that I don't…yeah, that's why I done that garden over there, to get away from everyone, in the corner first of all. Yeah, but I done that just because I didn't want to speak to anyone…" C54P12.
Shall I compare thee	*"So some people here I compare myself, like, I try, like if someone knows a little bit more knowledge, I try to learn a bit more knowledge so I can be on their comparison…"* C44P13.
	"Yeah, [member's name] *he works like a machine, but, you know, he's twenty years younger than me.* [Member's name] *he's a good weeder, but I haven't, I get, he'll just weed all day, but I can't do it and it annoys me that I can't do it"* C44P16.
	"I don't really think about it anymore, I do, but, I just yeah, I just don't, it's more, my own jobs that I'll criticise than other people…Yeah, yeah, I judge myself I don't really judge everyone else like, yeah I don't really compare, sometimes I do, but I wouldn't beat myself up about it…" C44P12.
We're not worthy	*"I'm always a disappointment. This is, everything intertwines with my mental health and just not liking myself but yeah, I suppose yeah"* C11P16.

	"…there was a guy who was a bit, well he had learning difficulties anyway, but I dunno, I upset him and he wouldn't talk to me for ages. So I wasn't really upset at him but I just thought it was a bit odd and it turned out I'd made like a remark that I thought was pretty, innocuous but obviously he'd taken it to heart" C43P18.
	"Yeah. [member's name]. *It's like walking on eggshells with her. Yeah, yeah, I do* (feel guilty)*, and I hope I didn't offend, cos I think I don't know if I'm up front, or I'm too harsh, or I'm too honest for me own, sometimes, maybe, I am too honest for me own good sometimes. And that goes down to me, like, my mental health and that cos I know I'm a dick head sometimes, but I shouldn't call me self a dick head, but I do…I feel guilty, I feel guilty as shit* (when having upset someone)*, I could never be a murderer, I could never live with myself, So yeah, so I do feel guilty, over the little, yeah"* C43P16.
	"…it's all, it's all positive, if there's anything negative, it's, it's me maybe not, erm, it's how I feel about myself, it's not about the group at all" C62P10.
Where no one knows your name	*"Erm, I don't know, there was another organisation that did volunteering that I did apply for…and erm, it's all cleared by volunteers, all, you know, so there are a lot of volunteers. I thought, oh that's a bit of gardening that will be good, I thought no, you're going to get all these walkers and I thought I might know someone, and then, I'll just be embarrassed, it's not about what I'm doing it's just erm, I just don't like being watched, I think that's what it is. I think, I think, and it's out of, I don't like being caught by surprise, by, you know, I thought, or not, I wasn't prepared, if I knew, actually today they're gonna be walking past at two o clock, I could be prepared for that, but if they just catch me unaware, I don't like that… if its somewhere where I don't know anybody, if it was out the area I haven't got a problem with that"* C29P10.
	"But I feel like there is a stigma, and I feel like, I feel like, if someone said I got schizophrenia, there'd go oh you're mad, but you actually talk to these people…I talk to many different people, but, I don't see them as mad, I just see them as

	struggling mentally, that's what I perceive, where someone else may go, aw I'm not talking to that person cos they maybe insane you know" C16P13.
	"I think that the discrimination would be erm, you might be a nutter, you might get a lot worse, erm, not being too sure of people…I think, with someone with an acknowledged mental health or apparent mental health problem, the expectation of oh I'm not too sure about you, there's a certain hesitancy, of connecting with somebody I would have thought is probably one of the biggest ones… oh I'm not too sure about that, erm, how mad are they, would be an extreme, perhaps…there would be probably some people who would think, yeah but they might be nutters, what if one of them goes off the rails or whatever, so, and particularly if they'd be in a situation where they had been frightened by or hurt by somebody who had a mental health problem…" C16P3.
	"Yeah, I think a lot of people don't understand mental health as well like, they just think, well like the place across the road (a health clinic)*, you go for an appointment there, and they just ask you about doing this and doing that, well it's like I can do that and do that and it's not about what I can do its about what's in my head. It's mental health, but, people, some people just don't understand I think"* C16P6.
	"Yeah, yeah, but I still feel there's people that are like, ah you aint ill, you aint got mental health, Go out and get a job like, a living…Yeah, and just like a bit of, man up and like, yeah, a bit of manning up will sort it all out, nah, that's bull shit" C16P12.
	"Yeah I think so. I think, people without them (mental disorders) *are quick to judge, like I said before like, as well, people that aren't working get, they get erm, I think they get judged a lot, erm, and like labelled as lazy and stuff like that without realising that you know, people are struggling, so yeah, I think so"* C15P14.
I can't stand losing you	*"…I dunno, maybe I put a lot of faith in that relationship… if someone like that had left, erm, it might have affected erm, sort of my enjoyment of it or the benefits I was getting from*

	it possibly… the enjoyment would have been the one that would have been tested probably" C8P7.
	"…a good relationship I had was with a volunteer called [name]*…how supportive he was was very reassuring… a really positive relationship and obviously if* [volunteer's name] *wasn't there one week I'd feel I wouldn't be confident with what I was doing so possibly I found a lot of confidence in working with people like that…"* C25P7.
Social Cure Themes	**Extracts**
It's good to talk	*"Some, will talk to the people they can confide in, the people that they know and trust…I've had good relations with the people that I've worked around…I've had good communications, I've been able to open up you know to tell them about what life's like at home"* C13P17.
	"I like it because it helps me, if you've got the same problems as me, we share it and give each other advice" C13P5.
	"…on a Wednesday they used to do like a group therapy thing like where you meet other people and discuss like mental health, anxiety and stuff and that was always quite useful to come to…I quite enjoyed coming to that it was a good group to come to. We all got to share with each other all sorts of mental health issues and kind of yeah, I found it quite therapeutic like if you see what I mean, a way to get things off your chest you know, so. You're not the only one, yeah there's lots of people out there like you, yeah" C13P18.
We are family	*"I think it's different as in, it's so relaxed as in people can treat this like it is its own family, I've only been here a little while and I, like I say I've got er, trust, trust issues yeah, I can sit here and speak to you all day long, yeah and that means to me I haven't got to think about like you trying to fuck me over or anything like that or anyone really here, like, so I can come here and relax"* C59P15.
	"I like to be surrounded by people I like to have a laugh with people and when I first walk in here I will immediately go to the people that I like to talk to and then I'll have a laugh

	with everyone else cos everybody's like, everyone's happy and comfortable here in my personal opinion…" C23P13.
	"I still meet someone outside because obviously he's on his own, he hasn't got anyone, no family or nothing so I sort of, we meet up, just have a chat over at the park and then, I'll go home and he, yeah, just a chat cos he's lonely. I don't meet everyone but just him because he's got no one and erm, he's just at home on his own and I just feel like, he likes to get out and chat so, yeah" C42P6. *"I know there's a big social benefit to going to Trust Links …I could be with people and amongst the same members which was lovely, really good and erm, community, certainly as time went on I could see it as a community…"* C50P7.
	"I've been very tactful, and diplomatic, and careful with other people's needs. Some people might have worse needs, I mean, some people might have dependencies or might need social support more so than myself so I've always tried to be a, er, caring, kind, understanding…like [member's name] *he doesn't always want er, he doesn't always want to have er, a chat…I understand his Autism and I understand that he doesn't always want to talk"* C55P17.
Where the sheep my safely graze	"*Yeah I definitely prefer the garden to be in a private space, erm, I did see, er, it's interesting cos I went on to Hyde Hall and I probably didn't enjoy that as much because, erm, yeah, probably because of, yeah it's a bit different in public isn't it probably because the public's different with social interaction… definitely would have preferred it behind the hedge* (inside Trust Links) *rather outside, I felt, there's an increased sense of vulnerability outside in a public space…"* C29P7.
Autonomy leads to engagement	*"I can come here often and be calm, I can just, just be left alone and get on with what I want to do, or I can go and talk to someone, or you know, just, generally just wander around and have a, be in a social, it's a bit like being over at my allotment"* C19P15.
	"I think here it's a bit flexible, so I like that, erm, and I like, how you can leave, people tend to leave when they want to, you don't have to, it's not ridged, I think there are no rules,

	erm, and clearly, erm, that I know it's good, I know it's good for me really" C19P10.
We rise by lifting others	*"Yeah, I like to help people so people like er, the staff sort of erm, always used to put new people with me, to work with me, you know what I mean, so erm, because I knew what I was doing…Yeah, yeah, so erm,* [laughs] *they used to go, 'if you don't know what's a weed, ask* [names themselves]' [laughs]*…it does make me feel good…"* C49P6.
Coping Strategy Themes	**Extracts**
I get by with a little help	*"…my other half came with me,* [name] *came with me, on the first day, yeah she did actually, yep. She did"* C1P4.
	"…my support worker at the time, [name]*, erm, she met me here and; well you know, helped me and she came see me in the garden and what have you and that did help"* C1P1.
	"She [support worker] *introduced me to* [Trust Links staff name]**.** *Er some of the other workers, she's been up here quite a few times; so yeah she introduced me to er, most of the group so yeah it was a nice ice breaker. Yeah, you got the support worker, helped quite a bit"* C3P1.
	"I don't think I would have come here because I would have needed someone to take me here and bring me here and boost my confidence because before I came here I didn't have much confidence and, it was very important that someone was there to like, not hold my hand, but be a erm, be a confidence builder" C5P13.
	"I wouldn't have done it [attended alone] *my confidence isn't very good"* C3P6.
The trick is to keep busy	*"I'd probably be more uncomfortable, if I'm there and there's, not actually getting anything done I'd probably feel more uncomfortable than I would be, working… I should imagine that I would be more uncomfortable with just the social and no work"* C14P4.
	"I can disappear into the background and not even bother with anyone seeing me as long as the works getting done or the, what I need to get done is getting done" C18P15.

I want to be alone	*"Erm, there were some people here who wanted to work all on their own, and that was interesting to me, because I'd never met anyone like that. All the people that I've met here, have worked in a group with other people and like to chit chat, and like to have a laugh, and felt comfortable here, but there was one woman who came here and she just worked on her own, and she just dug and de-weeded and didn't talk to many of us but she talked to the staff, but she didn't talk to many of us, and then she was here a couple of months and then she went"* C20P13.
	"I er, I, it, it depends on, er, if you're looking down doing your work and you don't notice anyone you're alright, but if you turn around and there's been ten people looking at you, then you might, like, you'd go ah" C14P12.
	"Yes sometimes I do, yeah sometimes I just like, need the time, it's like I've had it like a few months ago, just need to be on my own and just get on with it you know what I mean, and just get my mind together" *C54P6*
The impossible takes a little longer	*"I suppose just that I've never been pressured into erm, having to talk to anyone here, erm, or having to interact with anyone, I'm not forced to work in a group, erm, so that's all been really good hmm..I think it takes time, erm, but I do think it can be worth it because it's, hmm, it can be really horrible being like isolated and on your own and coming here, like, it's, there's never any pressure to talk to anyone or do anything it's nice to just be out, and, there to be some sort of company even if you don't actually interact with them, and it can sort of, hmm, in a way sort of, hmm, get you sort of, more used to being with other people erm, hmm, I've, like I've never felt any pressure here to talk to anyone or anything, so it's hmm, yeah it can be quite nice actually hmm..erm, hmm, the other members and staff here are familiar people, I see them every week so it just, it does get easier hmm"* *C19P11.*
	"I used to try and find a place that was quiet and try and have lunch on my own…I would try and sit there on my own and eat my lunch and that was the way it was for me but eventually I just got more confident" C21P13.

	"I've got used to it (being social) *so I love it"* C19P16.
I think therefore I can	*"Er, perseverance I think…I er, made a promise to myself that the systems process, I will follow to the end, wherever that takes me"* C61P19.
	"No I wasn't confident I was nervous. Erm, but I didn't give up on me, erm, I used to come, I used to do like four days a week, some, after about a month I was er, I was very familiar with the people. Yeah it took me about a month" C6P16.
	"It was difficult to keep coming but I forced myself, I had to keep doing it and I hoped it would get easier" C61P5.
Those who have a purpose can endure	*"Erm, it's a place where I can learn new skills, it's a place where I can be sociable, It's a place that helps me learn, with my mental health, it gives me confidence coming here, so I can be more confident out there* (in society)*…and, I feel very happy here, and, I'm very grateful that I actually got to know about this place cos if I hadn't known about this place, I'd probably be still sitting there looking at four walls erm, at home, and, I think that would have lowered my confidence which then would have had a knock on effect with my mental health"* C22P13.
	"Yeah, and we're doing stuff for Southend, it's not a lot, but at least we're going, we're doing something, you know, volunteering like, you know like, we done the er, civic centre, next to the nature museum, next to Victoria Station, it's just a clean-up and that's good" C60P16.
	"Er, it was just, something to do, like it was something to, you know, rather than just sitting in all the time…I didn't really, didn't have much of a social life at the time so it was kind of it was something to do coming here for a few hours get some stuff off my chest and stuff but Yeah, yeah, so it did help me in a way cos it helped me like develop a bit of social skills and like other stuff" C22P18.

Appendix G – Mixed Methods Participant Information Sheets (Generic form sections presented at end of appendix B)

Participant Information Sheet – Outcome Measures

Title of study

The effects of increasing perceived meaning and purpose behind the activities presented within a nature-based mental health intervention for adults.

Invitation

My name is Mark Burrell and I am a PhD student in the School of Sport, Rehabilitation and Exercise Science at the University of Essex. I would like to invite you to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and ask the University of Essex researchers if you have any questions. Participation in this research is voluntary.

Purpose of the study

This research project aims to explore the effect of increasing the meaning and purpose of gardening- based activities on a person's wellbeing. The information collected could be useful in helping facilitators of gardening-based mental health interventions understand the importance of meaningful activity.

Do I have to take part?

Participation is voluntary and you do not have to take part in this research. If you are interested in taking part then you must fit the inclusion criteria of being aged between 18 and 65 and be attending a Trust Links gardening programme for mental health. You will also need to provide your consent to take part in completing four outcome measurement scales (questionnaires) before the study and again at the end of the study (i.e., before you begin the gardening activities that will benefit of other people and again after you receive thank you messages from recipients).

You may withdraw from the study at any time and will not have to explain why. There are no consequences of withdrawing from the study and it will not affect your relationship with Trust links. Any data you have provided will be removed from the study. However, after anonymisation of data is complete, it will not be possible to withdraw your data as all responses will be anonymous. If you do change your mind and decide to withdraw from this research, please contact the research team using the contact details at the end of this information sheet.

What will participation involve?

You will be asked to take part in a gardening activity that will benefit other people, for instance growing fresh vegetables for a local foodbank or growing cut flowers to create bouquets to donate to care homes etcetera. The donating of produce or flowers etc will be conducted by the researcher Mark Burrell. The exact activity will be decided by your nature-based intervention programme coordinator however, all activities including the gardening activities to benefit others and the completion of outcome measures will take place at your usual garden and on your usual day of attendance.

Data collection will involve completing four short outcome measures that will detect changes in life meaning, self-esteem, and well-being, and will be administered prior to the gardening activities and again at the end of the study after you have created gift packages and received thank you messages from the recipients.

The four outcome measures will take approximately 10 to 15 minutes each to answer. The measures are made up of statements that you rate from strongly agree to strongly disagree. All four outcome measures total 43 statements. The research does not require any data that will identify you and a pseudonym will be created for each participant to increase anonymity.

What are outcome measures?

An outcome measure is a tool used in research to assess the impact of an intervention, such as the Growing Together programme you attend. They are usually completed before the start of an intervention, during, and at the end of an intervention. This is done to determine any changes in the health status or wellbeing (whether negative or positive), of an individual. The measures being used will assess any changes to mental wellbeing, meaning in life, and self-esteem. Trust Links uses outcome measures in their Growing Together programme so these should feel very familiar to you.

What are the possible risks of taking part?

Participating in this research is not intended to cause any physical or psychological discomfort. The outcome measures are to assess whether the gardening to benefit other people activity caused any changes to your self-esteem, wellbeing, and meaningful life experiences.

You do not have to take part in the study and you may withdraw from the altruistic gardening activities or the outcome measurements, or both. Withdrawal will not affect your participation at the gardening programme and you do not have to give a reason for withdrawing. At the end of the study, there will be a debriefing to reiterate what the research was about, a chance for you to ask questions, and the contact details of mental health charities will be made available.

What are the possible benefits of taking part?

There are no personal benefits gained by taking part other than to help advance knowledge through research. Your participation will help to provide evidence of any benefits that could be gained from increasing the meaning and purpose of activities offered by gardening

programmes for mental health. The information collected could inform facilitators and help design meaningful nature-based programmes in the future.

Will my information be kept confidential?

The data collected will be anonymous and only made accessible to the researcher and research supervisors via a secure password protected login. All participants will be given a pseudonym which will be used across the data collection methods. Consent forms and Outcome measures will be securely stored on 'Box', a cloud storage space used by the University of Essex following the General Data Protection Regulation (GDPR) guidelines. Consent forms and outcome measures data will be stored in separate folders to ensure that they cannot be matched. Upon completion of the project, the anonymised outcome measures will be published in a suitable research data repository. After ten years all data will be destroyed.

Participant Information Sheet – Focus Group

Title of study

The effects of increasing perceived meaning and purpose behind the activities presented within a nature-based mental health intervention for adults.

Invitation

My name is Mark Burrell and I am a PhD student in the School of Sport, Rehabilitation and Exercise Science at the University of Essex. I would like to invite you to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and ask the University of Essex researchers if you have any questions. Participation in this research is voluntary.

Purpose of the study

This research project aims to explore the effect of increasing the meaning and purpose of gardening- based activities on a person's wellbeing. The information collected could be useful in helping facilitators of gardening-based mental health interventions understand the importance of meaningful activity.

Do I have to take part?

Participation is voluntary and you do not have to take part in this research. If you are interested in taking part then you must fit the inclusion criteria of being aged between 18 and 65 and be attending a Trust Links gardening programme for mental health. You will also need to provide your consent to take part in a focus group, which is a discussion group involving other participants from your garden programme and the researcher. You may withdraw from the focus group at any time before or during the focus group and you will not have to explain why. There are no consequences of withdrawing and it will not affect your

relationship with Trust links. If you choose to withdraw, any data you have provided will be removed from the study. However, after anonymisation of data is complete, it will not be possible to withdraw your data as all responses will be anonymous. If you do change your mind and decide to withdraw from this research, please contact the research team using the contact details at the end of this information sheet.

What is a focus group?

A focus group is a small group of people who participate in an organised discussion with a facilitator or researcher to share their views and experiences on a given topic.

What will participation involve?

You will be asked to take part in a gardening activity that will benefit other people, for instance growing fresh vegetables for a local foodbank or growing cut flowers to create bouquets to donate to care homes etcetera. The donating of produce or flowers etc will be conducted by the researcher Mark Burrell. The exact activity will be decided by your nature-based intervention programme coordinator however, all activities including the gardening activities to benefit others and the participation in the focus group will take place at your usual garden and on your usual day of attendance.
Data collection will involve taking part in a discussion with three to four other people who you will know from your garden programme, and the researcher Mark Burrell from the University of Essex. The conversation will be on how you experienced the gardening for the benefit of others with topics on whether helping other people affected your mental wellbeing, your identity in society, and gaining meaning and purpose. The focus group is estimated to last approximately 45 minutes to an hour and will be recorded using a digital recording device to enable the researcher to transcribe the conversation. The research does not require any data that will identify you and a pseudonym will be created for each participant of the focus group in the written transcript to increase anonymity.

What are the possible risks of taking part?

Participating in this research is not intended to cause any physical or psychological discomfort. The focus group is simply exploring your experiences of using gardening to help other people.

You do not have to take part in the study and you may withdraw from the altruistic gardening activities or the focus group or both. Withdrawal will not affect your participation at the gardening programme and you do not have to give a reason for withdrawing. At the end of the study, there will be a debriefing to reiterate what the research was about, a chance for you to ask questions, and the contact details of mental health charities will be made available.

What are the possible benefits of taking part?

There are no personal benefits gained by taking part other than to help advance knowledge through research. Your participation will help to provide evidence of any benefits that could

be gained from increasing the meaning and purpose of activities offered by gardening programmes for mental health. The information collected could inform facilitators and help design meaningful nature-based programmes in the future.

Will my information be kept confidential?

The data collected will be anonymous and only made accessible to the researcher and research supervisors via a secure password protected login. The focus group conversation will be transcribed and any identifying information within will be removed. All participants will be given a pseudonym which will be used across the data collection methods. Consent form, Audio files, and transcripts will be securely stored on 'Box', a cloud storage space used by the University of Essex following the General Data Protection Regulation (GDPR) guidelines. Audio files will be destroyed after the focus group conversation has been transcribed. Consent data, audio files, and transcripts will be stored in separate folders to ensure that they cannot be matched. Upon completion of the project, the anonymised transcripts will be published in a suitable research data repository. After ten years all data will be destroyed.

Participant Information Sheet – Physiological Measures

Title of study

The effects of increasing perceived meaning and purpose behind the activities presented within a nature-based mental health intervention for adults.

Invitation

My name is Mark Burrell and I am a PhD student in the School of Sport, Rehabilitation and Exercise Science at the University of Essex. I would like to invite you to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and ask the University of Essex researchers if you have any questions. Participation in this research is voluntary.

Purpose of the study

This research project aims to explore the effect of increasing the meaning and purpose of gardening- based activities on a person's wellbeing. The information collected could be useful in helping facilitators of gardening-based mental health interventions understand the importance of meaningful activity.

Do I have to take part?

Participation is voluntary and you do not have to take part in this research. If you are interested in taking part then you must fit the inclusion criteria of being aged between 18 and 65 and be attending a Trust Links gardening programme for mental health. You will also need to provide your consent to take part in a physiological measure involving monitoring

your heart rate and the level of sweat detected on your skin. Both these measures will be taken by using a sensor placed on your fingertip.

You may withdraw from the study at any time and will not have to explain why. There are no consequences of withdrawing from the study and it will not affect your relationship with Trust links. Any data you have provided will be removed from the study. However, after anonymisation of data is complete, it will not be possible to withdraw your data as all measures taken will be anonymous. If you do change your mind and decide to withdraw from this research, please contact the research team using the contact details at the end of this information sheet.

What will participation involve?

You will be asked to take part in a gardening activity that will benefit other people, for instance growing fresh vegetables for a local foodbank or growing cut flowers to create bouquets to donate to care homes etcetera. The donating of produce or flowers etc will be conducted by the researcher Mark Burrell and you will not have to leave your garden site to participate. The exact activity will be decided by your nature-based intervention programme coordinator however, all activities including the gardening activities to benefit others and the completion of outcome measures will take place at your usual garden and on your usual day of attendance.

Data collection will involve sitting in a chair in one of Trust Links office rooms and having two sensors placed on the tips of your fingers. These sensors will detect small changes in your heart rate and your seat glands. You will first be given time to relax then you will be read a non-stimulating piece of text such as a washing machine instruction manual. You will then be read a set of thank you messages collected from the recipients of the gift packages you made out of the produce you grew.

The procedure is expected to take 20 minutes. 10 minutes for setting up and 10 minutes for reading through the messages. You do not have to do anything other than sit still in your chair and listen to your messages. The research does not require any data that will identify you and a pseudonym will be created for each participant to increase anonymity.

What are the physiological measures being taken?

The study would like to measure your heart rate variability and skin conductance response or put simply, the changes in sweat produced through the skin.

The measures being used will assess any changes to your heart rate variability and sweat secretion which will demonstrate whether the messages you are being shown are having an emotional effect on you. Please see the two additional information sheets to accompany this one which describes heart rate variability and skin conductance response in more detail. There is also a page showing pictures of the device used to take these measures and a hand showing the sensors in place on the finger tips.

What are the possible risks of taking part?

Participating in this research is not intended to cause any physical or psychological discomfort. The physiological measures are being taken just to assess whether the gardening to benefit other people activity caused any changes to your psychological wellbeing.

You do not have to take part in the study and you may withdraw from the altruistic gardening activities or the physiological measurements, or both. Withdrawal will not affect your participation at the gardening programme and you do not have to give a reason for withdrawing. At the end of the study, there will be a debriefing to reiterate what the research was about, a chance for you to ask questions, and the contact details of mental health charities will be made available.

What are the possible benefits of taking part?

There are no personal benefits gained by taking part other than to help advance knowledge through research. Your participation will help to provide evidence of any benefits that could be gained from increasing the meaning and purpose of activities offered by gardening programmes for mental health. The information collected could inform facilitators and help design meaningful nature-based programmes in the future.

Will my information be kept confidential?

The data collected will be anonymous and only made accessible to the researcher and research supervisors via a secure password protected login. All participants will be given a pseudonym which will be used across the data collection methods. Consent forms and physiological measures will be securely stored on 'Box', a cloud storage space used by the University of Essex following the General Data Protection Regulation (GDPR) guidelines. Consent forms and physiological measures data will be stored in separate folders to ensure that they cannot be matched. Upon completion of the project, the anonymised physiological measures will be published in a suitable research data repository. After ten years all data will be destroyed.

What is the legal basis for using the data and who is the Data Controller?

The legal basis for using the data is participants informed consent. The Data Controller is the University of Essex Information Assurance Manager (dpo@essex.ac.uk).

What will happen to the results of the research project?

The results collected will be analysed to explore what effect the gardening to benefit other people activity had on the participants that took part in it. The results will be written up as part of a university thesis. The thesis as a whole could be published in the future, or the data analysed could be used and published in other formats such as in academic journals at conferences, or a chapter in a book. No information will be reproduced that would enable the reader to identify you. The anonymised data will also be published in a suitable research data repository to support future research. If you wish to receive a summary of the research findings, please contact the principal researcher using the contact details provided below.

Who has reviewed the project?
This project has been reviewed and approved by the University of Essex Ethics Sub Committee 2.

Concerns and complaints
If you have any concerns about any aspect of the study or have a complaint, in the first instance please contact the principal researcher Mark Burrell, using the contact details below. If are still concerned, you think your complaint has not been addressed to your satisfaction, or you feel that you cannot approach the principal researcher, please contact the lead supervisor of the research responsible for this project, Dr Carly Wood. If you are still not satisfied, please contact the University of Essex Research Integrity Manager, Mantalena Sotiriadou (email: ms21994@essex.ac.uk). Please include the ERAMS reference which can be found at the foot of this page.

Research Team Members
The details of the team involved in this research project are:

Mark Burrell; Principal researcher and PhD candidate at the School of Sport, Rehabilitation and Exercise Sciences, University of Essex. Email mb22573@essex.ac.uk

Dr Carly Wood; Lead supervisor and lecturer in Sport and Exercise Science; School of Sport, Rehabilitation and Exercise Sciences, University of Essex. Email: cjwood@essex.ac.uk

Dr Jo Barton; Co-supervisor and Reader in Sports and Exercise Science; School of Sport, Rehabilitation and Exercise Sciences, University of Essex. Email: jobarton@essex.ac.uk

Professor Gina Reinhardt; Co-supervisor and Lecturer in the Department of Government, University of Essex. Email: gina.reinhardt@essex.ac.uk

Professor Silke Paulmann; Co-supervisor and Lecturer, and head of the Department of Psychology, University of Essex. Email: paulmann@essex.ac.uk

Thank you for taking time to read this information sheet and for your interest in contributing to help us understand the importance of meaningful activity within a nature-based mental health programme. Talking about mental health related issues can be a challenge and may cause distress. If you need to talk to someone please be assured that there are people very willing to help.

The Samaritans. Phone 116 123 open 24 hours or email jo@samaritans.org (please note it can take several days for an email reply).

NHS advice and helpline for physical and mental health. Phone: 111 open 24 hours

Mind, Uk's largest mental health charity Offers advice on mental health and where to get help in your area. Helpline: 0300 123 3393 open 9am – 6pm Monday to Friday.

Appendix H – Mixed Methods Consent Forms

Consent Form – Outcome Measures

Project Title: The effects of increasing perceived meaning and purpose behind the activities presented within a nature based mental health intervention for adults.

Research Team: Mark Burrell. Email: mb22573@essex.ac.uk. Dr Carly Wood. Email: cjwood@essex.ac.uk. Dr Jo Barton. Email: jobarton@essex.ac.uk. Professor Gina Reinhardt. Email: Gina.reinhardt@essex.ac.uk. Professor Silke Paulmann. Email paulmann@essex.ac.uk.

To take part in the study you must give consent. Please read the following statements, and if you agree with them and feel happy to participate please tick the check boxes.

I confirm that:

	Please tick the box
1. I have read and understood the information about the research study, as provided in the participant information sheets dated 25/04/2024.	☐
2. I have had an opportunity to consider the information, ask questions and have had these questions answered satisfactorily.	☐
3. I understand that I will be asked to complete four outcome measures similar to those used by Trust Links.	☐
4. I understand that my participation is voluntary, that I am free to withdraw my consent and that if I decide to withdraw, I do not need to give reasons, and that I will not be penalised, or asked why I have withdrawn, and it will not affect my relationship with Trust Links.	☐
5. I understand that if I withdraw my consent after the data has been anonymised, the data cannot be withdrawn because it is anonymous.	☐
6. I understand that my fully anonymised data may be used for research publications, book chapters, may be presented at conferences, and will be used to inform future research.	☐
7. I give permission for the anonymised data to be deposited in a suitable Research Data Repository so that it will be available for future research and learning activities.	☐
8. I understand and agree to the storage, access, and destruction of my data, as outlined in the Participation Information Sheet.	☐
9. I agree to take part in the above research project.	☐

Participant Name	Date	Participant Signature
_____	_____	_____
Researcher Name	Date	Researcher Signature

Consent Form – Focus Group

Project Title: The effects of increasing perceived meaning and purpose behind the activities presented within a nature-based mental health intervention for adults.

Research Team: Mark Burrell. Email: mb22573@essex.ac.uk. Dr Carly Wood. Email: cjwood@essex.ac.uk. Dr Jo Barton. Email: jobarton@essex.ac.uk. Professor Gina Reinhardt. Email: Gina.reinhardt@essex.ac.uk. Professor Silke Paulmann. Email paulmann@essex.ac.uk.

To take part in the study you must give consent. Please read the following statements, and if you agree with them and feel happy to participate please tick the check boxes.

I confirm that:

		Please tick the box
1.	I have read and understood the information about the research study, as provided in the participant information sheets dated 25/04/2024.	☐
2.	I have had an opportunity to consider the information, ask questions and have had these questions answered satisfactorily.	☐
3.	I understand that I will be part of a group discussion and that the discussion will be audio recorded.	☐
4.	I understand that my participation is voluntary, that I am free to withdraw my consent and that if I decide to withdraw, I do not need to give reasons, and that I will not be penalised, or asked why I have withdrawn, and it will not affect my relationship with Trust Links.	☐
5.	I understand that if I withdraw my consent after the data has been anonymised, the data cannot be withdrawn because it is anonymous.	☐
6.	I understand that my fully anonymised data may be used for research publications, book chapters, may be presented at conferences, and will be used to inform future research.	☐
7.	I give permission for the anonymised data to be deposited in a suitable Research Data Repository so that it will be available for future research and learning activities.	☐
8.	I understand and agree to the storage, access, and destruction of my data, as outlined in the Participation Information Sheet.	☐
9.	I agree to take part in the above research project.	☐

Participant Name	Date	Participant Signature
_____	_____	_____
Researcher Name	Date	Researcher Signature
_____	_____	_____

Consent Form – Physiological Measures

Project Title: The effects of increasing perceived meaning and purpose behind the activities presented within a nature-based mental health intervention for adults.

Research Team: Mark Burrell. Email: mb22573@essex.ac.uk. Dr Carly Wood. Email: cjwood@essex.ac.uk. Dr Jo Barton. Email: jobarton@essex.ac.uk. Professor Gina Reinhardt. Email: Gina.reinhardt@essex.ac.uk. Professor Silke Paulmann. Email paulmann@essex.ac.uk.

To take part in the study you must give consent. Please read the following statements, and if you agree with them and feel happy to participate please tick the check boxes.

I confirm that:

		Please tick the box
1.	I have read and understood the information about the research study, as provided in the participant information sheets dated 25/04/2024.	☐
2.	I have had an opportunity to consider the information, ask questions and have had these questions answered satisfactorily.	☐
3.	I understand I the data collection method and that I will be asked to wear sensors on the tips of my fingers.	☐
4.	I understand that my participation is voluntary, that I am free to withdraw my consent and that if I decide to withdraw, I do not need to give reasons, and that I will not be penalised, or asked why I have withdrawn, and it will not affect my relationship with Trust Links.	☐
5.	I understand that if I withdraw my consent after the data has been anonymised, the data cannot be withdrawn because it is anonymous.	☐
6.	I understand that my fully anonymised data may be used for research publications, book chapters, may be presented at conferences, and will be used to inform future research.	☐
7.	I give permission for the anonymised data to be deposited in a suitable Research Data Repository so that it will be available for future research and learning activities.	☐
8.	I understand and agree to the storage, access, and destruction of my data, as outlined in the Participation Information Sheet.	☐
9.	I agree to take part in the above research project.	☐

Participant Name	Date	Participant Signature
_____	_____	_____
Researcher Name	Date	Researcher Signature
_____	_____	_____

Appendix I – Permission to use Trust Links' Members' Secondary Data

From: Wood, Carly J
Sent: 22 April 2024 11:13
To: Gareth Evans
Subject: Secondary data

Hi Gareth,

I hope you had a good weekend.

My PhD student mark is doing one of his projects at a couple of your sites (as I expect you know). I was wondering whether it would be possible for us to access secondary data from the sites not involved in the project so that we can make some comparisons in terms of changes in wellbeing/self-esteem between the groups. We do not need this any time soon but will need to write it into our ethics. If it is ok, is the attached form still the one you use to get permission from participants to share their data.

Kind regards
Carly

Dr Carly Wood PhD, FHEA
Senior Lecturer in Sport and Exercise Science
School of Sport, Rehabilitation and Exercise Sciences
University of Essex

From: Gareth Evans
Sent: Friday, May 24, 2024 9:10 AM
To: Wood, Carly J <cjwood@essex.ac.uk>
Subject: RE: Secondary data

Hi Carly,

Apologies- It appears that I replied to this email in my head and didn't actually physically reply to you.
I'd be more than happy to share secondary data from across other sites with Mark. Can confirm that the attached form is still the one we use.

Gareth

Appendix J – Outcome Measures

Outcome Measures (Questionnaires)

The proposed study aims to collect qualitative data from several measurement tools. These are the Warwick-Edinburgh Mental Well-Being Scale, the Multidimensional Meaning in Life Scale, Purpose in Life Measure, and the Rosenberg Self-Esteem Scale. The scales have been selected to detect changes in life meaning, self-esteem, and well-being, and will be administered prior to the study and again at the end of the study.

Warwick-Edinburgh Mental Well-Being Scale

Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., ... & Stewart-Brown, S. (2007). The Warwick-Edinburgh mental well-being scale (WEMWBS): development and UK validation. *Health and Quality of life Outcomes*, *5*(1), 1-13.

Construct: Mental Wellbeing.
Purpose: The Warwick-Edinburgh Mental Well-Being Scale was designed to assess different aspects of positive mental health.

The Warwick-Edinburgh Mental Well-Being Scale (WEMWBS; Tennant et al., 2007) consists of items covering aspects of mental health including positive affect, satisfying interpersonal relationships and positive functioning. Individuals completing the scale are required to tick the box that best describes their experience of each statement over the past two weeks using a 5-point Likert scale.

Responses for the 14 items range from "none of the time," "rarely," "some of the time," "often," and "all of the time". A minimum score is 14 and maximum score is 70.

1. I’ve been feeling optimistic about the future.

2. I’ve been feeling useful.

3. I’ve been feeling relaxed.

4. I’ve been feeling interested in other people.

5. I’ve had energy to spare.

6. I’ve been dealing with problems well.

7. I’ve been thinking clearly.

8. I’ve been feeling good about myself.

9. I’ve been feeling close to other people.

10. I've been feeling confident.

11. I've been able to make up my own mind about things.

12. I've been feeling loved.

13. I've been interested in new things.

14. I've been feeling cheerful.

Short Warwick-Edinburgh Mental Well-Being Scale

1. I've been feeling optimistic about the future.

2. I've been feeling useful.

3. I've been feeling relaxed.

4. I've been dealing with problems well.

5. I've been thinking clearly.

6. I've been feeling close to other people.

7. I've been able to make up my own mind about things.

Multidimensional Meaning in Life Scale

Multidimensional MIL Scale (Costin & Vignoles, 2020) The 16-item Multidimensional Meaning in Life (MIL) Scale was developed to test whether one's sense of coherence, purpose, and mattering function as bases for making MIL judgments, and to improve upon previous measures of these four constructs by including a balanced set of positive and reverse-phrased items. In studies using this scale, one's sense of mattering, rather than coherence or purpose, emerged consistently as the strongest precursor of MIL judgments, which emphasizes the importance of sense of mattering as a basis for MIL.

Costin, Vlad (2020). Meaning is about mattering: Evaluating coherence, purpose, and existential mattering as precursors of meaning in life judgments. Journal of Personality and Social Psychology, 118(4), 864-884. doi: 10.1037/pspp0000225

Construct: Meaning in Life.
Purpose: This instrument provides users with an acquiescence-free measure of coherence, purpose, and mattering in meaning in life judgments.

The Multidimensional Meaning in Life Scale (Costin & Vignoles, 2020) is a 16-item instrument developed within the context of a study investigating purpose and existential mattering (or significance) as potential precursors of people's self-reported evaluations of meaning in life (MIL).

Respondents indicate their "feelings at the present moment." Items are rated for agreement using a 7-point Likert-type scale (1 = 'Strongly disagree' to 7 = 'Strongly agree'). Half of the items are reverse-scored.

1. My life as a whole has meaning.
2. My entire existence is full of meaning.
3. *My life is meaningless.*
4. *My existence is empty of meaning.*
5. I can make sense of the things that happen in my life.
6. Looking at my life as a whole, things seem clear to me.
7. *I can't make sense of events in my life.*
8. *My life feels like a sequence of unconnected events.*
9. I have a good sense of what I am trying to accomplish in life.
10. I have certain life goals that compel me to keep going.
11. *I don't know what I am trying to accomplish in life.*
12. *I don't have compelling life goals that keep me going.*
13. Whether my life ever existed matters even in the grand scheme of the universe.
14. Even considering how big the universe is, I can say that my life matters.
15. *My existence is not significant in the grand scheme of things.*
16. *Given the vastness of the universe, my life does not matter.*

MIL judgments = 1, 2, 3, 4; Coherence = 5, 6, 7, 8; Purpose = 9, 10, 11, 12; Mattering = 13, 14, 15, 16. Italicised items are reverse-scored.

Purpose in Life Measure

Burrow, A. L., & Hill, P. L. (2013). Derailed by diversity? Purpose buffers the relationship between ethnic composition on trains and passenger negative mood. *Personality and Social Psychology Bulletin*, *39*(12), 1610-1619.

Construct: Purpose in Life.
The Purpose in Life Measure is a 3-item test made up of items borrowed from existing measures of purpose in life, e.g., the Meaning in Life Questionnaire (Steger, Frazier, Oishi, & Kaler, 2006) and the Revised Youth Purpose Scale (Bundick et al., 2006).

Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The meaning in life questionnaire: Assessing the presence of and search for meaning in life. Journal of Counseling Psychology, 53, 80-93.

Bundick, M., Andrews, M., Jones, A., Mariano, J. M., Bronk, K. C., & Damon, W. (2006). Revised youth purpose survey (Unpublished instrument). Stanford, CA: Stanford Center on Adolescence

Participants responded to each item using a scale ranging from 1 (absolutely untrue) to 7 (absolutely true).

1. My life has a clear sense of purpose.

2. I have discovered a satisfying life purpose.

3. My life has no clear purpose.

Rosenberg Self-Esteem Scale (RSES)

Rosenberg, M. (1965). Rosenberg self-esteem scale. *Journal of Religion and Health*.

Purpose: Rosenberg's Self-Esteem Scale (Rosenberg, 1965) measures feelings of self-worth and self-acceptance.

Test Format: 4-point response format ranging from strongly agree to strongly disagree.

Rosenberg's Self-Esteem Scale is probably the most widely used measure of self-esteem for adult populations. The scale is composed of 10 items, 5 of which are negatively worded. Rosenberg's Self-Esteem Scale is the standard measure of self-esteem in psychological research.

Rate the items using the following scale: 1 = strongly agree 2 = agree 3 = disagree 4 = strongly disagree

_____ 1. I feel that I am a person of worth, at least on an equal basis with others.

_____ 2. I feel that I have a number of good qualities.

_____ 3. All in all, I am inclined to feel that I am a failure.*

_____ 4. I am able to do things as well as most other people.

_____ 5. I feel I do not have much to be proud of.*

_____ 6. I take a positive attitude toward myself.

_____ 7. On the whole, I am satisfied with myself.

_____ 8. I wish I could have more respect for myself.*

_____ 9. I certainly feel useless at times.*

_____ 10. At times I think I am no good at all.*

*reverse-scored.

Altruistic Behaviour Study Outcome Measurement Form

Today's date: Which Trust Links garden are you attending:

Your gender: Male ☐ Female ☐ Other ☐ Age:

Warwick-Edinburgh Mental Well-Being Scale

Below are some statements about feelings and thoughts. Please tick the box that best describes your experience over the last two weeks.

	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future.					
I've been feeling useful.					
I've been feeling relaxed.					
I've been feeling interested in other people.					
I've had energy to spare.					
I've been dealing with problems well.					
I've been thinking clearly.					
I've been feeling good about myself.					
I've been feeling close to other people.					
I've been feeling confident.					
I've been able to make up my own mind about things.					
I've been feeling loved.					
I've been interested in new things.					
I've been feeling cheerful.					

Rosenberg Self-Esteem Scale

Below is a list of statements dealing with your general feelings about yourself. Please tick the box to show how strongly you agree or disagree with each statement.

	Strongly Disagree	Disagree	Agree	Strongly Agree
I feel that I am a person of worth, at least on an equal basis with others.				
All in all, I am inclined to feel that I am a failure.*				
I feel that I have a number of good qualities.				
I am able to do things as well as most other people.				
I feel I do not have much to be proud of.*				
I take a positive attitude toward myself.				
On the whole, I am satisfied with myself.				
I wish I could have more respect for myself.*				
I certainly feel useless at times.*				
At times I think I am no good at all.*				

Purpose in Life Measure

Below is a list of statements dealing with your feelings about your life purpose. Please tick the box that best describes your experience over the last two weeks.

	Absolutely Untrue	Mostly Untrue	Somewhat Untrue	Can't Say True Or False	Somewhat True	Mostly True	Absolutely True
My life has a clear sense of purpose.							
I have discovered a satisfying life purpose.							
My life has no clear purpose.							

Multidimensional Meaning in Life Scale

Below is a list of statements dealing with your feelings about meaning in life. Please tick the box that best describes your experience over the last two weeks.
Scoring: Strongly Disagree = SD, Disagree = D, Moderately Disagree = MD, Undecided = U, Moderately Agree = MA, Agree = A, Strongly Agree = SA

	SD	D	MD	U	MA	A	SA
My life as a whole has meaning.							
My entire existence is full of meaning.							
My life is meaningless.							
My existence is empty of meaning.							
I can make sense of the things that happen in my life.							
Looking at my life as a whole, things seem clear to me.							
I can't make sense of events in my life.							
My life feels like a sequence of unconnected events.							
I have a good sense of what I am trying to accomplish in life.							
I have certain life goals that compel me to keep going.							
I don't know what I am trying to accomplish in life.							
I don't have compelling life goals that keep me going.							
Whether my life ever existed matters even in the grand scheme of the universe.							
Even considering how big the universe is, I can say that my life matters.							
My existence is not significant in the grand scheme of things.							
Given the vastness of the universe, my life does not matter.							

Appendix K – Altruistic Activity Study – Focus Group Schedule

Introductions

Welcome to this session

- Reiterate the right to leave at any point.
- Explain that the session is being recorded and how the session will proceed.

Ice-breaker task

- Review the thank you messages and photographs of recipients. Casual chat about giving and receiving presents / helping or receiving help, and how people feel about these concepts / preferences i.e., the giver/helper or receiver/helped.

Theme One: Experiencing the Programme

- Did taking part in the (altruistic activity) change how you experience Trust Links?
  - Begin by discussing how you usually experience Trust Links (i.e., exciting, rewarding, boring, educational, frustrating…)
- Can we explore how aware you are that Trust Links is a mental health programme.
  - Discuss whether the altruistic activity made you feel more or less aware of being on a mental health programme.

Theme Two: Meaning and Purpose

- Did the (altruistic activity) feel more meaningful than your usual garden activities?
  - Discuss what made it more / less / meaningful?
- Did the (altruistic activity) give you a sense of purpose?
  - Discuss what made it more purposeful?
- How does the increased sense of meaning / purpose make you feel?
  - Only applicable if people felt an increase in meaning and purpose.

Theme Three: Social Identity

- Social Identity Task - Please write Yes or No against the items in the list provided of the social identities that match how you felt during the (altruistic activity).
- Discuss how/why the altruistic activity contributed to create the identities chosen from the list.
  - Explore whether participants would have ticked less / different items from the list before the (altruistic activity).
  - explore participants views on what constitutes a high / low social status.

Theme Four: Psychological Well Being

- Did the (altruistic activity) effect your mental wellbeing?
  - Has it had an effect on low self-esteem, depression, lack of self-worth etc…
  - Explore what it was about the altruistic activity that affected mental wellbeing.

- Has the (altruistic activity) provided any other positive psychological benefits?
  - Such as, increased hope for a better future, life satisfaction, learning of new skills, thoughts on future goals.
  - Explore what it was about the altruistic activity that provided additional benefits.
- Do you think it will benefit your mental wellbeing if you were to take part in more (altruistic activity) in the future?
  - Discuss why more / less altruistic activity is desirable.

Closing Question

- On the themes we have been discussing, is there anything else you would like to tell me that we have not talked about?

Close the Session

- Thank the participants.
- Explain how the data will be used and what will happen next.
- Reiterate that the data will be anonymised so that no individual will be identifiable.

Social Identity Task

Task 1

Think about how you felt during the (altruistic activity). Discuss which statements you identify with or agree with.

I feel of value to my community.
I am someone who can contribute to the community.
I feel needed.
I am someone who can provide for others.
I am proud of what I did for my community.
I feel a sense of increased social status through the altruistic activity.

Task 2

Which statement do you agree with?

Helping others would be considered a low-status activity in society.
Helping other would be considered a high-status activity in society.

Appendix L – Example Interpretative Phenomenological Analysis Stages 1 – 5

Cressing Focus Group 1 Participant 3

Step 1: Reading and Exploratory Notes

I: Yeah, yeah, er, ok, [member's name] do you prefer giving or to get a gift

I: Hmm, yep, I'm the same, er, [member's name].

P3: Yeah, I'd say a bit of both, obviously, probably do prefer giving gifts because it's sort of more personal, someone you love and know well so it's quite nice to get them something that they'll really appreciate and it's a thoughtful thing so it's not just any random thing so, obviously on the opposite side a gift can almost be anything, I perceive it as, a random gift, something I would like so, but giving a gifts more straight forward in a way, but it could be more complicated if you're thinking about it a lot but it's more meaningful 1.26

Prefer to give. Personal, thoughtful, meaningful. Associates giving with love. Giving might be complicated and takes effort but it is worth it as it is more meaningful.

I: Both would be just as important to you. Ok, makes no difference. [member's name] what about you on that one, if we had, you know giving flowers to an elderly person that hasn't had any yet or the onion bed needs weeding?

P3: So, I think, because, I knew you were doing that project, and I'm seeing the point, of where it's going, in terms of having the flowers ready, the prospect of cutting them, and giving them to somebody if that was on the board I'd be quite excited about that in the background because I'd be quite curios to see how that's going to, so in some ways, I'd personally, you know if that job was on the board, I'd probably pay attention to it each week 3.96

Awareness of the worthy cause – helping make someone happy. Excited to be part of it. As a possible garden activity offered on a regular basis, P3 would choose it every week.

P3: And possibly getting everyone together as well, so it's that potential excitement and possibility of what's happening in the garden and being on the board it would be quite a clear thing so, for me personally, yeah, if that was on the board that would be more, quite possibly my number one job, it probably would be that 3.103

Sharing the activity with other members. Possibility, Potential, Excitement. A potential for something more meaningful – an activity beyond general gardening. Altruistic activity would be their favourite task.

I: Erm, I think we've already covered this, did the cut flower activity feel more meaningful than your usual garden activities?

P1: Yes

P2: Yeah I would say so

I: And the reason is?

P1: Doing it for some nice people

P2: Yeah

P3: Yeah interestingly, last week I took, I was with another member of the garden, and I was talking to them but I was subconsciously just, I took home some cut flowers, a small bunch, I think, that's going, there going home and goes up on the er, sort of side board of which it did, so that makes it more meaningful, so yeah, the thought of what you did today, bringing it home and what it represents as well, so yeah, I think it does indeed, have more meaning 4.145

Created a flower bouquet for other purposes beyond the study population. Took some home to give to parents. The providing of a gift makes the activities more meaningful, leaves P3 reflecting on their day in a positive way.

I: Yeah, perfect, erm, ah, I think we just answered this just then, how did that increased sense of meaning and purpose, if you felt that of course, make you feel, so obviously [member's name] said it really cheered him up, [members name] you said something similar

P2: Yeah it did, but I think, there was an element of sadness as well

P3: Yeah, yeah

P2:: And I, how did you feel about it

P3: I, only from, what from getting that, cos they haven't had that for a long time and missing out on something.

Sadness acknowledged through discussion but is not focused on.

P3: There was that, I think there was a lot of warmth and appreciation from, you know, something like that which is amazing, for that, and, one thing, when we did the heart test thing, I just want to say a couple of things, I think what struck me when I responded was how, you know, how, sort of how physically able they were and obviously that's one of my nightmares of being old and not being able to do anything on my own but obviously to have that gift, that must have meant a huge amount to them, to have that thought and connection to other people so it was quite striking how bad it was, sort of 5.185

Warmth. Appreciation. Perceives the flower gifts to have meant a great deal to the recipients which felt amazing. 'Meant a huge amount to them'. Reflection on growing old – surprised how physically able the elderly were. Frightened of what old age will bring. Reminded P3 that he will grow old.

I: Erm, [member's name] did it give you an increased sense of being of value to your community in any way, or that you can be of value to the community?

P3: Yeah, I think so, I think so, erm, what can I say, yeah, I think definitely there was, I think to see how powerful that is and, for me, how much in need that sort of thought, and kind of gesture, or whatever you want to call it can help people such as the elderly, so, I think it definitely did and erm, what you give back will come back to you in terms of, hearing back what the messages said so I think, and knowing what you can do hear, that it can go further, which I think is maybe something Trust Links should be doing, always to extend their outreach and the community base is to see that physically through the videos and that is quite, it helps me big time because otherwise, its, you know, throw away comments or just words, saying like you know, you hear [inaudible] but to actually see it, see who you are 7.266

Powerful. Awareness that people are in need. It only takes a bit of thought and a kind gesture to help someone. What you give will come back – P3 receives a gift in the form of the satisfaction and confirmation that they have helped someone. Thank you messages = confirmation of self-worth. '..and knowing', 'to see that physically', 'to actually see it, see who you are' = Needs the evidence, the proof that gifts were handed out where they were told they would go. Would disbelieve otherwise, would disregard the messages on their own

I: To get the evidence

P3: Further to those words that this is for the community to actually see it is quite important to me because sometimes I disbelieve a little bit, so yes, it was good 7.276

Disbelief without seeing the photographs of the recipients with their flowers. Why is P3 distrusting – is that part of their life experience to disbelieve without firm evidence?

I: Erm, does anyone agree with this statement now that I am someone who can provide for others.

I: So the recipients in this case are our community, I know they were from North Essex and not South Essex but still, erm

P3: Yeah, I'd say yes because I took the time to, yeah, all the thought that went into picking them, like, this would be a good one, kind of, everything for that thought process to, to give them something like that 8.317

A thoughtful process – took the time, carefully chose the flowers, wanted to gift something they were proud of. Activity demonstrated that they could provide for others.

P2: Yeah, that's true

P3: Yeah it does, I think there's a bit of pride there definitely 8.321

Felt pride – feeling good about helping others, feeling good about their creativity – their flower arrangement.

I: So, yeah, erm, this one's a bit tricky, last one and then we can stop doing this identity task, erm, I feel a sense of increased social status through the altruistic activity, altruism is when you do something for somebody else and you don't get anything back. Erm, so social status, let's first explore that. So helping others, is that, would you consider that a low social status in society or helping others a high social status in society?

P1: Helping other should be a high social status

I: Should be

P3: So it's more, there's two things here it's what you think it is to society and what yourself thinks it should be so it's two questions in one, so it's probably, yeah for me it should be quite high like [member's name] said, I feel it should be 9.353

P3: I'm going to say it is because it should have, it should be 9.359

Helping others 'Should' be considered a high social status activity in society – however, the would should is repeated and not just by P3 so it feels as if they want to believe giving is a high status activity but probably is not regarded as such in wider society.

I: Was everyone happy to go away and tell people for example?

P3: Yeah, I'm very happy to say that yeah, I haven't actually said that to anyone in my family yet 10.378

A reduction in stigma of sharing the event with others (in a previous one-to-one interview, P3 discusses a large concern about mental health stigma and hid their attendance at the intervention from friends).

I: Erm, so let's chuck that at you [member's name] did that activity affect your mental wellbeing in anyway?

P3: I think it did it's interesting because I remember at the time we were doing it, I, mostly I was in a really good head space, so I think it might of furthered my erm, conscientiousness of, I guess, of how I support myself and how other people can be better sort of, looked out for so obviously I look out for myself in how I, in terms of erm, erm, well it's hard to explain but I think there's an overlap with certain things that I was trying to do and then doing something like that was actually like, reinforcement for what I was doing, to have that sort of, to be able to that whilst you're, feeling so good about yourself, I think that might of helped me, in a way, psychologically it did help me in some ways, it might of, reinforcement of things so it was of some benefit to me as well as to them, so, both happened 13.486

Heightened awareness of how we can contribute and look after other people. Reinforcement for what they were doing with their life – on the right track – reinforcement of o worth while occupation. Recognises that the recipients benefited and consequently, they themselves benefitted from having been kind to others.

I: Yeah, a two way

P3: Yeah I think there was something there definitely, I enjoyed that, to have that pure enjoyment as well, that's, to do something like that was good 13.497

Double enjoyment – from gardening and from gifting and helping others. Experienced both eudemonic and hedonic pleasure.

I: So it did have that effect on them, so anyway right, any other positive psychological benefits, let's ask [member's name] that one first

P3: Well no I think there is it's just to find what ones they were really, er, erm, I think for maybe meaning and life purpose, obviously having a connection with people might have helped with my existing relationships with people at home and that, that I'm, you know, if you, I don't doubt, you know, maybe how I can support people who, weirdly like with members or anybody, family, it kind of like, I think it's helped my existing relationships in a weird way by what I see and identify and what I can do for people, it's quite meaningful, not to brag, it's more that I should see that anyway, not from er, what to boast about its more about, it gives me a boost in work and meaning and I do think about life purpose quite a bit and to have something like that which gives you a bit of purpose and things, about things and how you really, what you're doing to help people, that I think might have chimed quite strongly actually, I think that helped having that at a time when I was thinking about that anyway, to have that sort of actual, to think, for example do this [names themselves] and see how you feel it kind of replicates those feelings, maybe to challenge those [inaudible] and even every day gestures, anything really is a good thing, I think it has done something positive yeah definitely. 14/15. 559 - 572

Activity brought them closer to other people – allowed them to see how they can be more supportive in existing relationships. Helping them to identify what they can do for other people. Boost at work. Contemplate on life meaning quite a bit and the altruistic activity complemented their own interpretation of what makes a purposeful life 'helping other people chimed quite strongly'. Awareness that every day gestures can provide help to someone. Altruistic activity could promote pro-social behaviour?

I: Erm, so what was that, we are exploring if it provided any additional benefits, ok. Erm, explore what it was about the activity we did that provided those additional benefits, so let's chuck that out to you [member's name], so you did say that it provided you with some additional benefits, what was it that provided the additional benefits? Was it learning new skills, or making the cut flowers, or seeing the thank you messages and the people?

P3: I think it was both actually, yeah I think it was doing the cut flowers and putting the vase together, the arrangement together, the message as well, because obviously its going somewhere, so yeah, there's that potential of where it's going to, yeah, it's the whole, that part, the involvement, yeah I got directly involved with it I suppose, you know created a bunch and stuff, so yeah it was good, yeah 17.658

The written gift card creates another layer of personal meaning – provided evidence that it is going to someone – 'that potential'. Involvement – felt fully invested in the project and involved – excited to think about the recipient getting the flowers.

I: And last question we will explore, do you think it will benefit your mental wellbeing if we were to do more of these, giving to the community activities in the future, if we continue to do them?

P2: Definitely.

P3: I think so, yeah, I think it helps us as much as it helps them, yeah I think so, yep, be involved in a group 17.666

Enjoys being part of a group activity. Recognises a symbiotic relationship – recipients benefit from someone thinking about them, and participants benefit from having provided for someone.

I: And do you have anything that would be more personally meaningful to you, for example somebody at Shoebury said they wanted to do something for children with learning difficulties and they did admit that they didn't care so much about old people, but they would love to do something for children with special needs

I: So if we were to completely open up the garden to like, any meaningful activity for any type of population is there anyone you'd like us to target?

P2: I just think anyone that's alone, anyone who lives alone, or who is lonely really.

P3: Erm, yeah, generally that as well, people, obviously from where I've come from, when I started as a member here years ago I really didn't know myself at all so maybe somehow, working with people who are really struggling to know what they are doing with life and just struggling maybe like I was, maybe working with people like that possibly, yeah, so, helping them to know themselves and not actually the thing they've been diagnosed with for me that's actually quite important, learning how Aspergers makes me, and so someone else could benefit from a similar experience as I did, on the autism spectrum or whatever 17. 677 - 683

Repay those that helped him by helping others like he was years before.

I: So as you say, you got diagnosed with Aspergers

P3: Hmm

I: And so it would be very meaningful to you to help other people with Aspergers?

P3: I think so definitely, particularly if they've got similar, like circumstances where they've got no clue what they are doing, and erm, they doubt themselves and they can't see what's possible, I felt like that for quite a long time so 17.687

Meaning and purpose would be increased if P3 helped those who are struggling with the same existential crises that they had when younger – self-doubt – cannot see any potential, not knowing what to do with life. Autism / Asperger population – shared diagnosis and experiences.

Step 2: Formulating Experiential Statements From P3's Transcript

probably do prefer giving gifts because it's sort of more personal, someone you love and know well… a thoughtful thing 1.26

Prefer to give. Personal, thoughtful, meaningful. Associates giving with love.

could be more complicated if you're thinking about it a lot but it's more meaningful 1.30

Giving might be complicated and takes effort but it is worth it as it is more meaningful.

and I'm seeing the point, of where it's going…and giving them to somebody…I'd be quite excited about that…if that job was on the board, I'd probably pay attention to it each week 3.96

Awareness of the worthy cause – helping make someone happy. Excited to be part of it. As a possible garden activity offered on a regular basis, P3 would choose it every week.

getting everyone together as well, so it's that potential excitement and possibility of what's happening in the garden…quite possibly my number one job, it probably would be that 3.103

Sharing the activity with other members. Possibility, Potential, Excitement. A potential for something more meaningful – an activity beyond general gardening. Altruistic activity would be their favourite task.

interestingly, last week I took…home some cut flowers…so that makes it more meaningful…the thought of what you did today, bringing it home and what it represents as well…it does indeed, have more meaning 4.145

Created a flower bouquet for other purposes beyond the study population. Took some home to give to parents. The providing of a gift makes the activities more meaningful, leaves P3 reflecting on their day in a positive way.

only from, what from getting that, cos they haven't had that for a long time and missing out on something 5.185

Sadness acknowledged through discussion but is not focused on.

there was a lot of warmth and appreciation from, you know…which is amazing… to have that gift, that must have meant a huge amount to them, to have that thought and connection to other people 5.185

Warmth. Appreciation. Perceives the flower gifts to have meant a great deal to the recipients which felt amazing. 'Meant a huge amount to them'.

that's one of my nightmares of being old and not being able to do anything on my own 5.193

Reflection on growing old – surprised how physically able the elderly were. Frightened of what old age will bring. Reminded P3 that he will grow old.

I think to see how powerful that is…how much in need that sort of thought, and kind of gesture…can help people such as the elderly 7.265

Powerful. Awareness that people are in need. It only takes a bit of thought and a kind gesture to help someone.

what you give back will come back to you in terms of, hearing back what the messages said…knowing what you can do hear, that it can go further… to see that physically through the videos and that is quite, it helps me big time because otherwise, its, you know, throw away comments or just words, saying like you know…but to actually see it, see who you are 7.266

What you give will come back – P3 receives a gift in the form of the satisfaction and confirmation that they have helped someone. Thank you messages = confirmation of self-worth. '..and knowing', 'to see that physically', 'to actually see it, see who you are' = Needs the evidence, the proof that gifts were handed out where they were told they would go. Would disbelieve otherwise, would disregard the messages on their own

to actually see it is quite important to me because sometimes I disbelieve a little bit 7.276

Disbelief without seeing the photographs of the recipients with their flowers. Why is P3 distrusting – is that part of their life experience to disbelieve without firm evidence?

I'd say yes because I took the time to…all the thought that went into picking them…for that thought process to, to give them something like that 8.317

A thoughtful process – took the time, carefully chose the flowers, wanted to gift something they were proud of. Activity demonstrated that they could provide for others.

I think there's a bit of pride there definitely 8.321

Felt pride – feeling good about helping others, feeling good about their creativity – their flower arrangement.

it's what you think it is to society and what yourself thinks it should be…yeah for me it should be quite high like [member's name] said, I feel it should be 9.353 I'm going to say it is because it should have, it should be 9.359

Helping others 'Should' be considered a high social status activity in society – however, the would should is repeated and not just by P3 so it feels as if they want to believe giving is a high status activity but probably is not regarded as such in wider society.

Yeah, I'm very happy to say that yeah 10.378

A reduction in stigma of sharing the event with others (in a previous one-to-one interview, P3 discusses a large concern about mental health stigma and hid their attendance at the intervention from friends).

at the time we were doing it, I, mostly I was in a really good head space…it might of furthered my erm, conscientiousness of, I guess, of how I support myself and how other people can be better sort of, looked out for…reinforcement for what I was doing…I think that might of helped me, in a way, psychologically it did help me in some ways, it might of, reinforcement of things so it was of some benefit to me as well as to them, so, both happened 13.486

Heightened awareness of how we can contribute and look after other people. Reinforcement for what they were doing with their life – on the right track – reinforcement of o worth while occupation. Recognises that the recipients benefited and consequently, they themselves benefitted from having been kind to others.

I enjoyed that, to have that pure enjoyment as well, that's, to do something like that was good 13.497

Double enjoyment – from gardening and from gifting and helping others. Experienced both eudemonic and hedonic pleasure.

having a connection with people might have helped with my existing relationships with people at home…maybe how I can support people who, weirdly like with members or anybody, family, it kind of like, I think it's helped my existing relationships in a weird way by what I see and identify and what I can do for people 14.559 - 563

it gives me a boost in work and meaning and I do think about life purpose quite a bit and to have something like that which gives you a bit of purpose…what you're doing to help people, that I think might have chimed quite strongly actually, I think that helped having that at a time when I was thinking about that anyway…and even every day gestures, anything really is a good thing, I think it has done something positive yeah definitely 14/15. 559 - 572

Activity brought them closer to other people – allowed them to see how they can be more supportive in existing relationships. Helping them to identify what they can do for other people. Boost at work. Contemplate on life meaning quite a bit and the altruistic activity complemented their own interpretation of what makes a purposeful life 'helping other people chimed quite strongly'. Awareness that every day gestures can provide help to someone. Altruistic activity could promote pro-social behaviour?

the message as well, because obviously it's going somewhere…there's that potential of where it's going to…that part, the involvement, yeah I got directly involved with it 17.658 - 660

The written gift card creates another layer of personal meaning – provided evidence that it is going to someone – 'that potential'. Involvement – felt fully invested in the project and involved – excited to think about the recipient getting the flowers.

I think it helps us as much as it helps them, yeah I think so, yep 17.666

Recognises a symbiotic relationship – recipients benefit from someone thinking about them, and participants benefit from having provided for someone.

people, obviously from where I've come from, when I started as a member…I really didn't know myself…working with people who are really struggling to know what they are doing with life…struggling maybe like I was, maybe working with people like that…learning how Aspergers makes me, and so someone else could benefit from a similar experience as I did, on the autism spectrum 17. 677 - 683

Repay those that helped him by helping others like he was years before.

definitely, particularly if they've got similar, like circumstances where they've got no clue what they are doing, and erm, they doubt themselves and they can't see what's possible, I felt like that for quite a long time so 17.687

Meaning and purpose would be increased if P3 helped those who are struggling with the same existential crises that they had when younger – self-doubt – cannot see any potential, not knowing what to do with life. Autism / Asperger population – shared diagnosis and experiences.

Step 3: Clustering of Experimental Statements

A

Giving is personal and associated with love

Giving takes effort, thought and is more meaningful

B

Helping others ‘Should’ be a high social status activity

A reduction in stigma and happy to disclose altruistic activity

C

Altruistic activity helped with existing relationships

Promote further altruistic activity

Reflection and reinforcement for purposeful life goals

D

Writing a personal greeting card created a further connection to recipients

Increased connection to recipients through imagining how recipients felt

E

Enhance wellbeing through helping others

Enhanced enjoyment through increased meaningful occupation

Enhanced wellbeing through feeling pride

F

Ideological message reinforces the importance of kind gestures

Ideological messages provide evidence and confirmation

Ideological message prevents disbelief

G

Altruistic activity makes garden tasks more meaningful

Altruistic activity creates excitement – favourite task

Would pay attention to the altruistic activity every week

Altruistic activity increased sense of wellbeing

H

Reflection on getting old themselves

Reflection on sad elements

I

Help people to find their direction in life

Helping people on the Autistic spectrum is more meaningful

Step 4: Table of Personal Experiential Themes

	Page/Line	Quotes
Theme 1: Giving to others is meaningful		
Giving is personal and associated with love	1.26	probably do prefer giving gifts because it's sort of more personal, someone you love and know well… a thoughtful thing
Giving takes effort, thought and is more meaningful	1.30	could be more complicated if you're thinking about it a lot but it's more meaningful
Theme 2: Social status and stigma		
Helping others 'Should' be a high social status activity	9.353	it's what you think it is to society and what yourself thinks it should be…yeah for me it should be quite high like [member's name] said, I feel it should be
A reduction in stigma and happy to disclose altruistic activity	10.378	Yeah, I'm very happy to say that yeah
Theme 3: Reflect, reinforce and react		
Altruistic activity helped with existing relationships	14.559 - 563	having a connection with people might have helped with my existing relationships with people at home…maybe how I can support people who, weirdly like with members or anybody, family, it kind of like, I think it's helped my existing relationships in a weird way by what I see and identify and what I can do for people
Promote further altruistic activity	14/15. 559 - 572	it gives me a boost in work and meaning and I do think about life purpose quite a bit and to have something like that which gives you a bit of purpose…what you're doing to help people, that I think might have chimed quite strongly actually, I think that helped having that at a time when I was thinking about that anyway…and even every day gestures, anything really is a good thing, I think it has done something positive yeah definitely
Reflection and reinforcement for purposeful life goals	13.486	at the time we were doing it, I, mostly I was in a really good head space…it might of furthered my erm, conscientiousness of, I guess, of how I support myself and how other people can be better sort of, looked out for…reinforcement for what I was doing…I think that might of helped me, in a way, psychologically it did help me in some ways, it might of, reinforcement of things so it was of some benefit to me as well as to them, so, both happened
Theme 4: A connection is made		
Writing a personal greeting card created a further connection to recipients	17.658 - 660	the message as well, because obviously it's going somewhere…there's that potential of where it's going to…that part, the involvement, yeah I got directly involved with it
Increased connection to recipients through imagining how recipients felt	5.185	there was a lot of warmth and appreciation from, you know…which is amazing… to have that gift, that must

		have meant a huge amount to them, to have that thought and connection to other people
Theme 5: Enhance wellbeing through altruism		
Enhance wellbeing through helping others	17.666	I think it helps us as much as it helps them, yeah I think so, yep
Enhanced enjoyment through increased meaningful occupation	13.497	I enjoyed that, to have that pure enjoyment as well, that's, to do something like that was good
Enhanced wellbeing through feeling pride	8.321	I think there's a bit of pride there definitely
Theme 6: Seeing is believing		
Ideological message reinforces the importance of kind gestures	7.265	I think to see how powerful that is…how much in need that sort of thought, and kind of gesture…can help people such as the elderly
Ideological messages provide evidence and confirmation	7.266	what you give back will come back to you in terms of, hearing back what the messages said…knowing what you can do hear, that it can go further… to see that physically through the videos and that is quite, it helps me big time because otherwise, its, you know, throw away comments or just words, saying like you know…but to actually see it, see who you are
Ideological message prevents disbelief	7.276	to actually see it is quite important to me because sometimes I disbelieve a little bit
Theme 7: Altruism is meaningful and contagious		
Altruistic activity makes garden tasks more meaningful	4.145	interestingly, last week I took…home some cut flowers…so that makes it more meaningful…the thought of what you did today, bringing it home and what it represents as well…it does indeed, have more meaning
Altruistic activity creates excitement – favourite task	3.103	so it's that potential excitement and possibility of what's happening in the garden…quite possibly my number one job, it probably would be that
Would pay attention to the altruistic activity every week	3.96	and I'm seeing the point, of where it's going…and giving them to somebody…I'd be quite excited about that…if that job was on the board, I'd probably pay attention to it each week
Altruistic activity increased sense of being able to provide for others	8.317	I'd say yes because I took the time to…all the thought that went into picking them…for that thought process to, to give them something like that
Theme 8: Reflection on life		
Reflection on getting old themselves	5.193	that's one of my nightmares of being old and not being able to do anything on my own
Reflection on sad elements	5.185	only from, what from getting that, cos they haven't had that for a long time and missing out on something
Theme 9: Personally meaningful population		
Help people to find their direction in life	17.687	definitely, particularly if they've got similar, like circumstances where they've got no clue what they are

		doing, and erm, they doubt themselves and they can't see what's possible, I felt like that for quite a long time so
Helping people on the Autistic spectrum is more meaningful	17. 677 - 683	people, obviously from where I've come from, when I started as a member…I really didn't know myself…working with people who are really struggling to know what they are doing with life…struggling maybe like I was, maybe working with people like that…learning how Aspergers makes me, and so someone else could benefit from a similar experience as I did, on the autism spectrum

Step 5: Table of Group Experiential Themes

Participant	Extract	Page/Line
Group Experiential Theme 1. The experience of giving and making gifts		
1a. General thoughts and feeling towards giving gifts		
Felicia	I do prefer giving because I always put a lot of thought and I like to make gifts	1 / 19
Daniel	probably do prefer giving gifts because it's sort of more personal, someone you love and know well… a thoughtful thing	1 / 24 - 26
Penelope	I do enjoy, or again, even making presents for people	1 / 10
Walter	I prefer to receive a present, I do enjoy giving presents	1 / 12
Gerald	Cheer yourself up. You cheer yourself up	1 / 22 - 24
Sidney	I think it's the only thing that gives you a bit of emotion, you know, giving something to someone	1 / 15
Bridgette	Yeah that's it, as [member's name] says it's always nice to give	1 / 21
1b. Feeling towards having made flower bouquets for the elderly		
Felicia	the whole effort of time put into it so you think god, you've made all these people incredibly happy	12 / 471
Daniel	the message as well, because obviously it's going somewhere…there's that potential of where it's going to…that part, the involvement, yeah I got directly involved with it	15 / 596 - 597
Penelope	I enjoyed doing that, to give to someone to, make things happier, and to feel less lonely and less isolated	2 / 74 - 75
Walter	I quite enjoyed making the bunches of flowers and thinking this is going to go to someone and they're going to enjoy it	4 / 176 - 177
Sidney	knowing that you're doing it for someone. Yeah, cos when we were making them, we wanted to make them look nice	5 / 159
Group Experiential Theme 2. Experiencing the altruistic activity		
2a. Altruistic activity benefited psychological wellbeing		
Felicia	I would prefer to do it for someone, you know, the flowers …I would say I haven't got a purpose so that would be a purpose	3 / 119
Daniel	so it's that potential excitement and possibility of what's happening in the garden…quite possibly my number one job, it probably would be that	3 / 93 - 95
Penelope	It's given me that boost to, erm, because sometimes if you're having a bad day and that, I can suddenly think, well I can contribute to society, I can do this and I can do that	9 / 353 - 354
Walter	being a help to other people, so it's allowed me to shift my point of view from well there's a little feeling of I've not got a job anymore and I'm a bit pointless, to, oh you're not pointless at all	9 / 373 - 374
Gerald	Positive. Yeah. Cos it was such a damn good job	10 / 306
Sidney	Yeah, cos we all wanted to make them look nice, we didn't just all stick them in a jar and go that'll do	5 / 161 - 162
Bridgette	Yeah, because I think once you knew there was a purpose to it and the reason	3 / 100 - 101

2b. Indifference to altruistic activity		
Felicia	You were showing us what to do, and the you made the labels mostly didn't you, and then you delivered, you found the people and you delivered them	14 / 548 - 549
Walter	In terms of its meaningfulness, I didn't really feel the meaningfulness until I'd seen the video	4 / 173 - 174
Bridgette	I wasn't really thinking about it, it was just something you were doing	5 / 153 - 154
Sidney	I don't feel like any of this any way no matter what I do so. I am a robot, that's what I feel like. I think it's just the drugs they give you, they just make you emotionless	7 / 220 - 222
Group Experiential Theme 3. The creative process		
Felicia	we had chosen them and they were grown and everything it was like another layer…putting the effort in, you've thought about it you've made it by hand	12 / 466 - 468
Daniel	I'd say yes because I took the time to…all the thought that went into picking them…for that thought process to, to give them something like that	8 / 289 - 290
Penelope	although I didn't plant any of the flowers, I helped pick them where I could and I enjoyed putting the bunches of flowers together and trying to do some things like purples and whites	2 / 70 - 71
Walter	I enjoyed the picking and bunching	2 / 83
Sidney	It started annoying more when people kept saying that, you should be a florist… Yeah, certain people snatched on and started doing it	12 / 375 - 379
Bridgette	I think it gave us something to focus on because obviously we were going around choosing the colours. And it was positive in a way, and like, ooh, I'll have that colour and I'll have that colour, and I'll have that and I'll have that [laughs]	9 / 282 - 284
Group Experiential Theme 4: Exposure to ideological messages		
4a. Ideological messages boosts meaningfulness and wellbeing		
Felicia	it was lovely because each one was a really happy positive message after watching the video, then erm, it did (enhance life purpose)	12 / 464 4 / 142
Daniel	what you give back will come back to you in terms of, hearing back what the messages said…knowing what you can do hear, that it can go further… to see that physically through the videos and that is quite, it helps me big time	7 / 244 - 247
Penelope	I find the whole project here is meaningful, but then there was this extra bit of meaningfulness on top…you actually saw then end result of giving those flowers, So it was a bit more meaningful because you saw those videos of the flowers	4 / 142 - 145
Walter	seeing the videos, not just of the lady who received my bunch because you told me who it was in advance, but all of them, it was very erm, moving…for me the meaningfulness wasn't really apparent until the video	4 / 177 - 180
Gerald	Big difference yeah, yeah	2 / 54
Sidney	Yeah, I did actually, yeah, not my own one, but just seeing the whole thing	10 / 307
Bridgette	Yeah it did, seeing it, obviously the wider picture…actually seeing that, for those few moments	8 / 270 - 271
4b. Ideological messages promote reflecting on life		

Felicia	I felt very sad for them…they need that, we can't do it, but they need, they could do with something like that every other week	11 / 419
Daniel	at the time we were doing it, I, mostly I was in a really good head space…it might of furthered my erm, conscientiousness of, I guess, of how I support myself and how other people can be better sort of, looked out for	12 / 445 - 447
Penelope	It has reinforced that I can provide for others through the Trust Links project	7 / 265
Walter	I think it's pointed out to me the fact that doing good things to help other people is a valuable contribution to society	9 / 369 - 370
4c. Imagining recipients reactions		
Felicia	I felt as if there was an element of pity…probably thought we were, you know when you say mental health issues you don't know how bad we are	6 / 211 - 213
Daniel	there was a lot of warmth and appreciation from, you know…which is amazing… to have that gift, that must have meant a huge amount to them, to have that thought and connection to other people	5 / 172 - 177
Walter	I quite enjoyed making the bunches of flowers and thinking this is going to go to someone and they're going to enjoy it	4 / 176 - 177
Bridgette	seeing their faces and that you think oh yeah, you could see how pleased they were, and the smiles	8 / 248 - 249
Group Experiential Theme 5: Seeing is believing		
5a. Evidence required to motivate action		
Felicia	we need to be reminded of what they look like…this is what they're going to look like and wow they're going to be amazing	15 / 563 - 566
Penelope	should do things slightly different next time, as you say after the first few have been, have some stills or video explaining how happy they are to receive the flowers and stuff	5 / 187 - 188
Walter	I didn't have a core this is going to be really good feeling at the beginning, it was more I wonder how this will work out	3 / 166 - 167
Gerald	Cos it worked	15 / 472
5b. Disbelief and doubt in the project		
Felicia	I just imagined picking little flowers, but they were huge, and big, you know, so, it was hard to imagine	15 / 584 - 585
Daniel	to actually see it is quite important to me because sometimes I disbelieve a little bit	7 / 251 - 252
Walter	I didn't think I disbelieved it was happening, more thinking, I wonder how this will work	3 / 113 - 114
Gerald	Is that where they all came from? The little seedlings. Blimy, I didn't know that	14 / 455 - 457
Sidney	We'll we didn't, cos I just thought, you'd get rid of it, but how much bramble and crap that is there would just take over again	13 / 426 - 427
Group Experiential Theme 6: Longer, closer and more personal		
6a. A desire to have gotten closer to the recipients		

Felicia	what would have made quite a big difference for me is to have heard a recording of their voice	16 / 637 - 638
Sidney	If I see them in front of me smiling and that, I'd probably feel better, if I went into the room and they all went, why obviously you'd get more emotion	11 / 355 - 356
Bridgette	It's not so much us giving them but if…I appreciate why you did the voice over…but if they'd have spoken them	8 / 263 - 264
6b. Increased exposure to altruism would increase wellbeing		
Felicia	I think if it continued…then you would, I would have more purpose	4 / 145 - 147
Walter	I think for me purpose would need to be something that would be repeated and ongoing…this is like a little nugget of, of giving some pleasure to somebody else	5 / 195 - 198
Sidney	I reckon it would, yeah	12 / 393
Group Experiential Theme 7: Personally meaningful population		
Felicia	who I think feel very isolated are young single mums as well, it can be very lonely as a single mum	17 / 654 - 614
Daniel	working with people who are really struggling to know what they are doing with life…struggling maybe like I was, maybe working with people like that	16 / 612 - 614
Sidney	when I done them ones for me mum and gave them to her, there was something like, an hour later, yeah. It felt, yeah, cos that's me mum	2 / 65 - 68
Bridgette	like I said earlier, working with a school for disabilities, a special needs school or something like that	10 / 318 / 319
Group Experiential Theme 8: Social status and stigma		
Felicia	if it was regular, even if it was a regular thing, we're picking vegetable or whatever and we're giving them like to the local foodbank then, I would, I would tell people	10 / 364 - 365
Daniel	Yeah, I'm very happy to say that yeah	9 / 364
Penelope	I view society as everybody has high status, but society views it a different way	7 / 303 - 304
Walter	you ask if it's increased our own sense of social status and my answer to that is yes although society might not see that view	8 / 316 - 317
Sidney	It should be high	7 / 214
Bridgette	I'd say high (status), helping other people	5 / 170
Gerald	High	7 / 213

Note: Step 6: Final Stage = Report the Results

Appendix M – Flower Bouquets Created by Trust Links Participants

Appendix N – Example Ideological Messages and photograph

Dear Trust Links

My flowers are absolutely gorgeous so thank you for including me. I hear that the cut flower garden is a triumph and ablaze with colour. Mark has promised me a photograph of this. It is a wonderful idea to use flowers from your garden to cheer people up, especially people who live all alone and don't see anyone, sometimes for days at a time. I like to do things for other people too. I knit little hats for premature babies and a lady comes and collects them when I have a bag full. I usually sit knitting them in front of the tele, they are quite a quick to make. I love being able to contribute to a good cause.

Thank you again for my flowers

Julia, 77.

Dear [Trust Links member's name]

I had a visit from Mark today with some lovely flowers. That big yellow one, is it really a sunflower? Isn't it beautiful. Mark told me that you were a nice young man who cares for the people at your garden. He also told me you have a cheeky sense of humour which is a wonderful thing to have, never lose that. I suppose I should tell you something about me. I am very old, 93 and live alone. I enjoy reading and playing the piano, but only in private, I would never dare let anyone hear me play. Thank you so much for these lovely flowers, you have made my day.

Blessings

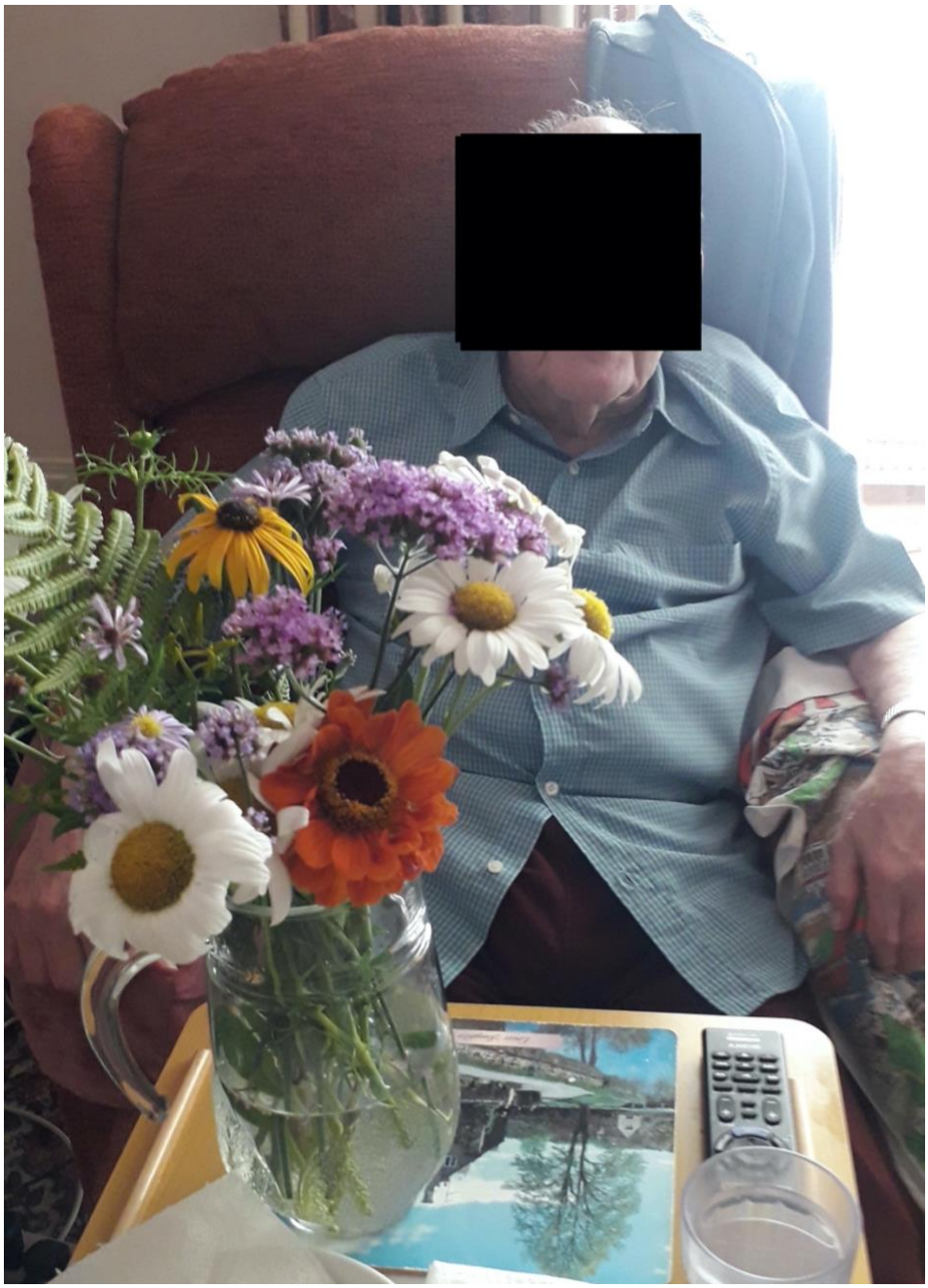
Anne, 93.

Dear Trust Links

I loved my garden and feeding the birds but I can no longer get out into the garden. I am 97 and recently had a pacemaker fitted. I had a fall and now must be very careful. I try to stay a cheerful chappy despite not being able to do anything for myself. It is frustrating at times. I have careers come four times a day so I do see people and of course Mark came this morning with my flowers. What a lovely idea. I can't get out into the garden, but we can bring some garden inside can't we. Thank you and God bless.

Geoffrey, 97.

Geoffrey, 97



Face obscured as consent was only given for photographs to be shared with study participants.

Appendix O – Researcher Diary Extracts from volunteering at Trust Links

Friday 13th October 2023

Met [member name] today. Appears to be a volunteer but is a member. Attends for depression since [private reason]. He was a successful [occupation] with a high position. Attends as he enjoys helping others and teaching gardening. Is a knowledgeable kitchen gardener. Would be interesting to interview to learn more about how helping people contributes to his wellbeing and to get his opinion on other service users' social difficulties.

Tuesday 21 November 2023

I have become the glue that sticks people together. [Member name], [member name], [member name] all sit by themselves until I strike up a 'forced' conversation and the result is that we form a little group that chats together. Without me doing this, I believe most people would go without any socialisation. I managed to inform [multiple members names] of my research today and mentioned that after Christmas I will discuss the study in depth and would be looking for participants. There were a few grins of nervous uncertainty at this, however, members are getting more used to my presence and are becoming more comfortable.

Westcliff 28 / 11 / 2023

[Member name] – comes to Westcliff and sits alone all day from 9:30am to 3:30pm mostly outside on a picnic bench where [they] also eat lunch alone. [They] spend the whole time looking at their phone. I noticed [identifying data follows] and used it to try and engage in a conversation about it. [They] did speak to me about this however it was a strained conversation mostly one-sided. [Members name] just about looked up at me from [their] phone to talk. The interaction was very short. I hope to try again to connect as [they] would be very interesting / relevant to talk to for my research.

Friday 1st December 2023

Gave my research presentation to the group as a whole today at lunch time. The act of discussing why I was there and what my research was about had a dramatic effect on the members. I seemed to go from trusted friend to something to be afraid of. Most members looked away and concentrated on their lunch.

Trust Links facilitator comment – "Members have a mistrust of the NHS and clinical practitioners. They do not like being treated as medical cases instead of people. They want to be made to feel of value by treating them respectfully, listening to them, learning their names, and spending time with them."