The association between income, relationships and psychological distress.

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A thesis submitted for the degree of Doctor in Clinical Psychology

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April 2024

Acknowledgments

Firstly, I would like to thank my supervisors for all their support throughout this process. Susan, thank you for always being there to give me encouragement and support when I needed it, and being so prompt with your feedback. Cara, thank you for your patience and guidance when I was navigating the statistics and results section.

Secondly, I would like to thank all my family and friends who have supported me to get to this point. In particular, Roma, Hannah, Natalie and all the doctorate girls for being there to cheer me up and cheer me on through some of my toughest times at university. Natalie B, I could not have survived the statistics and rewrites without your support. Thank you to my parents for prioritising my education and supporting me, both emotionally and financially, to achieve my qualifications. Thank you to my grandparents for inspiring me to work hard and reminding me that my best efforts are definitely good enough. Special thanks go to my sister for always being there to support me academically, and for being the first person to recognise my dyslexia.

Last but not least, I need to give a special mention to my husband. You have borne the brunt of my stress in the last few years and your sacrifices have not gone unnoticed. Thank you for helping me calm down and for making all my dinners when I was too stressed to cook!

Abstract

This study used data from the UK Household Longitudinal Study (UKHLS) to investigate potential associations household income and psychological distress, and between relationship quality and being diagnosed with a mental health condition. Psychological distress was measured using the General Health Questionnaire (GHQ) and information regarding psychiatric diagnosis status was collected as part of the UKHLS questionnaire. Equivalised household income was calculated by dividing household income by the number of people living in the household. Relationship quality was measured using two subscales from the Revised Dyadic Adjustment Scale (RDAS). The findings suggest that household income was negatively associated with psychological distress; however, effect sizes were small. There was no significant association found between relationship quality and having a mental health condition. The findings are interpreted in the context of social stratification and intersectionality theory, before implications and recommendations for future research are suggested.

Contents

Chapter 1: Introduction

This chapter examines and evaluates existing literature on undiagnosed psychological distress. It begins by looking at relevant definitions, before exploring the prevalence, causes and impacts of undiagnosed distress. The chapter then leads on to a systematic review investigating the relationship between undiagnosed mental distress and relational and socioeconomic factors within households. The narrative synthesis looks at how the presence of undiagnosed psychological distress in a household impacts on household income, and family functioning and dynamics. The chapter ends by identifying the gaps in the current literature and how this thesis will address them.

Undiagnosed Psychological Distress

Ridner (2004) defined psychological distress as "the unique discomforting, emotional state experienced by an individual in response to a specific stressor or demand that results in harm, either temporary or permanent, to the person" (Ridner, 2004, p. 539). Ridner explained that a defining feature of psychological distress is that an individual perceives themselves as being unable to cope with a stressor. If the individual feels that they are able to cope with the stressor, then no psychological distress will be experienced. Psychological distress is a broad term which is used to describe emotional suffering, whereas mental health problems or disorders are conditions which are defined by specific medical criteria, and must cause the person distress and impact their functioning (National Institutes of Health (US), 2007). Therefore, we expect that anyone suffering from a mental health problem to be experiencing psychological distress, however, it is possible to experience psychological distress without having a mental health problem. Undiagnosed distress refers to the experience of psychological distress in those who have not received a psychiatric diagnosis from a mental health or medical professional. In the context of this thesis, the term "undiagnosed" is used to describe people who report that they have not received a diagnosis of psychiatric, nervous or

emotional disorder. This is not to suggest that they should have received a diagnosis, it is simply to describe that they have not received one.

Origins of diagnosis

In clinical medicine, diagnosis identifies which label best explains a patient's symptoms (Ilgen et al., 2016). There are usually measurable physical indicators as to the presence of the condition, and the purpose of the diagnosis is to help identify the specific pathological process causing the condition so that the best course of treatment can be used (Phillips et al., 2012). Humans have been using diagnosis for thousands of years, as it is said to originate from ancient Greece, when physicians would record detailed observations of their patients to try to identify diseases based on the symptoms a person presented with (Walker, 1990; Kleisiaris et al., 2014). Over time, medical diagnoses became more sophisticated as tools were developed to assist clinicians in identifying diseases, such as laboratory tests and imaging scans (Berger, 1999). Although psychiatry is also said to have originated from the practice of observing symptoms, it is reported that by the 19th century there were two competing classification systems: symptom-based and cause-based. However, the symptom-based classification system dominated the field as the causes of psychiatric disorders were difficult to clearly identify (Shorter, 2015).

Psychiatric conditions are thought to arise from a complex interaction of biological, psychological and social elements (Maung, 2016). Despite this, psychiatric diagnosis originated from the belief that mental disorders are real entities that exist in the natural world, which are waiting to be discovered (Hoff, 2015). However, psychiatric diagnosis is based on subjective observations, rather than objective measurable data (Craddock & Mynors-Wallis, 2014). Therefore, some argue that disease is an entirely socially constructed concept, that it is just a name we have given to naturally occurring processes (Rosenberg et al., 1992). For instance, labelling theory, as proposed by Scheff (1966), suggests that labelling behaviours as

mental disorders causes people to act in a way that is consistent with that disorder, and causes other people to treat them as such. Therefore, the simple act of labelling someone as having a disorder can have disastrous consequences for their mental health. These ideas have underpinned the ongoing criticisms of psychiatric diagnoses.

Bogdanova et al. (2022) explained that in order for a person to receive a psychiatric diagnosis, they must first recognise their experiences as being due to a disorder. This can be referred to as a 'self-diagnosis.' The person must then consult with a mental health professional in order to obtain a psychiatric diagnosis. There are a number of reasons why an individual may not consider their symptoms to be a mental disorder, for instance, some cultures view distress very differently. For example, just some of the explanations for mental illness from other cultures are dysfunctional relationships, energy imbalances in the body, and spiritual or supernatural forces (Tyson & Flaskerud, 2009). These different views of mental health also mean that cultures will experience different feelings of shame and stigma when seeking support (Ahad et al., 2023), therefore, some cultures are more likely to access help from informal rather than professional sources (Memon et al., 2016).

The Diagnostic System

Psychiatric diagnosis is said to be important for numerous reasons. Firstly, to help mental health professionals describe presentations and consider appropriate interventions (Sartorius, 2015). It is also said to enable communication between researchers and comparisons between studies (Craddock & Mynors-Wallis, 2014). The two most commonly used classification systems for diagnosing psychiatric disorders are The Diagnostic and Statistical Manual of Mental Disorders (DSM) in the USA, and the International Classification of Disease, which is used worldwide (Dattani, 2023). The idea of providing a system for classifying diseases across the world was originally conceived in 1893 by the International Statistical Institute (Manchikanti et al., 2013). This system became increasingly more detailed as it underwent

five revisions, before it was adopted by the World Health Organisation (WHO) in 1948 and named the ICD-6. This was the first version of the classification system to include psychiatric disorders (Hirsch et al., 2016). The ICD aimed to clearly define diseases so that governments and healthcare professionals from different countries could monitor diseases within different populations (WHO, 2024). The DSM was developed by the American Psychiatric Association in 1952, specifically to classify psychiatric disorders (McPherson & Armstrong, 2006). The DSM aimed to clearly specify the criteria for diagnosing different mental health conditions to help to make psychiatric diagnoses more reliable in the hopes that this would support researchers to identify the causes of different disorders (First et al., 2021). However, both the ICD and the DSM have been criticised for their categorical and pathologizing approach (Wakefield, 2015), which many feel fails to capture the complexity of human experience (Khoury et al., 2014). Furthermore, both classification systems have been developed predominantly in Western Cultures, with the DSM being developed by the American Psychiatric Association, and the ICD being developed by the World Health Organisation in Europe. Therefore, behaviours classified as 'symptoms' may be interpreted differently in different cultural contexts (Watabe et al., 2022).

Critiques Psychiatric Diagnosis

In addition to criticising the classification systems, many clinicians and researchers take issue with the entire concept of psychiatric diagnosis, arguing that it negatively affects recovery, contributes to stigma, and does not help to identify appropriate interventions (Timimi, 2014). There are particular concerns regarding the reliability of psychiatric diagnoses, as it is well documented that levels of reliability among clinicians are consistently inadequate (Aboraya et al., 2006), and that it is common for clients to receive multiple diagnoses (Aboraya, 2007).

One of the uses of psychiatric diagnoses is said to be that they predict treatment responses (Jablensky, 2016), however, there is evidence that psychiatric diagnoses do not reliably

predict which interventions will be successful (Bentall, 2003). Furthermore, Boyle (2007) mentions that comorbidity (having more than one psychiatric diagnosis at the same time) and dual diagnosis (substance use alongside a psychiatric disorder) are reasons that are increasingly being used to justify why diagnoses do not reliably predict symptoms and treatments outcomes. However, by focusing on diagnosis, such explanations serve to pathologise the person and in doing so potentially neglect to consider other factors that contribute to distress. This can cause systemic influences on mental health to be overlooked, and therefore policies fail to address critical factors such as social services, including housing, employment, and education.

The validity of a psychiatric diagnosis means how well the diagnosis represents the symptoms of the underlying condition it is supposed to describe (Kendell & Jablensky, 2003). However, many people question the validity of psychiatric diagnosis, as diagnostic categories overlap, and therefore they do not appear to accurately describe underlying conditions if they are not able to distinguish between them (Allsopp et al., 2019). This presents challenges for both clinical practice and research. For instance, Read and Mayne (2017) found that psychiatric diagnoses were limiting when investigating the relationships between adversity and distress in children and adolescents. Despite this, many studies continue to use diagnostic categories in research and exclude those with undiagnosed psychological distress (Nguyen et al., 2015). Furthermore, studies using categories of psychiatric diagnosis are used for prevalence estimates, on which the need for resources and services are based (Mechanic, 2003; Alonso et al., 2004). This means that resources may be allocated based on unrepresentative figures, as undiagnosed distress may not be taken account of in research. Notably, there are individuals who express a need for services but do not meet the specific criteria for a formal diagnosis. Moreover, there are cases where individuals do not receive a formal diagnosis but still experience significant distress. All of

the above suggest that there are significant flaws in the diagnostic system, as it does not adequately represent people's experiences of distress.

Medicalisation is a term used to describe when mental distress occurs in response to challenging life circumstances, but it is interpreted as a medical condition requiring a medical intervention (Thomas et al., 2018). For instance, to get a sickness certificate a person must see a doctor, which often leads to medicalisation as normal emotions experienced in response to difficult life circumstances are labelled as a disorder. A further example of this is when grief, a normal response to the loss of a loved one, is diagnosed as a depressive disorder, which is a prominent concern since the "Bereavement Exclusion" was removed from the criteria for Major Depressive Disorder in the DSM-5 (American Psychiatric Association, 2013). The Bereavement Exclusion was a clause in the DSM that prevented a diagnosis of major depression if the symptoms emerged after a bereavement. Many clinicians are concerned that removing this clause risks normal grief reactions being pathologized and mislabelled as a mental illness. When psychological distress is seen as a medical issue rather than a social or political issue, the focus tends to be on treating the individual, rather than addressing wider issues such as deprivation, poor quality housing and other inequalities. Unfortunately, this means that pharmaceutical companies profit from medicating normal reactions to trauma, whilst the underlying causes of distress continue (Penson, 2012).

Most current treatments in the UK are based on the medical model of mental health and treat mental distress as though it is contained within the person (Stein et al., 2022). However, despite investments in mental health services, the number of people suffering from mental health problems is in increasing in the UK (Baker & Kirk-Wade, 2023) and relapse rates are high, with one study finding that over half of NHS mental health patients experience a relapse (Ali et al., 2017). This suggests that the current focus on treating mental ill health is not sufficient, and perhaps a change in perspective will be key for containing the mental health

crisis (Bracken et al., 2012). Emphasis on the medical model means that research investigating interventions for impairment are prioritised over research into social change which could help to improve the lives of people with distress (Reindal, 2000). Indeed, services in the UK are based on findings from the National Institute of Clinical Excellence (NICE), which promotes the use of quantitative research and emphasises the use of interventions to treat specific conditions, in keeping with a medical model stance on distress (Gerard, 2010).

In recent years NICE has faced an abundance of criticism, with some even suggesting that it could cause medical harm to patients. The distribution of resources within the NHS is based upon NICE guidance, and therefore NICE has a huge influence on standards of patient care (Rost & McPherson, 2018). Fundamental concerns about NICE remain, particularly regarding methodological issues. Many professionals are concerned about the over reliance on randomised control trials (RCTs) in the context of mental health, as they may fail to capture the complex presentations of mental health problems, or the subjective experiences of individual patients. Furthermore, NICE has been criticised for failing to collate data on important indicators of severity, complexity and chronicity, such as employment, trauma history and physical comorbidity. Moreover, there are issues with how NICE has categorised the participants in reviews. For example, some have been classified as having one disorder when they meet the criteria for others, and some have been classified as 'less severe' under NICE's method of classification, whereas other, validated measures would classify them as 'more severe.' (McPherson, 2020). This highlights how issues with the current classification system in the UK are potentially having a negative impact on how mental health services are designed and resourced.

Prevalence and burden of undiagnosed mental health in UK

Research suggests that a large proportion of people experience mental distress without receiving a diagnosis from a mental health professional. The Health Survey for England 2015 found that as many as 18% of the adults surveyed were suffering with a mental illness which had not been diagnosed (NHS Digital, 2016). Furthermore, over 33% of people surveyed in the 2014 UK Adult Psychiatric Morbidity Survey (APMS) believed they had a mental health problem but had never received a psychiatric diagnosis (Stansfeld et al., 2016). The APMS is a survey which was originally commissioned by the UK Department of Health in the 1990s. The first survey was completed in 1993, and it has been conducted approximately every seven years since then (Social Research Association, 2023). The survey aims to assess prevalence and trends of mental disorders in the general population. For each study cycle a sample of the general population is screened by interviewers using the Revised Clinical Interview Schedule (CIS-R). The CIS-R is a structured assessment tool that was designed so that it can be administered by researchers who do not have professional mental health training to diagnose common mental health problems (Subramaniam et al, 2006). Much of the data in the APMS is gathered from the initial screening using the CIS-R administered in the first phase (Appleby et al., 2014), but those identified as being at high risk of autism or psychosis are invited for a second interview by clinically trained professionals.

The CIS-R was originally developed and validated in the UK and Chile (Lewis et al., 1992) but has since been used in many cultures across the world and has been described as the benchmark assessment to which other instruments are compared (Patel et al., 2008). Although it has been validated in many countries it is not universally validated, so researchers should be careful to ensure that it is only used in the specific cultures it has been validated in (Das-Munshi et al., 2014). Therefore, it is unclear whether the CIS-R would be valid for people living in the UK who grew up in other cultures, especially as validation

studies of the CIS-R in the UK were completed many years ago (Lewis et al., 1992), and may not reflect the diversity of the current UK population. Furthermore, whilst the CIS-R reportedly has good reliability and validity ratings, an interview completed with a non-specialist is not a substitute for a diagnostic assessment with a trained professional, using in depth interviews over several sessions. Therefore, using the CIS-R will impact the reliability and validity of APMS, as the diagnoses indicated by the CIS-R are unlikely to be as accurate and considered as a diagnosis given by a mental health professional (Appleby et al., 2014).

Despite its limitations, a strength of the APMS is the comprehensive data it collects. For instance, it collects income and demographic data so socioeconomic associations can be identified. Moreover, the fact that it samples from the general population, rather than just those with a diagnosed disorder, means that people who are not known to mental health services are also included. Furthermore, the use of the CIS-R means that people who meet the criteria for a mental disorder, but are undiagnosed, can be identified (McManus et al., 2016). However, although the APMS collects relevant socioeconomic information, the survey is still strongly influenced by the medical model of mental health, as it focuses on whether people meet the criteria for diagnosable disorders rather than looking at general distress and wellbeing.

Table 1.

Summary of different indicators used to diagnose distress in literature

Measure of Diagnosis	Brief Description	Advantages	Disadvantages
Revised Clinical Interview Schedule (CIS-R)	Structured interview examining symptoms of 10 common mental disorders from the ICD-10	Validated in many countries including the UK and Chile Good reliability and validity Can be administered by researchers without mental health training so can be cost effective to administer	Not universally validated so researchers must consider the culture of the participants being screened
Composite International Diagnostic Interview - Short Form (CIDI-SF)	Structured interview valuating nine mental health and substance use disorders from the DSM-III	Good reliability and validity Used globally in large scale epidemiological studies by the World Health Organisation Can be administered by researchers without mental health training so can be cost effective to administer	The instrument was developed based on the DSM-III and may not as accurately reflect the diagnoses of more recent versions of the DSM or ICD so it is no longer used
Mini International Neuropsychiatric Interview (MINI v6)	Structured diagnostic interview assessing for 17 psychiatric diagnoses from the DSM-IV	Good reliability and validity More detailed clinical interviews Validated in the US and Europe	Validation studies were completed over 20 years ago. Risk of overdiagnosis, particularly for depression, when compared to the CIS-R and the CIDI
Structured Clinical Interview for the DSM-IV (SCID)	Semi structured interview tool to assist clinicians in diagnosing from the DSM IV. Different modules are available for different types of disorders so clinicians can choose the module most relevant to the client's presentation. 12 modules are available in total	Good reliability and validity Covers the widest range of disorders	Needs to be conducted by trained interviewers with a clinical background and access to supervision to achieve good reliability and validity so could be more expensive to administer

Prevalence and burden of undiagnosed mental health worldwide

Undiagnosed psychological distress is being recognised as an issue in many countries across the globe. The National Mental Health survey in India estimated that less than 20% of people experiencing symptoms of depression seek treatment for their distress (Gautham et al., 2020). This is corroborated by the finding that as many as 90% of depression cases in those aged over 45 years old in India go undiagnosed (Perianayagam et al., 2022). The former study only sampled from across 12 states in India, representing approximately 60% of the population, whereas the latter study sampled across all states, so is more representative of the geographical population, however, it only included people aged 45 and over. Therefore, both studies are somewhat lacking in representing the entire population, unlike the APMS in the UK which was designed to be representative of the entire adult population over the age of 16.

Perianayagam et al (2022) used the Composite International Diagnostic Interview - Short Form (CIDI-SF) to diagnose depression. This tool is reported to be a reliable and valid diagnostic tool for depression in research and has been used in large scale epidemiological studies around the world, in the USA, Canada and WHO World Mental Health survey (Patten et al., 2000; Kessler & Üstün, 2004). The MINI version 6 is a brief structured diagnostic interview that assesses mental health disorders and substance dependence against the diagnostic criteria of the DSM IV and the ICD-10. The MINI has similar psychometric properties to the CIDI and more complex diagnostic interviews (Lecrubier et al., 1997; Amorim, 2000). However, many of the validation studies for the MINI were conducted over twenty years ago. More recently a study has identified that the MINI is more likely to diagnose depression than other clinical interviews, such as the CIDI or the Structured Clinical Interview for the DSM (SCID) (Wu et al., 2020). It is important to be cautious of overdiagnosis, as there is growing concern that overdiagnosis of mental illness is being driven by pharmaceutical companies to increase sales of medications (Moynihan et al., 2013).

That said, neither paper declared any financial relationships with organisations interested in the work. Elsewhere in Asia, the number of undiagnosed cases of depression is reported to be increasing in Malaysia (Chidambaram, 2022). The increase in cases is said to be at least in part related to the COVID-19 pandemic, however, this source did not report the procedures for collecting and analysing data, therefore, it is difficult to judge the integrity of this claim.

The USA National Survey on Drug Use and Health (NSDUH) collects data from across 50 states to report on the prevalence of mental health issues, access to and outcomes from mental healthcare in the USA (Center for Behavioral Health Statistics, 2022). Whilst the survey does not provide information regarding the prevalence of undiagnosed mental health issues or distress, it does report that approximately 50% of Americans with a mental health issue (diagnosed or undiagnosed) did not receive treatment. Whilst we may acknowledge that some may have chosen not to seek treatment, it is reported that 27% of adults who wanted treatment were unable to access it, this was mainly due to issues with insurance and not being able to afford mental healthcare (Reinert et al., 2022). The survey assessed mental illness based on an adapted version of the Structured Clinical Interview for the DSM-IV-TR Axis I Disorders, Research Version, Nonpatient Edition (SCID-I/NP) (First et al., 2002). This measure has demonstrated good reliability and validity, however, this is when it is conducted by trained interviewers, ideally with a clinical background and adequate supervision. The methodology does not state the training or supervision that interviewers received. Furthermore, the methodology of the study does not state which adaptations were made, so we cannot be sure whether the reliability and validity of the adapted version used in the survey was comparable to reported levels.

The NSDUH findings are somewhat corroborated by another study from the USA. Handy et al. (2022) reported that approximately 30% of respondents scoring within the moderate and severe ranges on the Patient Health Questionnaire (PHQ-9) did not have a formal diagnosis of

depression. Participants completed the PHQ-9 anonymously online. This study used a convenience sample of 200 people, which was not representative of all ethnic and income groups, so generalising the findings to the population of the USA is an overgeneralisation. Furthermore, whilst the PHQ-9 reports strong reliability and validity (Kroenke et al., 2001), some studies have raised concerns that it does not adequately capture the experiences of those with depression (Robinson et al., 2017). Moreover, the development of the PHQ-9 was financed by the pharmaceutical company, Pfizer, which may represent a conflict of interest as this company is likely to profit from increased rates of depression through antidepressant medication (Cowley et al., 2021;Manea et al., 2017).

Also in the USA, Nguyen et al. (2015) found that psychological distress was linked with increased healthcare usage. However, this looked at healthcare usage for both physical and mental health, so it is unclear whether the increased usage was to access support for mental or physical health. That said, another paper from the USA, found that psychological distress is linked with physical health. The findings of Williams et al. (2017) appear to support Nguyen et al. (2015) as they report that depression is more likely to be undiagnosed in people with comorbid physical health conditions. They suggest that this is because the clinician is focused on the physical health condition and fails to notice the symptoms as depression. There may also be issues with the generalisability of this study, as respondents lived in one neighbourhood in New York City, which has a higher than average population of ethnic minorities, and therefore results may not be representative of the general population. It is difficult to make direct comparisons between these studies as they all used different outcome measures, therefore, more research will be needed in this area.

Income and undiagnosed mental distress

Low income and financial strain have been consistently linked with psychological distress (Collin et al., 2020). Many people with financial difficulties experience distress due to

concerns about meeting their needs and the needs of their family, such as being able to afford food and good quality housing (Ryu & Fan, 2023). When people feel unable to meet those needs, they are likely to experience psychological distress.

In addition to low income leading to psychological distress, there is evidence that an individual experiencing mental health problems can have serious financial implications for them and their families (Waghorn et al., 2005). Schofield et al. (2011) report that the financial effects of being out of work due to mental illness can continue to impact an individual and their families for the rest of their lives, due to the time spent out of work and the resultant impact on accrued savings. This is particularly important, as given the reported impact of financial strain on mental health this suggests that a vicious cycle of financial difficulties and psychological distress will be difficult to break, and that family members are likely to be caught up in that cycle. Furthermore, it has been suggested that a possible mechanism for the relationship between parental mental health and child mental health outcomes is the financial situation of the household (Simpson et al., 2023). Vera-Toscano & Brown (2021) reported that disadvantage in early life was the most influential factor in the intergenerational correlation of mental health. Furthermore, Johnston et al. (2013) report that poor maternal mental health is related to lower educational attainment, lower income and increased likelihood of involvement in criminal activities. These are all factors which have been linked with socioeconomic disadvantage and poorer mental health outcomes (Smith et al., 2023). Accumulative disadvantage helps explain how many factors interconnect to create a cycle of economic hardship and psychological distress that can continue across generations.

Family Stress Theory (Hill, 1949) helps to explains the cumulative impact that low income and other disadvantages have on psychological distress in households. The theory was developed to help explain how some families struggle to cope with stress, whereas others are

able to adapt (Casaburo et al., 2023). The theory states that a family's ability to adapt is influenced by four elements: the stressor, the resources available, the perception of the stressor and the outcome of the stressor. Income is likely to impact on a household's ability to cope by influencing all four of these elements. Low income can serve as a stressor itself and also affects the resources available to the household which might be used to cope with stress, such as social support and leisure activities (Reid, 2012). Furthermore, the negative impact on mood may alter the perceptions of stressors, as those experiencing low mood are more likely to see challenges from a negative lens (Beevers et al., 2019). Finally, the cumulative impact of these factors can result in further negative outcomes, such as housing instability, difficulties with work and relationships (Rajgopal, 2010), ultimately creating an ongoing cycle of hardship and distress.

Emotional contagion and social contagion theories can also explain how mental distress impacts on household income. Low mood has been linked with reduced motivation, therefore, when negative emotions spread through a household via emotional contagion, it could affect the motivation of all household members (Elfenbein, 2014). This reduction in motivation could impact on work performance, and low mood has also been linked with irresponsible financial decisions, both of which would impact on household income (Johnson, 2008). Indeed, it has been reported that distress impacts on work performance and thus may limit opportunities for career progression (Stewart et al., 2003). Social contagion theory would predict that irresponsible decisions and reduced productivity would also be adopted by other household members. The combination of these effects have the potential to seriously impact the income of a household.

The impact of policies relating to income

Despite the link between income and mental distress, few high-income countries have investigated whether policies targeting poverty have any impact on mental health outcomes

(Collin et al., 2020). Studies on the impact of cash transfers (monetary assistance provided to those in need) across the globe have yielded mixed results, with some finding improvements in mental health (Angeles et al., 2019; Kilburn et al., 2016; Owusu-Addo et al., 2018) and others finding no improvement (Morris et al., 2017).

In the USA, the Earned Income Tax Credit (EITC) scheme was introduced to help tackle poverty. Low-income working families who qualified received a refund on a proportion of their tax paid as an annual lumpsum. There are mixed results as to the effects of this programme on psychological distress. Rehkopf et al. (2014) reported positive effects on mental health, whereas Collin et al. (2020) reported that there was no short-term effect on psychological distress. Other research has found that EITC is associated with a reduction in psychological distress (Boyd-Swan et al., 2016; Evans & Garthwaite, 2014) and suicide rates (Lenhart, 2019; Dow et al., 2020). However, these studies have been criticised for using data which are out of date, and for potential misclassifying those who are entitled to the ETIC programme.

In contrast, schemes which restrict income have been shown to negatively impact mental health. In the UK, the welfare system has undergone significant changes in the past two decades. After being announced in 2010, Universal Credit was a scheme that was gradually implemented in phases to different localities across the country between 2013 and 2018. The scheme aimed to combine six means-tested welfare benefits into a single payment (Wickham et al., 2020). However, the scheme was extensively criticised due to several issues, including delays in payment and difficult-to-use online systems which meant that many people were pushed into poverty and struggled with their mental and physical health as a result (Cheetham et al., 2019). Additionally, in 2010, the Work Capability Assessment was introduced for people claiming Employment and Support Allowance (ESA, previously known as Disability Benefit). By 2016, approximately 18% of those claiming ESA had been moved to the Work-

Related Activity Group (WRAG), meaning that they had been deemed capable of undertaking work-related activities, and therefore must prove they were engaging in such activities, or risk having their benefits cut or stopped. In addition, the payments received for those in the WRAG group would be brought in line with Jobseeker's Allowance, meaning a reduction of almost £30 per week. The aim of these policies was reportedly to halve the disability employment gap (the gap between the number of disabled and non-disabled people in employment), however, the policies have been widely criticised. Many critics say that there is no evidence that sanctions or threats of sanctions are successful in influencing disabled people's engagement with work-related activity. Furthermore, there is a growing body of evidence that it actually has the reverse effect, by detrimentally affecting the mental health of those under threat of sanction so that they are struggling more than they were before, creating further problems for the state (Dwyer et al., 2019; Mehta et al., 2021).

Wickham et al's (2020) findings suggest that universal credit did not improve employment rates and was associated with significantly increased psychological distress. Ridner reports that psychological distress is dependent on whether someone feels able to cope with a stressor (Ridner, 2004). It is reported that when someone considers or completes suicide, they feel unable to cope with a stressor (Pavulans et al., 2012), so we can be confident that increased suicidality is an indicator of increased psychological distress. Therefore, Wickham et al's (2020) findings are supported by Stansfeld et al. (2016) who concluded that the introduction of universal credit and WRAG were associated with worsening mental health as 66% of people receiving Employment and Support Allowance (ESA) had experienced suicidal thoughts, and 43% had attempted suicide. However, it is unclear whether this was due to the amount of income, or other factors associated with claiming ESA, such as living with a chronic illness or disability. That said, Barr et al. (2015) appear to support the findings that changes with ESA are associated with increased rates of mental distress and suicidality. They

reported that as the number of people reassessed for a Work Capability Assessment increased in a particular area, so did the number of suicides, self-reported mental health problems and prescriptions for antidepressant medications (Barr et al., 2015). Moreover, it was noted that the most deprived areas experienced the greatest increase in negative mental health outcomes. Therefore, despite apparently intending to reduce health inequalities, the findings suggest that the changes actually widened health inequalities.

A number of studies have found that welfare reforms had the biggest adverse impact on vulnerable groups. For example, Bourquin et al. (2019) reported welfare reforms reduced the income of those in the lowest income group by 20%. Furthermore, families with children, particularly single parent families, were more likely to be negatively impacted by welfare reforms than families without children (Simpson et al., 2023). These studies are supported by similar findings regarding the adverse impact of welfare reforms on single parent families in both the USA (Davis, 2018) and UK (Katikireddi et al., 2018). Distress may be caused by other difficulties in combination with financial difficulties. For example, living in poverty increases a woman's risk of experiencing mental health problems following intimate partner violence (McManus et al., 2016). These findings suggest that those in society who were already at increased risk of stigma and disadvantage, have been further disadvantaged by welfare reforms.

Why does so much mental distress remain undiagnosed?

One of the reasons that mental illness is not diagnosed is because people do not seek support for their distress. Statistics in the UK suggest that large numbers of people do not seek support from health professionals. For instance, it is reported that 72% of people who completed suicide between 2002 and 2012 did not discuss suicidal thoughts with a health professional in the year before their death. Cage et al. (2020) found that over 30% of university students who suspected they had a mental health issue did not seek support for this.

This is corroborated by research from Salaheddin and Mason (2016) which identified that 35% of young people surveyed did not seek support for an emotional or mental health difficulty. The main themes identified for people not accessing support related to stigma, a preference for alternative forms of coping/support, difficulties identifying or expressing difficulties and inaccessibility of support. These themes are explored in more detail below.

Not recognising a need for support

Biddle et al. (2007) posit that it is not people's inability to recognise their own mental distress which influences their help-seeking. Rather, it is their ability to recognise the distress as abnormal and needing intervention that influences whether they are likely to seek help for it. One paper found that among a survey of college students in the USA, failing to recognise the need for treatment was the leading cause of not seeking support (Czyz et al., 2013). Failing to recognise the need for support has been found to be a barrier to help seeking across the globe, in low-, middle-, and high-income countries alike (Thornicroft et al., 2017). Thornicroft et al. (2017) reported that 43% of those identified as experiencing MDD did not recognise a need for treatment. This suggests that another reason for people not accessing health services, and therefore not receiving a professional diagnosis, is that many do not recognise their symptoms as requiring intervention. This study investigated the rate of people accessing support for Major Depressive Disorder (MDD) across 21 countries. The definition of support in this study included non-medical and non-specialist treatment providers, such as spiritual advisors and any other kind of healer. This research was undertaken using data collected from the World Health Organisation World Mental Health Surveys. This involved representative community household surveys gathered across 21 countries.

It should be noted that conflicts of interest were highlighted in the Thornicroft et al. (2017) paper. One of the authors was associated with a large pharmaceutical company, and a healthcare research company. It is important to recognise these potential conflicts of interest

when interpreting the recommendations of the paper. The paper highlights that people need to recognise their symptoms as depression and access treatment for it. The idea that distress is classified as an illness, which the sufferer must accept, is a key message in anti-stigma campaigns which Thornicroft and colleagues are involved with (Thornicroft et al., 2014); Thornicroft et al., 2016). However, such campaigns have received criticism on the basis that such messages encourage marginalisation of those experiencing mental distress, by setting up a mentality that those who are unwell are different from those who are well (Speed & Taggart, 2019). This topic is discussed in more detail below.

Inaccessible services

People may not access support because they are unaware of the support that is available to them. Indeed, a survey by the National Union of Students found that students were often unaware of the support they could access for their distress (NUS, 2017). Furthermore, some groups, such as people with low incomes, appear to experience discrimination when they try to access support. Lubian et al. (2016) found that when seeking support for mental health difficulties, people living in lower income households were less likely to receive treatment than people in higher income households. There is also evidence that the income of a patient influences how GPs prescribe medication (Covvey et al., 2014), with one study reporting that GPs were more likely to prescribe expensive medications to patients with higher incomes (Walters et al., 2008a).

Furthermore, it has been reported that people living in low-income communities are more likely to be prescribed psychiatric medication than those with higher incomes (Morrison et al., 2009; Benson et al., 2015). This overreliance on psychiatric medication in low-income communities may be influenced by the WHO List of Essential Medications, which is a tool used by countries to decide how to allocate treatments when resources are limited (Kar et al., 2010). However, the United Nations has raised concerns that categorising these medications

as ‘essential’ encourages the overuse of medication to treat mental distress, and risks preventing access to non-pharmacological based treatments for distress (United Nations General Assembly, 2020).

In addition to making it more difficult to access psychological support, overuse of medication could also impact on people’s decision to seek support for their distress, as hearing experiences of others who sought support and received unhelpful or harmful medication may influence the help seeking behaviours of others in the community. Furthermore, the theory of planned behaviour predicts that one of the main influences on behaviour is one’s perceived ability to action a behaviour (Abraham et al., 2011). Therefore, if people are feeling a perceived sense of hopelessness due to reports of inaccessible services, the theory of planned behaviour predicts that they will be less likely to seek support from those services.

Stigma

Stigma can be described as the way society responds to people with mental health issues, and this has been identified as a barrier to seeking support (Cage et al., 2020). For instance, Sambrook Smith et al. (2019) found that negative attitudes towards mental health led to feelings of stigma and guilt, and delayed people seeking support for perinatal mental distress. Corrigan (2004) proposed two different types of stigma, public and self, with the former representing an individual’s perception that others in the group believe them to be unacceptable, and the latter representing one’s own beliefs about themselves as being unacceptable. It has been suggested that people are less likely to seek help due to the self-stigma associated with asking for help, rather the stigma associated with having a mental illness (Tucker et al., 2013). Cage et al. (2020) found this to be true when they investigated help-seeking in students in the UK, as people’s self-stigma of seeking help predicted whether someone would access professional help. However, self-stigma did not predict whether someone asked for help from informal sources, suggesting that students are more likely to

speak about their distress within friends and family than service providers. This idea is supported by another paper which found that people are more likely to disclose suicidal thoughts to friends and family than professionals (Husky et al., 2016).

In the past two decades several countries have initiated anti-stigma campaigns in an effort to reduce the negative impact of the stigma facing those with mental distress (Morgan & Jorm, 2007; Smith, 2013; Thornicroft et al., 2014; Hansson et al., 2016). However, as mentioned previously, some critics have claimed these campaigns may have harmful effects, due to their alliance with the medical model of mental health. In promoting the message that mental distress is an illness contained within an individual, these campaigns promote a narrative of those with mental health struggles being weak and ineffective, and being seen as different from those who are not suffering (Oute et al., 2015). Furthermore, in encouraging perceptions based on the medical model of mental health, the campaigns risk minimising the impact of societal influences on mental health (Speed & Taggart, 2019). Oute and colleagues go as far as to say that "campaigns set up a framework for managing deviant subjects" (Oute et al, 2015, p. 282). It has been reported that individuals with mental health diagnoses are often perceived as exhibiting greater irrationality compared to those without such diagnoses (Britten et al., 2010). It is possible that the promotion of narratives of distressed people as mentally ill, irrational deviants is encouraged by governments as a way of detracting from and devaluing claims that austerity measures are to blame for the increasing levels of mental distress in their country.

Implications of undiagnosed mental distress

Mental health support in the UK is intrinsically linked with diagnosis, as many secondary care services require a diagnosis, or offer diagnosis as part of assessment and intervention (Chaplin et al., 2022). Therefore, those without a diagnosis may be missing out on professional support from mental health services. Indeed, the Department of Health found

that approximately 75% of people with psychological distress in England do not get access to the treatment they need (Department of Health, 2014). Undiagnosed mental distress can cause problems for an individual and society, for instance, distress may affect an individual's work performance. Employees may struggle to access the adjustments they need from their employer without a diagnosis, therefore adding to the distress of the individual and reducing productivity for the employer (Spandler et al., 2015).

Furthermore, mental health issues are sometimes misdiagnosed as physical health problems such as gastrointestinal issues, migraines and fatigue. In addition to using NHS resources, such misdiagnoses are harmful for clients due to the potential impacts of unnecessary medical investigations and treatment, and the long-term impacts of distress on the body (Manjunatha & Ram, 2022). Furthermore, people who are unable to access support for their distress turn to other coping strategies, some of which may be harmful to themselves and others, such as substance abuse and gambling, both of which have been linked with antisocial and offending behaviours (Turanovic et al., 2012).

However, psychological distress being undiagnosed could also have positive implications. Through not receiving a diagnosis for psychological distress, people may benefit from avoiding medicalisation of normal human emotions in response to difficult life events (Rapley et al., 2011). For example, people who are diagnosed with depression following a bereavement, traumatic incident or financial difficulties. Overdiagnosis such as this can lead to the prescribing of medication which causes unpleasant side effects and dependency (Edinoff et al., 2021). Indeed, Public Health England have raised concerns about the number of people taking prescription drugs long-term, and the impact of side effects and dependency (Public Health England, 2019). Furthermore, such diagnoses can promote the narrative that there is something wrong with the person leading to shame, stigma and reduced self-efficacy. Therefore, by distress remaining undiagnosed it can prevent the onus being placed upon the

individual, and place more emphasis on social explanations of distress. Many people prefer to seek support for distress from non-medical sources, such as by accessing support within their community (Walters et al., 2008b). However, this is reliant on sufficient resources being available within the community.

Alternative sources of support

It has been suggested that those people categorised as not recognising the need for support may not in fact need support due to strong coping abilities (Cage et al., 2020). A further reason for people not accessing professional support or diagnoses for their distress is that they are being supported by other sources. For instance, many people access support within their community from peer support programmes, where people with lived experience support each other in coping. A number of studies in the UK have demonstrated positive outcomes for peer support interventions (Together for Mental Wellbeing., 2012; Cyhlarova, 2015). Furthermore, lifestyles changes such as improving exercise and nutrition have been found to reduce psychological distress (Stranges et al., 2014). Numerous studies have identified a reduction in depressive symptoms following exercise interventions (Cooney et al., 2013; Brown et al., 2013). The implementation of exercise programmes has also been reported to improve mental health outcomes for people with a diagnosis schizophrenia and schizoaffective disorder (Stanton & Happell, 2014; Browne et al., 2016). Carter et al. (2015) report that being able to choose the preferred intensity of the exercise regime may lead to increased benefits for psychological distress. Although some of these studies investigated the outcomes of people with diagnosed conditions, we can infer that others in the general population may be managing similar symptoms with their own exercise regimes.

Another reason people may prefer not to seek support for their psychological distress is that there are concerns regarding harmful side effects and limited effectiveness of some medications for mental ill health (Gøtzsche et al., 2015). A study investigating the

experiences of adolescents with depression in the UK found that almost 20% of those who used antidepressants prior to commencing a psychological intervention had poorer quality of life than those who had not taken antidepressants before beginning psychological treatment (Cousins et al., 2016). There is evidence that people can feel pressured into taking psychotropic medications from medical professionals and friends and family (Rogers et al., 1998). Therefore, people may feel reluctant to seek support so as not to incur the pressure to take medication. Research has highlighted various concerns regarding taking psychotropic medications, such as, dependency, side effects, concerns regarding effectiveness and reduced feelings of autonomy. Furthermore, it has been reported that to take medication means accepting one's diagnosis, and sometimes refusing medication is synonymous with refuting one's diagnosis (Semahegn et al., 2020).

There is evidence that services which do not rely on specific diagnoses are successful. For instance, the open-dialogue approach which has been devised in Finland. This approach is based on the systemic understanding of mental health, which views mental distress as existing outside of the individual, within the relationships between people (Bowen, 1966). The open-dialogue approach aims to minimise the use of psychiatric medication and instead focus on the psychological and social factors contributing to someone's distress. Services using an open-dialogue approach have shown positive outcomes in Finland, and these outcomes were shown to be maintained at 20-year follow up (Bergström et al., 2018). This approach has also shown positive outcomes when used in mental health services in various countries (Freeman et al., 2019), including in the UK within the NHS (Razzaque & Stockmann, 2016; Hendy & Pearson, 2020). However, some concerns have been raised regarding the methodology of these studies and the evidence base for open-dialogue. Much of the evidence is based on qualitative studies with small sample sizes, and many of the reviews have been conducted by the developers of the technique. It has been suggested that

larger scale empirical studies will be needed to evidence the validity of this approach (Kinane et al., 2022).

Although many people may be accessing support from informal sources, there are a number of people who do not seek any support for their distress. Thornicroft et al. (2017) reported that 30% of people who identified themselves as needing treatment did not visit a service provider for support. The definition of service provider in this study did not only include mental health professionals, but also non-medical and non-specialist treatment providers, such as spiritual advisors and any other kind of healer. This suggests that there are other reasons why people may not seek help for their distress.

How are households affected by psychological distress?

There is growing evidence that those with mental health problems have a significant impact on the people they live with (Karp, 2001). Several themes have been consistently identified from the evidence base regarding carer burden: stigma, wellbeing and disrupted relationships. This section will seek to briefly outline the relevant research from each of these themes. Although psychological wellbeing and psychological distress are different concepts, there is such a strong negative correlation between them that it is widely accepted that a reduction in someone's wellbeing is usually associated with an increase in psychological distress (Meng & D'Arcy, 2016), therefore, studies reporting a reduction in wellbeing seem relevant to include in relation to this topic. Indeed, some researchers have even argued that negative correlation between the two concepts is so strong that it has been it is unnecessary for researchers to measure the concepts separately (Winefield et al., 2012).

Stigma

It has been reported that those close to an individual experiencing a mental illness experience stigma by association (Östman & Kjellin, 2002). Furthermore, it has been reported that

individuals who expect stigmatised responses withdraw from social contact and reduce their social connections (Rössler, 2016). This represents another way that relatives can be impacted by the family members psychological difficulties, a finding which was corroborated by Priestley et al. (2018) and Gammage & Nolte (2020). Gammage and Nolte highlight the importance of understanding and communication regarding the family members difficulties in coping with their issues. Some research has shown that diagnosis can aid understanding of a family members mental health problem (Pollio et al., 2001). However, Priestley et al. (2018) report that although a depression diagnosis initially appeared to offer an explanation which separated the depression from the person and provided a focus of something to 'fix', the initial positive effect of the diagnosis was not sustained. They explained that after some time elapsed the depression appeared more complexly intertwined with the person than the diagnosis had initially indicated, and the diagnosis did not lead to the hoped-for solutions and improvements. The authors reflected that the finding that diagnosis initially offered hope, but eventually failed to deliver expected solutions, differed from previous research in the area. They questioned whether this was related to the fact that the sample included those who were self-diagnosed as well as people with clinically diagnosed depression. This suggests that there may be some differences in how the partners of self-diagnosed and professionally diagnosed depressives respond to the label of depression.

Disrupted Relationships

There is evidence that conflict increases within families where at least one person is suffering with psychological distress. Burke (2003) reports that in families where one member is experiencing depression, there is an increase in marital disputes and discordance in the family. Family conflict can be a barrier to accessing support (Winefield & Burnett, 1996), which could put the family at increased risk of carer burden (Teschinsky, 2000).

A literature review from 2010 identified that caring for a loved one with a mental illness has a negative impact on someone's wellbeing. The review revealed that caregivers often experienced emotional stress, symptoms of depression, and were sometimes diagnosed with clinical depression as a result of caring for someone with a mental illness (Jan Shah et al., 2010). Wirsén et al. (2020) reviewed the experiences of those with relatives with severe mental illnesses. The meta synthesis identified themes around burden, specifically the impact on their mental and physical health, through symptoms such as fatigue, high-blood pressure, anxiety, stress and depression. Furthermore, respondents mentioned emotional impacts such as experiencing guilt and repressed anger which contributed to disrupted familial relationships and conflicts. Gammage & Nolte (2020) report that supporting a family member with a severe and enduring mental health problem has a negative impact on physical, mental and social wellbeing.

The role of caregiver can encompass a variety of different relationships, such as parent-child, spouses/romantic partners, siblings, other relatives and friends (Buus et al., 2023). It should be noted that caregivers in different relationship roles have been reported to have different experiences of supporting a loved one with mental distress (Priestley & McPherson, 2016). Priestley et al. (2018) found that particular challenges existed with regards to romantic relationships in the context of depression. The carers in the study described that the main issue was the lack of emotional support they received from their partners when they were depressed. For instance, one participant disclosed how the intimate part of the relationship between her and her partner had been ruined by her having to take on the role of his carer, as she linked herself to taking on the role of his mother. Feeling emotionally supported within a relationship has been cited as being an important factor for relationship satisfaction. Many participants in Priestley et al's (2018) study explained that feeling as though they were having to cope with challenges alone had a detrimental impact on the relationship.

Furthermore, it is well-documented that people are more likely to experience mental health difficulties if their parents had mental ill-health (Johnston et al., 2013). For example, Schepman et al. (2011) found that adolescents were more likely to experience emotional problems if their mother had poor mental health. Reupert and Maybery (2016) suggest several possible mechanisms for this relationship and emphasise that there are many different factors influencing a child's development which can be protective against, or put them at higher risk of developing, emotional problems. Firstly, mental illness may negatively impact the parent-child relationship by affecting a person's ability to be present for their child, for instance, parents may be preoccupied with their own thoughts and paying less attention to the child (Brockington et al., 2011). Furthermore, children may learn maladaptive coping strategies by watching their parents use them. Additionally, the mental health of the child and the parent could be affected by the fact that they are both exposed to the same risk factors, such as family conflict, domestic violence, trauma, and living in a disadvantaged community. Although having a parent with a mental illness is a risk factor for reduced wellbeing in children, there are many other factors that contribute to a child's wellbeing. Moreover, it is essential to recognise the bidirectional influences between parents and children, as the emotions and behaviours of a child can impact the parent's mental health, as well as vice versa (Falkov et al., 2016).

Due to the reciprocal nature of relationships people also receive care from those that they are caring for, and many report the positive experiences of living with a loved one with a mental illness (Aschbrenner et al., 2010). For instance, two studies reported that the majority of the families interviewed reported receiving physical, emotional and practical support from family members with a serious mental illness (Greenberg, 1994; Hamera et al., 1998). Furthermore, the level of support given by the distressed individual is said to be proportionate to the support they receive from their family (Hamera et al., 1998; Horwitz et al., 1996). Moreover,

some report feeling an increased sense of purpose as a result of caring for a family member (Hayslip & Kaminski, 2005), whilst others report developing an increased sense of empathy (Zauszniewski et al., 2010). The process of coming together as a family to care for a loved one has the potential to enhance family bonds and to improve communication and coping strategies (Marsh et al., 1996; Thorning & Dixon, 2016; Zauszniewski et al., 2010). Unfortunately, it is reported that research into the positive impacts of caring appears to be lacking, as most studies have focused on the impact of carer burden (Haselden et al., 2018).

Despite the extensive evidence for carer burden for those with relatives with mental illness, the influence of living with someone with a mental health condition on the wellbeing of the household has remained largely unresearched (McNamee et al., 2021). One study investigated the wellbeing of people over 50 whose partners were experiencing depression (Pascual-Sáez et al., 2019). This study concluded that partners' mental health has a significant impact on an individual's wellbeing. However, these claims may be an overgeneralisation as the study specifically looked at depression rather than mental health in general, and the sample only included couples over the age of 50 years. Furthermore, the authors reported that there could be other explanations for the results beyond the variables included in the analysis, such as life events and personal characteristics. Indeed, Powdthavee (2009) used the British Household Panel Survey to investigate the association between becoming disabled and levels of satisfaction in various areas. The study found that after becoming disabled, people are more likely to be less satisfied with their income, partner, housing, and social life. The only area people became more satisfied in was their amount of leisure time. Furthermore, two studies using longitudinal data from the USA have found that there are significant links between the wellbeing of an individual and their spouse (Fletcher, 2009) and the health of other family members (de Mello & Tiongson, 2009).

McNamee et al. (2021) found that there is a significant correlation between living with someone with a mental health condition and life satisfaction. The authors calculated that an additional annual household income of between 33,000 to 50,00 USD would be needed to compensate for the reduction in life satisfaction associated with living with someone with mental health difficulties. McNamee et al. (2021) explained that having a partner with a mental health condition impacts household wellbeing and income by care needs increasing the chances of the distressed individual and their partner having to leave their job, thus negatively impacting the family members' role in society, increasing financial strain and family conflicts. The researchers used longitudinal panel data to demonstrate that individuals do not adapt to cope with their partner's mental health condition, as their wellbeing remains low even when their partner has remained unwell for more than one year. It was also noted that individual wellbeing improved when the mental health of their partner improved. They were able to control for individual variations using fixed effects analyses.

McNamee et al's (2021) study was conducted in Australia, so it would be interesting to see whether similar outcomes are found in other countries. Furthermore, the study only included couples in which one partner was suffering from a diagnosed mental illness. Therefore, whilst the results suggest that households will be impacted by living with someone experiencing mental distress, the findings fail to capture the experiences of those who are living with undiagnosed distress, an issue which is becoming increasingly prevalent around the globe. In order to investigate this topic, a systematic literature review was conducted to identify and appraise literature into this area.

Systematic Review of the impact of living with a household member with undiagnosed mental distress: the effects on the emotional, relational and socioeconomic factors within the household.

This systematic review aims to understand the impact of living with someone with undiagnosed mental distress by identifying the emotional, relational, and socioeconomic effects on the household. In the following sections the review methodology will be presented, followed by a synthesis of the studies included along with critical appraisal. The review findings will be discussed and finally the review will conclude with an identified gap in the literature that this thesis aims to address.

Method

Sources

The following electronic databases were searched: PsycInfo, Psych Articles, CINAHL and Medline. Searches were limited to papers published in peer reviewed journals and in English. All databases were searched from the date of their inception until 17th December 2023.

Search terms

The search terms can be seen in Table 1. The terms were entered into all of the electronic databases. Searches concepts were combined with "AND": 1 AND 2 AND 3.

Study Selection

Firstly, any duplicate articles were removed from the search results. All articles were screened using their title and abstract. Any articles meeting the inclusion criteria on the basis of their title and abstract were then subjected to full-text screening.

Table 2.

Table showing the search terms that were entered into the electronic databases

Concept	Search Terms
1. Undiagnosed	undiagnosed OR undetected OR self-diagnos*
2. Household Member	Famil* OR household* OR relative* OR carer* OR caregiver*
3. Psychological distress	"distress" OR "psychological distress" OR "mental distress" OR "mental disorder" OR "psychiatric disorder" OR "mental instability" OR psychopatholo* OR "mental ill-health" OR "mental ill health" OR "mental health" OR "mental health problem*" OR "mental health condition*" OR "mental health difficult*" OR "emotional problem*" OR "common mental disorder*"

Inclusion and Exclusion criteria

In order to be included in the systematic review, papers needed to quantitively measure psychological distress using a validated questionnaire and examine its relationship with household outcomes, such as income, or the functioning of other members of the household. Furthermore, to be included studies needed to report on psychological distress in participants without a previous psychiatric diagnosis. Papers were excluded if they only reported on psychological distress in people who had a psychiatric diagnosis of a mental health problem.

Data Extraction

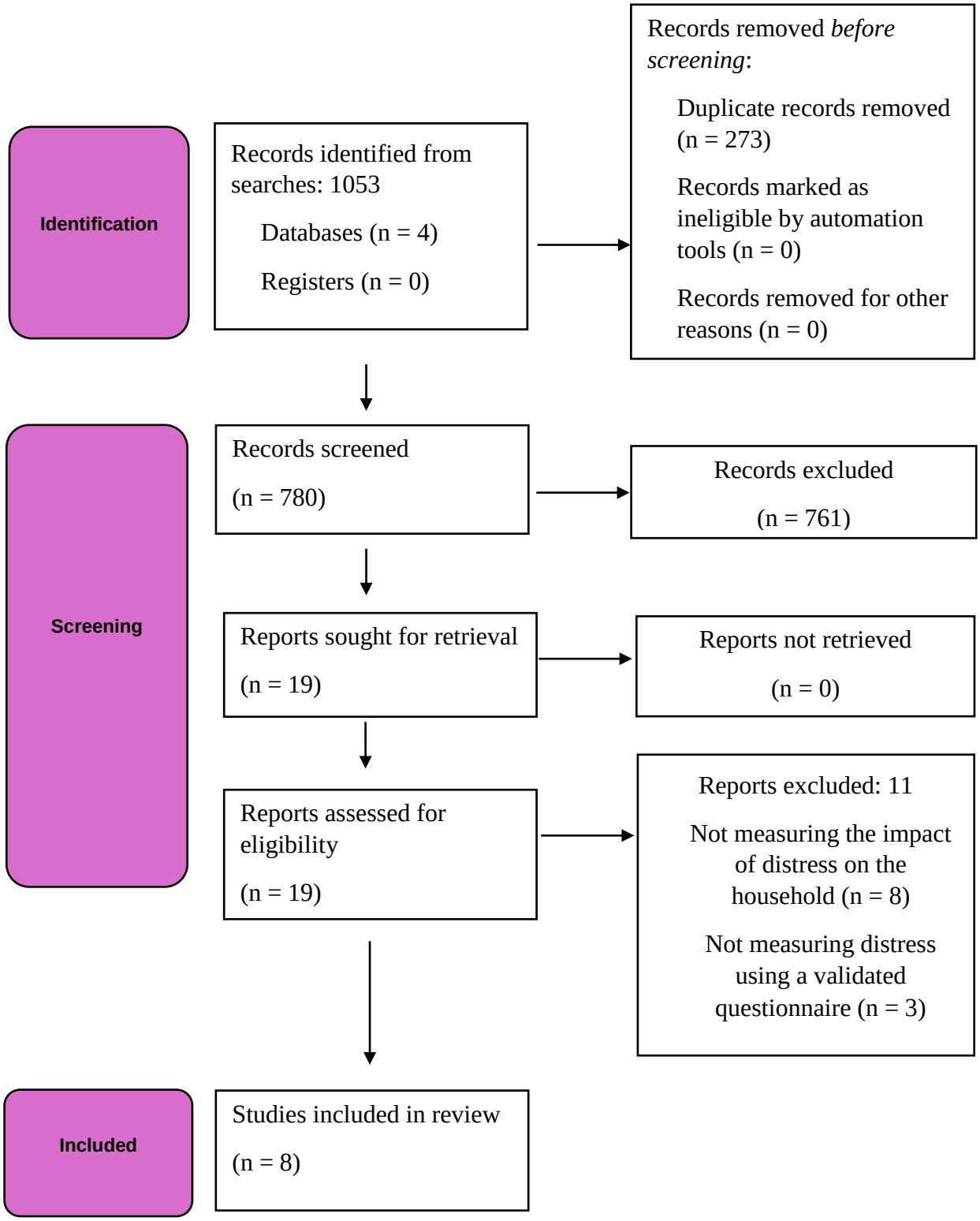
The following information was extracted from relevant papers wherever possible: How the impact on household was measured; how distress was measured; the country/region the study was conducted in; salient features of the participants, such as age range, ethnicity, occupation; the sample size; the overall outcome of the study and the method of data collection. This information is summarised in Table 2.

Data Synthesis

The studies examined in this review were not suitable for inclusion in a meta-analysis due to the diversity in the data, specifically the variations in populations (participant characteristics) and outcomes (the aspects of household impact measured). Thus, a narrative synthesis was conducted, where the contributions of each paper and its methodology were considered. Narrative synthesis is an approach to reviewing literature, in which one tries to articulate the main points, ideas, and conclusions made in the papers. Unlike a meta-analysis, which is focused on quantitatively expressing relationships between variables, a narrative synthesis focuses on identifying patterns, themes, and relationships across the literature (Popay et al., 2006). In other words, this kind of approach to reviewing involves summarising the main findings, comparing and contrasting the results, and synthesising the studies to try to draw an overall conclusion. This method of synthesis was chosen as the heterogeneity of studies in this review meant that a quantitative synthesis was not possible.

Figure 1.

PRISMA diagram outlining the screening process



Critical Appraisal

An adapted version of the Joanna Briggs Institute (JBI) Critical Appraisal Checklist for analytical cross-sectional studies was utilised to assess each study. The checklist questions and a summary of the outcomes can be found in Table 3. As this checklist does not yield a numerical score, the results of these assessments were integrated into the narrative synthesis, however, they are summarised briefly here. For three studies (Lu et al., 2018; Bell et al., 2019; Bazargan et al., 2023), the answer to all the questions on the checklist was yes, and these studies were thus considered to have high methodological quality. The other studies had some methodological concerns raised by the JBI checklist, and are therefore considered to be of lower methodological quality so their findings are interpreted with caution. The specific methodological concerns for the studies are discussed in more detail within the narrative synthesis, so that their findings can be interpreted with their methodological quality in mind.

Results

The electronic database searches returned a total of 1053 articles. After removing 273 duplicate studies, 780 articles underwent initial screening based on their titles and abstracts. Thereafter, 761 papers were excluded, many of them because they used diagnosed psychological distress. This left 19 articles for full-text screening. Following the full-text screening, another 11 articles were excluded for not meeting the inclusion criteria due to one of two specified reasons. Firstly, not measuring the impact of distress on the household. Secondly, not including a validated quantitative measure of distress. This left a total of eight studies to be included in the narrative synthesis.

Table 3.
Table summarising study characteristics and outcomes

Author	Aspect(s) of Household Impact Measured	Participants	Measure of Distress	Country/ Ethnicity	Sample Size	Outcome	Data Collection Method
Bazargan et al. (2023)	Financial Strain	Over 55 African-American/Latino	Health related quality of life (SF12)	USA (LA)	905	Less financial strain correlated with better mental health related quality of life	Face to face structured interviews
Bell et al. (2019)	Child Behavioural development (SDQ)	Mother-child pairs	9-item Malaise Inventory	UK	10893	Undiagnosed maternal distress negatively impacts child's behavioural outcome, equally to diagnosed maternal distress	Face to face interviews
Burnett et al. (2017)	Family functioning (Family Environment Scale)	Mothers and adolescents who were extremely preterm/extremely low birth weight	Center for Epidemiological Studies Depression Scale Revised (CESD-R) Beck Anxiety Inventory	Australia (Victoria)	323 parents 344 adolescents	Family functioning (rated by adolescents not parents) is associated with mental distress but parent ratings are not	Not stated
Le et al. (2019)	Family income	Adults receiving methadone treatment	Depression, Anxiety, and Stress Scale-21 (DASS-21)	Vietnam (Nam Dinh Province)	395	Higher monthly income was associated with lower likelihood of severe depressive symptoms	Face to face interviews
Lu et al. (2018)	Household income and relationships with family members	Adults	Patient Health Questionnaire (PHQ-9)	China (Jiangsu Province)	8299	Depression symptoms were related to worse relationships with families Depression symptoms were lowest in the middle income group	Face to face interviews
Schuler et al. (2017)	Perceived family functioning (Family Relationship Index)	Palliative care patients and family members	Beck Depression Inventory and Brief Symptom Inventory	USA	170 families	Family functioning was significantly associated with psychological distress	Not stated
Tammentie et al. (2004)	Family dynamics (Family Dynamics Measure II)	Families of new infants	Edinburgh Postnatal Depression Scale	Finland	373 mothers 314 partners	Mothers with EPDS scores >13 had lower levels of family dynamics across all dimensions	Postal questionnaires
Wille et al. (2008)	SDQ Impact Supplement Burden Rating	Families with children aged 7-17	Strengths and Difficulties Questionnaire (SDQ)	Germany	2337 families	Emotional problems significantly associated with family burden.	Interviews and questionnaires

Table 4.

Table summarising results from the JBI Critical Appraisal Checklist

Author	Were the criteria for inclusion in the sample clearly defined?	Were the study subjects and the setting described in detail?	Were the variables measured in a valid and reliable way?	Were objective, standard criteria used for measurement of the variables of interest?	Were confounding factors identified?	Were strategies to deal with confounding factors stated?	Was appropriate statistical analysis used?
Bazargan et al. (2023)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bell et al. (2019)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Burnett et al. (2017)	Yes	Unclear	Yes	Yes	Yes	Yes	Yes
Le et al. (2019)	Yes	Yes	Yes	No	Yes	Unclear (some self-report)	Yes
Lu et al. (2018)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Schuler et al. (2017)	Yes	Unclear	Yes	Yes	Yes	Yes	Yes
Tammentie et al. (2004)	Yes	Yes	Yes	Yes	Unclear	No	Unclear
Wille et al. (2008)	Yes	Unclear	Yes	Yes	Yes	Yes	Yes

Findings

Socioeconomic Factors

Three studies looked at the impact of undiagnosed distress on household income, with two directly measuring household income (Le et al., 2019; Lu et al., 2018) and one measuring financial strain (Bazargan et al., 2023). Both the studies that measured household income were completed in Asia, with Le et al. (2019) investigating the distress of adults who were receiving methadone treatment in Vietnam, and Lu et al. (2018) investigating distress in adults residing in the Jiangsu province in China. Bazargan et al's (2023) study was completed in the USA with adult participants over the age of 55. Despite using different groups of participants from different countries, all three studies seemed to be in agreement that low income level/financial strain was strongly associated with psychological distress. However, it is not possible to establish the direction of this relationship, so we cannot be sure whether the distress is as a result of low income/financial strain, or whether those who are distressed are more likely to have a lower income/experience financial strain.

Despite agreeing on the association of low incomes with distress, not all the studies agreed on the opposite, that is, that high income/low levels of financial strain are associated with lower distress levels. Whilst Le et al. (2019) and Bazargan et al. (2023) appear to agree with this statement, Lu et al. (2018) found that it was the middle income category who experienced the lowest levels of distress, as measured by depression symptoms. However, it is difficult to make clear comparisons across studies as all used different methods for measuring or classifying income and distress. For instance, whilst all three studies used validated and reliable self-report measures, Lu et al. (2018) and Le et al. (2019) were measuring distress by scoring depression symptoms, whereas Bazargan et al. (2023) used a quality of life measure. Furthermore, Bazargan et al. (2023) measured financial distress using a 5-item questionnaire, whilst the other two studies used household income as the financial indicator. Both studies

divided income into three categories, however Lu et al. (2018) described these as low, medium and high, whereas Le et al. (2019) named the categories poor, rich and richest. Lu et al. (2018) clearly described how incomes were classified into each of the three categories, however Le et al. (2019) failed to describe their method for this, and even reported income quintiles elsewhere in the study, so it is unclear how the categories were divided or defined. Overall, there is evidence that household income is related to undiagnosed psychological distress, however, more robust research will be needed to better understand this relationship.

Relational Factors

Family Functioning

Two of the studies measured family functioning (Burnett et al., 2017; Schuler et al., 2017). Burnett et al. (2017) investigated how family functioning was related to adolescent depression and anxiety symptoms in adolescents who had been born preterm or extremely low birthweight, and normal birth weight controls. Family functioning was rated by the parents and the adolescents using the Family Environment Scale. Two of the three dimensions of this scale were used, the relationship and system maintenance dimensions. The third dimension, personal growth, was not used as it was deemed to be less theoretically relevant than the other two dimensions. The relationship dimension examined aspects of family functioning such as cohesiveness, expressiveness and conflict, whereas the system maintenance dimension examined organisation and control. Firstly, the authors assessed whether there were differences in the perceived family functioning in families whose child had been born preterm or extremely low birth weight, and normal birthweight controls. The ratings of family functioning were similar in both the normal birth weight and extremely low birth weight groups. The only difference was that the low birth weight parents and adolescents perceived more control and organisation in their families than normal birth

weight adolescents and parents. No significant differences were observed in terms of cohesiveness and expressiveness between the two groups.

The authors then assessed whether the family functioning scores were related to distress scores. The authors report that adolescent ratings of family conflict and cohesiveness were related to elevated depression scores. Whilst they acknowledged that after adjusting for confounding variables the relationship between cohesiveness and depression scores was reduced, upon examination of the findings, the relationship actually becomes non-significant after confounding variables have been adjusted for. Furthermore, the relationship between conflict and depression scores is reduced, whilst still remaining significant. Interestingly, the relationship between higher control scores and elevated depression scores becomes significant after confounding variables are controlled for. The relationship between adolescent ratings of family functioning and elevated anxiety scores appeared to be more robust. Even after controlling for confounding variables, elevated anxiety scores were significantly associated with lower family cohesiveness, expressiveness, organisation and higher conflict.

Schuler et al. (2017) also found a relationship between conflict family functioning scores and depressive symptoms. The authors reported that depressive symptoms were more frequently reported, and levels were higher in individuals from conflictual families than those from families with low communication scores. However, there were no significant differences with individuals from less-involved families. This study assessed family functioning in families of palliative care patients using the Family Relationship Index. The Family Relationship Index has three subscales, cohesiveness, expressiveness and conflict resolving, which combine to form an overall measure of family interaction. Based on the overall score families can be classified as low communication, low involvement, or high conflict families. The Family Relationship Index and the Family Environment Scale have similar subscales, such as

cohesiveness, expressiveness and conflict. However, the specific items and the weight given to each dimension can vary between the two scales. Whilst this should be considered when making comparisons between the studies of Schuler et al. (2017) and Burnett et al. (2017), both papers offer evidence that higher rates of perceived conflict in families are linked with an increase in depressive symptoms. It should be noted that both studies assessed family functioning in groups of participants with specific health concerns; palliative care patients (Schuler et al., 2017) and individuals who were born preterm/extremely low birth weight (Burnett et al., 2017). This could make the generalisation of these findings to the larger population challenging, however, the findings being corroborated in the normal birth weight control group of the Burnett et al. (2017) study suggests that the findings could be ubiquitous throughout the population. That said, far more research will be needed before such claims can be substantiated.

Family dynamics

One study looked at the relationship between undiagnosed distress and family dynamics. Tammentie et al. (2004) investigated whether there was a link between postnatal depression symptoms and family dynamics in women who had given birth at a hospital in Southern Finland within the preceding year. The researchers measured family dynamics using the Family Dynamics Measure II. This questionnaire was designed to measure the dimensions of family dynamics proposed in Barnhill's (1979) healthy family life cycle (Barnhill, 1979). However, two dimensions were later removed due to difficulties creating items to reflect them. The six dimensions included were: individuation, mutuality, flexibility, stability, communication and role reciprocity. Tammentie et al. (2004) reported that there was a significant negative correlation between family dynamics and maternal depressive symptoms on the dimensions of stability, mutuality and communication. The correlations for individuation, flexibility and role reciprocity were not significant.

Unfortunately, this review has not identified any other studies assessing the relationship between undiagnosed distress and family dynamics, so it is not possible to compare or corroborate these findings with another study, and it is difficult to generalise the findings of this study as it was completed in one region of Southern Finland, and there was a relatively low response rate to the questionnaires. A limitation of the study is that questionnaires were sent out and returned by post, so the researchers cannot be sure who completed the questionnaire, or whether partners collaborated when completing the questionnaires, which could introduce some bias into the results. Furthermore, data regarding confounding variables were not collected or controlled for in the statistical analysis, and it was unclear whether the assumptions for the parametric statistical tests were met or violated. Therefore, the results should be interpreted with caution.

Family burden

One study investigated the relationship between undiagnosed child mental health symptoms and family burden in Germany (Wille et al., 2008). Child mental health symptoms were measured using the Strengths and Difficulties Questionnaire (SDQ), giving a total score for child mental health problems and also five subscale scores: behavioural problems, emotional problems, hyperactivity, peer-problems and prosocial behaviour. Family burden was measured using the SDQ Impact supplement, which was designed to gain more information on social difficulties, and investigates areas such as home life and leisure activities (Goodman, 1999). Wille and colleagues reported that SDQ scores were significantly associated with family burden ratings, with emotional problems being the strongest predictor of family burden. These findings suggest that mental distress has an impact on other members of the household by forming a burden upon them. It should be noted that there was a delay between participants completing the SDQ symptom questionnaire and the SDQ impact supplement in this study. Whilst the authors report that this delay should not have

significantly impacted the findings, as all items ask respondents to consider the six months prior to completing the questionnaire, the possibility of the delay impacting on responses cannot be excluded. For instance, it is possible that respondents became increasingly aware of symptoms since completing the first questionnaire, which subsequently impacted their responses on the impact supplement.

Parents and Offspring

Three papers included data from parents and their offspring within the same study (Bell et al., 2019; Burnett et al, 2017; Wille et al, 2008). All the studies with parents and offspring were looking at different outcomes. Burnett et al. (2017) were measuring the impact on family functioning, Wille et al. (2008) were investigating family burden and Bell et al. (2019) were measuring child behaviour outcomes. All three studies suggest that undiagnosed distress is associated with outcomes for other household members. Two of the studies used the Strengths and Difficulties Questionnaire (SDQ) to measure the outcomes of children in the household. However, one study was looking at the total SDQ scores and five subscales (Wille et al, 2008), whereas the other looked at the behavioural outcomes (Bell et al., 2019). Bell et al. (2019) found that undiagnosed maternal distress is associated with the behavioural outcomes of the child. Wille et al. (2008) concluded that emotional distress in the child has a significant impact on family burden.

Both Burnett et al. (2017) and Wille et al. (2008) report that there are some differences in reporting between adolescents and their parents. Wille et al. (2008) report that whilst both parent and child ratings indicate that emotional distress is associated with family burden, adolescent ratings of difficulties resulting from emotional problems were higher than adults. It should be noted that only adolescents aged 11-17 provided their own responses in the Wille et al. (2008) study. Children aged under 11 did not complete the questionnaire so parent and child comparisons are not available for that age group. Burnett and colleagues report that

adolescents tended to report more conflict, lower cohesiveness and lower expressiveness in the families than their parents. Furthermore, only adolescent ratings of family functioning were associated with mental distress, whereas parent ratings of family functioning were not. Both these studies suggest that adolescents may be more sensitive to impacts of distress than their parents.

Discussion

This review looked at eight studies which all investigated the impact of undiagnosed distress on some aspect of a household. The findings were categorised into those looking at the impacts on socioeconomic factors and relational factors (specifically family functioning and dynamics, family burden, and parents and offspring). In terms of the impact of undiagnosed distress on socioeconomic factors, the included studies indicated a consistently strong association between low household income or high financial strain and psychological distress. This effect has been demonstrated across different continents, so may be universal, however, more research will be needed to better understand this relationship, and whether it is bidirectional. The findings regarding relational factors, particularly family functioning, showed varying results. Although increased distress was linked with some dimensions of family functioning, it was difficult to compare between studies to see whether the findings were able to support each other, as the measures and methods used were different. That said, there appeared to be a strong link between family burden and child mental health symptoms. Studies looking at the impact of undiagnosed distress on parents and offspring suggested that adolescents may be more sensitive to the impact of distress than their parents. Overall, despite some potential links being identified, the variations in methodologies and measures demonstrate that more robust research is needed to understand the complex relationship between undiagnosed distress and household relational factors.

Emotional contagion and social contagion theories could explain these findings. Emotional contagion theory posits that people pick up on the emotional states of those who are close to them (Horesh et al., 2022), therefore, if one member of a household is experiencing mental distress, their emotional state could spread to the other household members (Chi et al., 2019). Social contagion theory predicts that behaviours, attitudes, and mental states are also shared within social networks. Therefore, distress may spread through household members due to observational learning of maladaptive coping strategies and shared negative experiences or interpersonal relationships (Olsson et al., 2007). As discussed previously, emotional contagion and social contagion theories may also explain how mental distress impacts on household income. Emotional contagion theory would predict that household income could be impacted as the emotional states spread through the household and lead. Furthermore, social contagion theory would predict that behaviours, such as irresponsible financial decision making, could also spread between people who live together.

Limitations of Review

The first limitation of this review is that the screening was only completed by one reviewer. Having a second reviewer could have reduced the impact of any biases introduced by the first screener, and improved consistency in the decisions on whether to include or exclude papers. A further limitation of this review is publication bias, as only published studies were included. Many studies that do not report significant effects do not get published and thus are not readily accessible. This causes bias as non-significant findings are not represented in the literature, so effects may be overestimated if they are based only on significant, published findings. Another potential source of bias was the decision to limit the searches to papers published in English. In addition to excluding valuable findings from other countries and cultures, there is evidence that publications in certain languages tend to more frequently report positive findings (Vickers et al., 1998). It has been suggested that where it is

impossible to include studies in other languages due to time and budget constraints, as was the case in this review, the language restriction should only be imposed at the selection stage, rather than the search stage (Pieper & Puljak, 2021). This would mean that the number of studies excluded based on their language would be reported, so the extent of the language bias could be considered in the paper. Unfortunately, in this review the language restriction was imposed at the search stage, so we are unsure how many potentially relevant papers were excluded based on their publication language.

Another limitation is that many of the studies including participants with undiagnosed distress had to be excluded as the results did not differentiate between the outcomes of those with diagnosed and undiagnosed distress. This meant that despite having many relevant participants, the findings could not be included and the experiences of many participants with undiagnosed distress were not included in this review. A number of potentially relevant participants may also have been missed from the review due to the search terms. More household members could have been identified by including terms to capture parent and child relationships. Indeed, many of the studies include in the review examined parent and child relationships but these were not specified in the search terms.

The variability in the quality of the included studies raised concerns regarding the validity of the research, which prevents the review from drawing together any definitive conclusions. Additionally, the limited number of studies and the diversity in the household factors that were assessed meant that it was not possible to conduct a meta-analysis. Consequently, deriving an estimate of the association between undiagnosed distress and household factors was impossible, due to the heterogeneity of the measures used in existing research.

Conclusions and recommendations for future research

The literature indicates that there is a link between low income/financial strain and undiagnosed distress. However, the relationship between undiagnosed distress and relational factors is less clear as there are very few studies that investigated this relationship, and the ones that did measured distress and relational outcomes very differently. Therefore, more research will be needed before any clear conclusions can be drawn regarding how undiagnosed distress affects households.

This review has identified a lack of research exploring the impact of undiagnosed distress on households. In particular, it should be noted that this review initially set out to investigate the emotional, relational and socioeconomic factors impacted by living with a person with undiagnosed distress. However, no studies were identified that examined the impact of undiagnosed distress on the emotions of other household members, therefore, only those investigating the impact on relational and socioeconomic factors were included.

Proposed Study

Whilst there is a growing evidence base addressing socioeconomic influences on mental health problems, there is minimal literature regarding undiagnosed mental health difficulties. Furthermore, there is a strong theoretical rationale that other household members are negatively impacted by living with a household member with psychological distress. This has the potential to exponentially increase the suffering due to psychological distress and contribute to the ever-growing prevalence and burden of psychological distress around the globe. Therefore, it is important to address the gap in research in this area, so that policy makers can be made aware of these issues and deploy resources and develop strategies to support where necessary.

This study will investigate the associations between income, relationships and psychological distress using data from the from the UK Household Longitudinal Study "Understanding Society".

Aims and Objectives

There are two main objectives of this project which are as follows:

1. To examine the association between household income and psychological distress.
2. To examine the association between relationship quality and whether someone has a diagnosis of a mental health condition.

Chapter 2: Method

This chapter outlines the process for conducting this research project. It begins by describing the methodology of this project, initially by detailing the design and the sample used. The researcher then explains the various measures used whilst evaluating their strengths and weaknesses. The chapter ends by discussing the ethical considerations and the statistical analysis approach.

Design

This research project is considered to be a secondary data analysis, since the researcher analysed data which they had not collected themselves and which was not collected specifically to address the research aims this thesis set out to address (Greenhoot & Dowsett, 2012). There are a number of advantages to conducting a secondary data analysis of a large-scale longitudinal data set. Firstly, the researcher has access to an abundance of data which would otherwise be impossible to collect within the timeframe and budget of the project. Enabling time and cost-effective studies contributes to the timely progression of the field as a whole because literature can be produced faster if the need for data collection is eliminated

(Doolan & Froelicher, 2009). Furthermore, large longitudinal data sets usually benefit from stringent data collection processes, such as sampling techniques which are selected to ensure that all members of the population are adequately represented (Salter, 2019).

However, there are also some limitations to conducting a secondary data analysis. For instance, the data collected may not exactly fit with the researchers aims as it was originally collected for another purpose. Furthermore, the researcher is not able to choose the measures which are used to collect the data and therefore the researcher needs to assess their suitability for the research question (Johnston, 2014). In order to overcome these limitations, Magee et al. (2006) identified that it is important for the goals of the original data collectors' and the current researcher to be aligned. Therefore, this research chose to use data from the UK Household Longitudinal Study (UKHLS) as this household panel survey aims to provide "high-quality longitudinal data on subjects such as health, work, education, income, family, and social life to help understand the long-term effects of social and economic change, as well as policy interventions designed to impact upon the general wellbeing of the UK population" (Understanding Society, 2022).

Sample

When UKHLS began in 2009, it used a sample of addresses generated from the Postcode address file (all addresses which Royal Mail deliver to in the UK). The survey team then contacted every address in the sample to find out who was residing there. When UKHLS began in 2009, approximately 40,000 households were included in the survey, however, the exact number is constantly changing, as people may stop responding to the survey or may split off to form new households. Those who were living in the original households selected for Wave 1 of the survey are known as original sample members. If any of the original sample members have split off to form new households they are still invited to be included in the study, as well as any person who has joined those new households. Those who have

joined an original sample member in a new household are known as temporary sample members and will be included in the study for as long as they remain living with the original sample member.

Approximately 20,000 households took part in the most recent complete wave (Wave 13), for which data was collected between January 2021 and May 2023 (UK Data Service, 2023). This current thesis uses data from waves 9 and 10 of UKHLS (ranging from January 2017 to May 2020).

Measures

Data were collected through questionnaires administered online or by interviewers. Each interviewer was assigned a cluster of addresses within a locality to reduce the costs of interviewers having to travel long distances between respondents (Understanding Society, 2022). Below the relevant measures within UKHLS selected for this research project have been outlined in more detail. These measures were chosen based on evidence of their links with mental health, income and relationships.

Diagnosis Status

The UKHLS questionnaires ask respondents whether they have ever been diagnosed with a psychiatric, nervous or emotional disorder. Answers to this question were used to establish the diagnosis status of respondents. However, this question was only introduced in Wave 10 of the survey. The question in UKHLS asks “Has a doctor or other health professional ever told you that you have an emotional, nervous or psychiatric problem?” The ICD-11 is the current diagnostic classification system in the UK, but as the question in UKHLS does not specify how or when the person was diagnosed, we cannot be sure which diagnostic criteria were used. Wave 10 was deemed to be the most appropriate wave to use for this study, as for

other waves we would be unable to ascertain whether the respondents had a diagnosis of a psychiatric condition or not.

Psychological Distress

The psychological distress of the participants was measured using the GHQ-12. The General Health Questionnaire (GHQ) was developed by Goldberg (1972) as a 60-item questionnaire to screen for risk of common mental health problems. Since its origin, the GHQ has also been validated in various populations and languages (Wernecke et al, 2000). Shorter versions have been developed and validated, and the GHQ is now available in 30-, 28-, 20 and 12- item versions (Goldberg et al., 1998). The 12-item version (GHQ-12) is commonly used in social science research due to its brevity and a wealth of evidence demonstrating its reliability and validity (Pevalin, 2000; Böhnke & Croudace, 2016). However, there is some debate within the literature as to its internal structure (Gnambs & Staufenbiel, 2018). The GHQ was originally developed as a unidimensional structure, and there is considerable evidence to support this (Romppel et al., 2013; Hystad & Johnsen, 2020). Nonetheless, a number of studies have emerged which suggest that the GHQ is multidimensional (Graetz, 1991; Smith et al., 2010; Gelaye et al., 2015). For the purposes of this project, we intended to measure an overall dimension of wellbeing, therefore, the unidimensional measure was considered the most appropriate for this study, and there is sufficient evidence to support its use in this way.

There are two ways of scoring the GHQ, Likert or caseness scoring. The Likert scale gives a continuous measure of distress by summing the respondents scores on each item. Whereas the caseness method uses a cut off score to determine whether individuals are cases or non-cases (i.e. likely to be experiencing psychological distress). The caseness method was chosen for this study, as the design required participants to be divided into two categories based on their GHQ score: distressed and not distressed. According to the Health Survey for England 2016, a cut off score of 4 is said to indicated probable psychiatric disturbance (Morris & Earl,

2017), whereas other studies have recommended a cut off score of 3 (Goldberg, 1998). The analysis was run using each of these cut off scores.

Income

Household income was extracted directly from the dataset. The figures used were the net household income, which represents the sum of the net monthly household incomes for all family members and includes income from employment, miscellaneous income, private benefit income, investment income, pension income and social benefit income (Fisher et al., 2019). Household income rather than individual income is more typically used in research, as it is thought to give a better account of the resources available to someone (Martikainen et al., 2003). This is because the income of an individual who is not working could be very low, whereas they could be married to someone who is very high earning and therefore their individual income would not be representative of their circumstances. That said, the limitation of using household income is that it does not always take into account how many members there are in the household, or the outgoings of the household, and therefore income alone may not capture whether some households are experiencing financial strain (French & Vigne, 2019). For that reason, we decided to calculate equivalised household income using the UKHLS recommended OECD (The Organization for Economic Co-operation and Development) equivalence to account for the number of people in the household (Fisher et al., 2019). Equivalised household income was calculated by dividing the net household income by the corresponding equivalisation value from the OECD scale.

Qualification Level

Educational attainment was measured by the highest qualification gained. The relevant Understanding Society variable (hiqual_dv) asks participants to report the highest level of qualification they have ever received. Responses are coded into six categories: Degree, other

higher degree, A-Level etc, GCSE etc, other qualification, no qualification. The degree and other higher degree categories were combined for the purpose of this analysis due to low numbers in the other higher degree category.

Education is thought to be associated with income and mental distress as it is linked with both early and later life resources (Darin-Mattsson et al., 2017). Education usually begins in early childhood and therefore can reflect early life circumstances, and continues through adolescence and into early adulthood (Galobardes et al., 2006). The impact of education is thought continue throughout life due to its influence on lifestyles, employment, social resources and housing (Deary et al., 2005; Hayward et al., 2015). However, some see it as problematic that education is an indicator which is determined in early life and tends to remain fixed throughout life, as the majority of people do not undertake further education in adulthood. Furthermore, there is evidence that the impact of education varies for different birth cohorts (Beebe-Dimmer et al., 2004). Given the potential influence of education in a complex system of interacting social factors, it felt important for it to be included in the model.

Gender

Gender data was extracted directly from the UKHLS dataset. Only two genders are reported by the dataset so other genders that people may identify as were not captured in the data. Gender has been associated with a number of relevant variables in the research questions such as mental distress and income (Rosenfield & Mouzon, 2013; Bertrand et al., 2015).

Ethnicity

Ethnic group is captured in the UKHLS variable (racel), which has 16 possible categories. Due to low numbers of some minorities, relevant categories were combined to produce the following 5 categories: White British, Mixed, Indian/Pakistani/Bangladeshi, Black

African/Caribbean and Other. Ethnicity has been reported to be associated with mental distress due a number of race-related stressors, such as, discrimination, hostility and deprivation (Williams, 2018). Therefore, ethnicity was included in the model as a control variable.

Occupational Status

Current Labour Force Status (jbstat) was the Understanding Society variable that was included in the analysis as a measure of occupational status. Current Labour Force Status originally included 11 categories: Self-employed, Paid employment (full time/part time), Unemployed, Retired, On maternity leave, Family care or home, Full-time student, Long-term sick or disabled, Government training scheme, Unpaid, family business, On apprenticeship, Doing something else. However, due to limited numbers in some categories, some of the categories had to be combined so that the analysis could be run. Therefore, the family care and maternity leave categories were combined into one category, and self-employed and paid employment were combined to make the employment category. Unemployed and retired were left as their own categories, and all remaining categories were combined into the 'other' category.

There are some criticisms when it comes to using occupational status as a measure of social position. For instance, some occupations are difficult to define and categorise, and therefore may not be adequately captured by the measures. Additionally, some sources of occupation/income, such as illegal activities, are unlikely to be reported and therefore their impact cannot be accounted for in research (Galobardes et al., 2006). Nonetheless, a number of studies have identified occupation as being a reliable indicator of mental distress (Drapeau et al., 2012). Moreover, literature suggests that occupation is not simply related to mental distress via its influence on income, and to regard occupation simply as an indicator of income neglects to acknowledge the other factors linked with occupation, such as power and

autonomy (Connelly et al., 2015). In addition, evidence suggests that income can fluctuate each year, and therefore occupation is thought to be a more reliable and stable indicator of social position (Goldthorpe & McKnight, 2006), therefore it felt important to include it in the model.

Relationship Quality

The Revised Dyadic Adjustment Scale (RDAS) was developed by Busby et al. (1995) from the original Dyadic Adjustment Scale (DAS; Spanier, 1976). The RDAS includes 14 items from the original DAS and assesses three aspects of Dyadic Adjustment (consensus, satisfaction and cohesion). The RDAS is widely accepted as a reliable and valid measure of relationship quality (Crane et al., 2000; Anderson et al., 2014). The RDAS was found to have good construct validity as indicated by high correlations with other measures of relationship quality, such as the Locke-Wallace Marital Adjustment Test (MAT), the Satisfaction with Married Life Scale and the original DAS (Ward et al., 2009; Busby et al., 1995). Scores on the RDAS range from 0-69, with low scores indicating relationship distress and high scores indicating relationship satisfaction. Evidence suggests that the RDAS also has good discriminant validity and can distinguish between 81% of distressed and non-distressed couples, with scores below 48 indicating relationship distress (Busby et al., 1995). The UKHLS survey only includes the cohesion and satisfaction subscales. Therefore, only these two subscales were available to include in the analysis. However, studies have shown that the subscales are reliable measures, with both showing high levels of internal consistency (Crane et al, 2000; Anderson et al, 2014). Both subscales are also reported to be valid measures of relationships, having demonstrated strong convergent and discriminant validity (Busby et al, 1995; Hamid et al., 2020). Relationship satisfaction is said to measure the overall contentment within a relationship and asks questions regarding the underlying constructs of stability and conflict (Busby et al., 1995). Relationship satisfaction has been

associated with mental health outcomes (Downward et al., 2022). Relationship cohesion is said to measure the degree of togetherness and shared activities within a relationship and is based on the quality of activities and discussions (Busby et al., 1995). The questions related to cohesion on the RDAS ask respondents questions about how often they engage in activities and discussions with their partner, see Appendix 1 for the full questionnaire. The systematic literature review identified cohesiveness as one of the relationship variables associated with mental health outcomes, as Burnett et al. (2017) reported a correlation between cohesiveness and depression and anxiety symptoms. Therefore, it felt important to include both the relationship cohesion and relationship satisfaction subscales in this analysis, as they could be measuring separate, yet relevant constructs.

Marital Status

Marital status was obtained from the UKHLS dataset (mastat_dv). UKHLS has 11 categories for this variable, however due to the nature of the questions the categories which did not capture those in relationships were removed. This left the remaining three categories to be included in the analysis: married, living as a couple and in a same sex civil partnership. Marital status was included in the model as a control variable as being married has been found to be associated with lower psychological distress levels than other partnership statuses (Amato, 2014).

Number of Dependent Children

UKHLS records the number of dependent children (under 16) respondents are responsible for, so this information was extracted directly from the relevant variable in the dataset. The number of dependent children someone is responsible for has been found to be associated with their mental distress (Nwoke et al., 2016).

Physical Health

Physical health was measured using Short Form Health Survey scores. The 12-item version (SF-12) of the original 36-item Short Form Health Survey (Ware et al., 1993) was developed by Ware and colleagues in 1996 (Ware et al., 1996) to incorporate the Physical and Mental Component summaries into a shorter form. The SF-12 generates two summary scores: the Mental Component score (MCS) and the Physical Component score (PCS). UKHLS reports both the Mental and Physical Component scores. The SF-12 is widely used and has demonstrated good reliability and validity in many countries, in both general and medical populations (Jenkinson & Layte, 1997; Gandek et al., 1998; Salyers et al., 2000; Kim et al., 2014; Ruotolo et al., 2021). Only the Physical Component Scores were included as a control variable in the relationship analysis, as physical health has been found to be associated with relationship quality (Robles et al., 2014) and mental distress (Prince et al., 2007).

Ethics

UKHLS survey data are stored in the UK Data Service Archive at the University of Essex. Any personal information which may be used to identify participants is removed to protect their confidentiality. As the data are classified as 'safeguarded' the UK Data Archive need to monitor who is accessing the data and why, so that they can ensure the data are only used for research that will meaningfully contribute to society. Therefore, it was necessary to provide a summary of the study's objectives to the UK Data Archive before access to the dataset was granted. The End User License terms and conditions must also be accepted, and these stipulate that data can only be used for non-profit research, teaching, or personal educational development. Although the identifiable information is removed from data in the safeguarded category, the risks of identifying the participants is increased when the information is linked with other datasets, such as private databases. Therefore, measures are in place to protect the confidentiality of survey respondents. Users are prohibited from attempting to derive specific

information about the individuals or households and are obligated to destroy the data after their access period has ended. The protocols and research program of UKHLS undergo scrutiny by multiple research ethics committees to ensure adherence to ethical and legal standards. UKHLS adheres to ISO-27001 data security protocols and procedures, an international standard for information security management. Individuals are able to withdraw from the study at any time, and if they choose to do so no more data will be collected from them and they will not be asked to participate in future waves (Francis, 2022).

Statistical Analysis

Data analyses were completed using Stata MP Version 18.0. The relevant variables were extracted from the dataset.

Research Question 1: Is there a significant association between income and psychological distress?

The first research question was to examine the relationship between household income and psychological distress. Data from Wave 10 was used to answer this question. Logistic regression was used to examine the relationship between household income and distress, as well as the various demographic variables which were also included in the model. Age was a continuous variable, whereas gender, ethnicity, highest qualification gained, and occupational status were categorical variables.

Research Question 2: Is there a significant association between relationship quality and having a diagnosed mental health condition?

Couples were only included if both of the individuals within the couples had answered the questionnaire. Data from wave 9 was used to answer this question, as there was no relationship data available from Wave 10. However, data regarding diagnosis status was taken from Wave 10 and matched to the individual, as this data was only collected in Wave 10.

Logistic regression was used to examine the relationship between couples' relationship quality and having a diagnosed mental health condition. Relationship quality was included as the independent variable and diagnosis status was the dependent variable. Marital status, distress, partner's distress, number of children under 16 the person is responsible for, number of children under 16 the partner is responsible for, physical health and partner's physical health were also included in the model as control variables.

Effect sizes

For the logistic regression analyses, the effect sizes were calculated using the R^2 values generated by Stata. R^2 values quantify the strength of the impact of the independent variable on the dependent variable. The effect sizes were calculated using Cohen's f^2 (Cohen, 1988).

$$f^2 = \frac{R^2}{1 - R^2}$$

Cohen's f^2 is a measure of effect size used in regression analyses. An f^2 value of 0.02, 0.15, and 0.35 are said to represent small, medium, and large effect sizes, respectively (Cohen, 1988).

Chapter 3: Results

Chapter Introduction

This chapter reports the findings from the statistical analyses. It begins by exploring the relationships between household income, various demographic factors and psychological distress. It then goes on to explore the association between relationship quality of couples and diagnosis of a mental health condition.

Research Question 1 – is there a significant association between psychological distress and household income?

Description of the Sample

I will begin by describing the sample obtained from UKHLS to address this research question. Table 5 below shows the numbers of participants in each category, and the percentage of participants in each category for the categorical variables. Table 5 also shows the means and standard deviations for the continuous variables. The percentage of White British people in the sample is slightly higher than the percentage of White British people in the UK, according to 2021 census data (85% and 82% respectively) (UK Government, 2022). The percentage of people in the Black (approximately 2%) and mixed (approximately 1%) ethnicity categories are slightly lower than the percentages identified by census data (4% and 3% respectively). The percentage of people in the "other" ethnic category in the sample are similar to the census data (both 2%). It should be noted that our sample divided the categories slightly differently from census data, in that Indian/Bangladeshi/Pakistani were one category and any other Asian ethnicities were included in the other ethnic group category.

The mean age of the sample was approximately 53 years old, however, it is important to note that only people aged 16 and over were included in the sample. The mean age in the UK has not been reported, however, the median age of the UK is reportedly 40 years as of the 2021 census (Office for National Statistics, 2022a), however, this will include all ages from birth.

Females made up approximately 49% of the sample, whereas males made up 51% of the sample. This is in contrast with census data from 2021, which reports a higher proportion of females (51%) to males (49%).

According to the 2021 census data, 34% of people fell into the degree or other higher qualification category (Office for National Statistics, 2022b). In my sample, the percentage of

people is approximately 46%, so higher than is reported by UK census data. The percentage of people with no qualifications was somewhat lower in my sample (approximately 8%) than in the UK census data (18%). The percentage of people with other qualifications of an unknown level was somewhat higher in my sample (approximately 9%) than in the UK census data (3%). It is not possible to directly compare the GCSE and A-Level categories with the UK census data as the questions were asked differently in the UKHLS survey and the UK census.

The UK Labour Force Survey (Francis-Devine et al., 2024) reports that unemployment is approximately 4%, which is slightly higher than the percentage in our sample (3%). The same survey reports that employment is approximately 75%, which includes those on maternity leave and family care. When I combine these groups in my sample, this makes up approximately 67% of the sample, so is somewhat lower than the UK data currently. However, the sample included all ages over 16, whereas the labour force survey only included those from 16-64 years old, which may account for this difference. Furthermore, The UKHLS sample included Waves 10 which ran from 2018 to 2020, which could explain the differences in proportions as UK Labour force study used data from 2023 to 2024. Moreover, some of the people in the "other" category in our sample may have been included in the employment figures in the UK Labour Force Survey, which could also account for some of the differences.

Table 5.

Descriptives of the sample for Research Question 1

	Variable	Frequency (Percentage)
Psychological Distress	Not distressed	16375 (83.3%)
Status	Distressed	3285 (16.7%)

	Variable	Frequency (Percentage)
	Household Income	20441 (M=2090.72 [9.65])
	Age*	20450 (M=53.1 [.106])
Gender	Male	32399 (50.7%)
	Female	31545 (49.3%)
Ethnicity	Mixed	244 (1.19%)
	Indian/Pakistani/Bangladeshi	1957 (9.57%)
	Black African/Caribbean	448 (2.19%)
	Other	496 (2.43%)
	White British	17299 (84.6%)
Highest Qualification	Degree or the other higher	9162 (45.6%)
Gained	A level etc	3778 (18.8%)
	GCSE etc	3734 (18.6%)
	Other qualification/s	1765 (8.79%)
	No qualifications	1644 (8.19%)
Occupational Status		
	Other	688 (3.37%)
	Retired	5526 (27.0%)
	Family care/Maternity leave	1262 (6.17%)
	Unemployed	498 (2.44%)
	Employed	12471 (61.0%)
Diagnosis Status	Undiagnosed	19395 (94.8%)
	Diagnosed	1059 (5.2%)

Variable	Frequency (Percentage)

Note. *Income and age give the frequency followed by the mean and standard error. Psychological Distress Status Gender, Ethnicity, Highest Qualification Gained, Occupational Status and Diagnosis Status are frequencies with percentages.

In summary, although the demographic characteristics in our study sample do not exactly match the percentages within the UK population, the figures are reasonably well representative, with similar percentages of ethnic groups to UK census data, and unemployment rates that are similar to current national figures. However, we should be mindful that certain groups may be slightly over-represented in the sample, such as those with degrees or other higher qualifications, and those who identify in the white ethnic group. Although employment rates are lower in the sample than current rates, this can be explained by the fact our study included participants aged 16 and above, between 2018 to 2023, whereas current rates are based on more recent figures in people aged between 16-64. The differences between our sample and census data in gender, income, and qualification levels are likely explained by missing data and differences in survey questions.

Analysis Findings

As there is some debate in the literature as to whether the cut off score for probable psychological disturbance on the GHQ is 3 or 4 (Goldberg et al, 1998; Morris & Earl, 2017), the analysis was run twice, initially using the Health Survey for England recommended cut off score of 4, and then the alternative cut off score of 3 to see if this had any impact on the outcome.

GHQ Cut off score =4

Logistic regression was used to answer this question, with household income as the independent variable and psychological distress status as the dependent variable. I decided to

use the GHQ caseness variable as the outcome rather than the psychiatric diagnosis variable as I am aware that there are significant levels of undiagnosed distress in the community from the APMS survey and a recent analysis using UKHLS (Stansfeld et al, 2016; Wicks et al., in press). The model included gender, ethnicity, highest qualification level, occupational status and age as control variables. Table 6 summarises the findings from this analysis. The analysis included a total of 19318 observations. The logistic regression analysis showed that the overall model was significant [$X^2(15)=704.92$, $p<.001$].

Income was significantly negatively associated with psychological distress status (β = -.0000561 [95% CI: -.000094, -.0000181], p=0.004) (see Table 6). This indicates that those with a lower household income were more likely to be psychologically distressed. For every one penny increase in household income there is a 0.0000561 decrease in the log odds of being in the distressed category.

Effect size (F^2) was calculated from the R^2 value (.0394) using Cohen's (1988) formula.

The effect size for this analysis ($f^2 = 0.04$) was found to meet Cohen's (1988) convention for a small effect ($f^2 =0.02$).

Table 6.

Logistic regression of psychological distress with household income and other socioeconomic factors

Variable	Coefficient	Robust Standard Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Household Income	-.0000511	.0000195	0.004	-.0000894	-.0000128

Gender	Female	.302	.0412	0.000	.221	.383
	Male*	0				
Ethnicity	Mixed	-.129	.184	0.483	-.490	.231
	Indian/Pakistani/Bangladeshi	-.146	.0748	0.051	-.292	.000704
	Black African/Caribbean	-.160	.148	0.280	-.451	.130
	Other	.066	.129	0.611	-.189	.318
	White British*	0				
Highest	Degree or the other higher	-.047	.0832	0.575	-.210	.116
Qualification	A level etc	-.101	.0883	0.255	-.274	.0724
Level	GCSE etc	-.139	.0871	0.110	-.310	-.0314
	Other qualification/s	-.0713	.0994	0.473	-.266	.124
	No qualifications*	0				
Occupational	Other	1.54	.0874	0.000	1.37	1.71
Status	Retired	-.00804	.0674	0.905	-.124	.140
	Family care/Maternity leave	.294	.0805	0.000	.136	.452
	Unemployed	1.16	.105	0.000	.951	1.36
	Employed*	0				
Age	Age	-.0138	.00193	0.000	-.0176	-.010

Note. *Indicates the reference category

Gender was significantly associated with psychological distress (β = .302 [95% CI: .221, .383], p = 0.000) (see Table 6).

Table 6 shows none of the ethnic groups or qualification levels were significantly associated with psychological distress.

Many current labour force status categories were significantly associated with psychological distress. As the employed group was the reference category, this indicates that those who are not working are more likely to be distressed than those who are employed. Those in the "other" employment category had the highest likelihood of being distressed, with the log odds being 1.54 times higher for those who were in this category compared with those who were employed (β = 1.54 [95% CI: 1.37, 1.71], p<.001). Those in the unemployed and family care and maternity leave group also had higher odds of being distressed than those who were employed (β = 1.16 [95% CI: .951, 1.36], p<.001 and β = .294 [95% CI: .136, .452], p<.001 respectively).

Age was significantly negatively associated with distress (β = -.0138 [95% CI: -.0176, -.010], p<.001) (see Table 6). For every one year increase in age, there is a predicted decrease of .0138 in the log odds of income being in the distressed category. This indicates that as people get older they are less likely to be distressed.

GHQ Cut off score =3

Table 7 summarises the findings from this analysis. The number of distressed people in this analysis was 4026 and the number of non-distressed people was 15634. The analysis included a total of 19318 observations. The logistic regression analysis showed that the overall model was significant [$X^2(15)=732.92$, p<.001].

Income was significantly negatively associated with psychological distress status (β = -.0000498 [95% CI: -.0000861, -.0000134], p=0.007) (see Table 7). This indicates that those with a lower household income were more likely to be psychologically distressed. For every one penny increase in household income there is a 0.0000498 decrease in the log odds of being in the distressed category.

Effect size (F^2) was calculated from the R^2 value (.0379) using Cohen's (1988) formula.

The effect size for this analysis ($f^2 = 0.04$) was found to meet Cohen's (1988) convention for a small effect ($f^2 = 0.02$).

Table 7.

Logistic regression of psychological distress with household income and other socioeconomic factors

			Robust Standard		95% Confidence Interval	
	Variable	Coefficient	Error	Sig.	Lower Bound	Upper Bound
Household Income		-.0000498	.0000186	0.007	-.0000861	-.0000134
Gender	Female	.328	.0381	0.000	.254	.403
	Male*	0				
Ethnicity	Mixed	-.240	.174	0.168	-.582	.101
	Indian/Pakistani/Bangladeshi	-.185	.0699	0.008	-.322	-.0481
	Black African/Caribbean	-.0938	.134	0.483	-.356	.168
	Other	.0850	.120	0.480	-.151	.321
	White British*	0				
Highest	Degree or the other higher	-.0546	.0775	0.482	-.207	.0974
Qualification	A level etc	-.128	.0823	0.120	-.289	.0333
Level	GCSE etc	-.158	.0810	0.051	-.316	.000962
	Other qualification/s	-.0918	.0922	0.320	-.272	.0889
	No qualifications*	0				
Occupational	Other	1.50	.0868	0.000	1.33	1.67
Status	Retired	.0232	.0617	0.707	-.0977	.144

	Family care/Maternity leave	.285	.0755	0.000	.137	.433
	Unemployed	1.17	.102	0.000	.970	1.37
	Employed*	0				
Age	Age	-.0138	.00180	0.000	-.0172	-.010

Note. *Indicates the reference category

Gender was significantly associated with psychological distress (β = .328 [95% CI: .254, .403], p = 0.000) (see Table 7).

Only one of the ethnic groups was significantly associated with psychological distress. The Indian/Pakistani/Bangladeshi group was significantly negatively associated with psychological distress (β = -.185 [95% CI: -.322, -.0481], p=0.008). This indicates that the log odds of being distressed were .185 times lower for those who identified as Indian/Pakistani/Bangladeshi than those who identified as White British.

Table 7 shows none of the qualification levels were significantly associated with psychological distress.

Many current labour force status categories were significantly associated with psychological distress. As the employed group was the reference category, this indicates that those who are not working are more likely to be distressed than those who are employed. Those in the "other" employment category had the highest likelihood of being distressed, with the log odds being 1.5 times higher for those who were in this category compared with those who were employed (β = 1.50 [95% CI: 1.33, 1.67], p<.001). Those in the unemployed and family care and maternity leave group also had higher odds of being distressed than those who were employed (β = 1.17 [95% CI: .970, 1.37], p<.001 and β = .285 [95% CI: .137, .433], p<.001 respectively).

Age was significantly negatively associated with distress (β = -.0138 [95% CI: -.0172, -.010], p<.001) (see Table 7). For every one year increase in age, there is a predicted decrease of .0138 in the log odds of income being in the distressed category. This indicates that as people get older they are less likely to be distressed.

There were no notable differences when using the cut off score of 3 rather than the cut off score of 4 to indicated probable distress on the GHQ-12.

Research Question 2 - Is there a significant association between the relationship quality and having a diagnosed mental health condition?

A score of 50 on the SF-12 (Physical Component) is said to be average, with scores lower than this indicating lower than average physical quality of life, and higher scores indicating above average physical quality of life (Soh et al., 2021). The mean for both partner (51.4) and focal person (52.8) SF-12 (PCS) score are in line with the average score of 50.

The mean relationship cohesion subscale score was 12.5. This was the mean score for both the focal person and partners. The cut-off score for the total RDAS is 48/69, with scores below this indicating distressed couples. There is no reported cut off score for the satisfaction subscale, which is scored out of 19. However, the subscale represents 28% of the total questionnaire, so an estimated cut off score of approximately 13/20 points seems reasonable. This would indicate that the mean relationship cohesion score fell just within the distressed range.

The mean relationship satisfaction subscale score was 16.7. This was the mean score for both the focal person and partners. The cut-off score for the total RDAS is 48/69, with scores below this indicating distressed couples. There is no reported cut off score for the satisfaction subscale, which is scored out of 20. However, the subscale represents 29% of the total

questionnaire, so an estimated cut off score of approximately 14/20 points seems reasonable. This would indicate that the mean relationship satisfaction score fell within the non-distressed range.

A Spearman's rho correlation analysis was performed to check for potential multicollinearity between the focal person's distress and partner's distress ($\rho = -0.0868$, $p = 0.467$), as well as between the focal person's diagnosis status and their partner's diagnosis status $\rho = 0.276$, $p = 0.0388$). Neither ρ value was not above 0.7, therefore collinearity is not assumed (Rekha, 2019;Duda, 2022).

Table 8.

Descriptives of the sample for Research Question 2

	Variable	Frequency (Percentage)
Psychological Distress	Not distressed	63 (80.8%)
	Distressed	15 (19.2%)
Psychological Distress	Not distressed	62 (79.5%)
(Partner)	Distressed	16 (20.5%)
Relationship	Cohesion*	76 (M=12.5 [.362])
	Satisfaction*	76 (M=16.7 [.233])
Relationship (Partner)	Cohesion*	76 (M=12.4 [.357])
	Satisfaction*	76 (M=16.7 [.233])
Physical Health	SF12 (PCS)*	78 (M=52.8 [.931])
Physical Health	SF12 (PCS) Partner*	78 (M=51.4 [1.15])
(Partner)		
Marital Status	Married	37 (46.8%)

	Variable	Frequency (Percentage)
	In registered same-sex civil partnership	1 (1.27%)
	Living as a couple	41 (51.9%)
Number of children under 16 that parent is responsible for	0	51 (64.6%)
	1	16 (20.3%)
	2	8 (10.1%)
	3	3 (3.80%)
	4	0 (0%)
	5	1 (1.27%)
Diagnosis Status	Undiagnosed	71 (89.9%)
	Diagnosed	8 (10.1%)
Diagnosis Status (Partner)	Undiagnosed	70 (88.6%)
	Diagnosed	9 (11.4%)

Note. *Income and age give the frequency followed by the mean and standard error. Psychological Distress Status Gender, Ethnicity, Highest Qualification Gained, Occupational Status and Diagnosis Status are frequencies with percentages.

Dependent Variable 1 – Relationship Cohesion

The dependent variable was diagnosis status of the individual, while the independent variable was the relationship cohesion score. The model included the focal person's distress, partner's distress, marital status, number of children under 16 and physical health as control variables. The total number of observations included the analysis was 62.

The logistic regression showed that the overall model was not significant ($X^2(8)=12.68$, p=.123).

Table 9 shows the coefficients and the 95% confidence intervals for those coefficients. Distress was significantly associated with diagnosis status (β = 2.45 [95% CI: .366, 4.53], p=0.021), indicating that those who are distressed are 2.45 times more likely to be diagnosed with a mental health condition than those who are not distressed. None of the other predictor variables were significantly associated with diagnosis status.

Table 9.

Logistic regression of Relationship Cohesion score with diagnosis status and control variables

			Robust		95% Confidence Interval	
	Variable	Coefficient	Standard Error	Sig.	Lower Bound	Upper Bound
	Cohesion	.0170	.174	0.922	-.323	-.357
	Cohesion (partner)**					
Distress	Distressed	2.45	1.06	0.021	.366	4.53
	Not Distressed*					
Distress	Distressed	.758	1.18	0.520	-1.55	3.07
(partner)	Not Distressed					
Children under	0*					
16 person is	1	2.18	2.01	0.278	-1.76	6.12
responsible for	2***					

	3***					
	5***					
Children under	0*					
16 partner is	1	-3.03	2.28	0.185	-7.50	1.44
responsible for	2***					
	3***					
	5***					
Physical Health	SF-12 (PCS)	-.0734	.0574	0.201	-.186	.0392
	SF-12 (PCS) Partner	-.0305	.0502	0.543	-.129	.0679
Marital Status	Living as a couple*					
	Married	1.14	1.11	0.303	-1.03	3.32
	In a registered same sex civil partnership***					

Note. *Indicates the reference category

** *Variable was omitted due to collinearity*

*** *Group was omitted due to low sample size*

Dependent Variable 2 – Relationship Satisfaction Subscale

The dependent variable was diagnosis status of the individual, while the independent variable was the relationship satisfaction score. The model included partner's distress, marital status, number of children under 16 and physical health as control variables. The total number of observations included the analysis was 62.

The logistic regression showed that the overall model was not significant ($X^2(8)=13.02$, $p=.111$).

Table 10 shows the coefficients and the 95% confidence intervals for those coefficients. Distress was significantly associated with diagnosis status (β = 2.40 [95% CI: .331, 4.47], p=0.021), indicating that those who are distressed are 2.40 times more likely to be diagnosed with a mental health condition than those who are not distressed. None of the other predictor variables were significantly associated with diagnosis status.

Table 10.

Logistic regression of Relationship Cohesion score with diagnosis status and control variables

			Robust		95% Confidence Interval	
	Variable	Coefficient	Standard Error	Sig.	Lower Bound	Upper Bound
Relationship	Satisfaction	-.134	.227	0.554	-.579	.310
	Satisfaction (partner)**					
Distress	Distressed	2.40	1.06	0.023	.331	4.47
	Not Distressed*					
Distress	Distressed	.636	1.20	0.595	-1.71	2.98
(partner)	Not Distressed					
Children under	0*					
16 person is	1	2.38	1.84	0.196	-1.23	5.95
responsible for	2***					

	3***					
	5***					
Children under	0*					
16 partner is	1	-3.26	2.13	0.127	-7.44	.927
responsible for	2***					
	3***					
	5***					
Physical Health	SF-12 (PCS)	-.0733	.0561	0.191	-.183	.0366
	SF-12 (PCS) Partner	-.0296	.0465	0.524	-.121	.0615
Marital Status	Living as a couple*					
	Married	1.21	1.11	0.276	-.963	3.37
	In a registered same sex civil partnership***					

Note. *Indicates the reference category

** *Variable was omitted due to collinearity*

*** *Group was omitted due to low sample size*

Chapter 4: Discussion

Chapter Summary

This chapter begins by summarising the key findings from the analyses, whilst considering their statistical and practical significance. The findings are then interpreted in the context of relevant theories, such as social stratification and intersectionality theories. The strengths and limitations of the research are then explored and suggestions for future research are made. The chapter ends with reflections on how the author's personal experiences influenced their

approach to the research and their interpretations of the findings, before drawing together final conclusions.

Overview of Main Findings

The UKHLS sample corresponds well with the UK census so we can be fairly sure that the sample is a good representation of the UK population. Although the proportions did not match exactly, we cannot make a clear comparison between UKHLS and the census as slightly different questions were asked in the census than in UKHLS. Furthermore, the timeframes over which the data were collected for each were not the same.

The first research question used logistic regression to investigate the association between household income and psychological distress, while controlling for gender, ethnicity, highest qualification level, occupational status, and age. The results showed that the overall model was significant. There was a significant negative association between income and psychological distress. Lower income individuals were more likely to experience psychological distress. Gender was significantly associated with psychological distress, with females more likely to be distressed. Age was negatively associated with distress, indicating that older individuals are less likely to experience psychological distress. Several labour force status categories were significantly associated with distress. Those not employed had higher distress levels compared to the employed group. The "other" employment category had the highest distress levels. Unemployed individuals and those on family care/maternity leave also had higher distress level. No significant associations were found between any ethnic group or qualification level and psychological distress. In summary, the analysis demonstrates that lower household income, gender (female), certain employment statuses, and younger age are significant predictors of higher psychological distress.

The second research question looked at the association between relationship quality and having a diagnosed mental health condition, using two dependent variables (relationship cohesion and relationship satisfaction) and control variables (partner's distress, marital status, number of children under 16, and physical health). Neither relationship cohesion scores or relationship satisfaction scores were significant predictors of having a diagnosed mental health condition. The only significant predictor was the distress score of the focal person, which indicated that those who were distressed were 2.45 times more likely to be diagnosed with a mental health condition than those who were not distressed.

These results suggest that household income is negatively associated with psychological distress. However, the relationship quality of couples was not associated with whether someone has a diagnosed mental health condition or not.

However, it is important to consider the practical significance of the findings before drawing any firm conclusions. The statistical power of an analysis (the ability to detect a significant relationship between variables) increases as the sample size increases (Serdar et al., 2021). Therefore, the analysis from the first research question would have had large statistical power due to the large sample size, and thus would have been more likely to find significant effects even if the relationships between the variables were very small and not meaningful. This is an issue as it increases our chances of making a Type 1 error and concluding that there was a meaningful relationship between the variables when there was not (Columb and Atkinson, 2016).

Effect sizes are not influenced by the sample size, therefore, these were calculated to assess if the relationship between the variables was still present without the influence of the large sample size. If an effect size is small, it suggests that the findings may be statistically significant but not practically significant. The effect sizes for the analyses examining the

association between income and psychological distress ($f^2 = 0.06$) met Cohen's criteria for a small effect ($f^2 = 0.02$) (Cohen, 1988), which suggests that the findings may not be practically significant.

I attempted to control for the impact of household size on income by using equivalised household income (the total household income divided by the number of people in the household). However, this method of calculating income does not necessarily indicate whether the household is under financial pressure, and it may be the pressure that explains the relationship between income and distress (French & Vigne, 2019). Indeed, subjective indicators like financial strain have been found to be more informative than objective measures of income, particularly in studies concerning mental health (Ryu & Fan, 2023). Some researchers have suggested that disposable income is a more meaningful measure of income in social research (Galobardes et al., 2006).

In contrast to the first research question, the sample size for the second research question was relatively small. Therefore, I was more at risk of making a Type 2 error (failing to detect a significant effect when there was one) (Columb and Atkinson, 2016). In particular, some of the categories for the control variables were very small, so it would have been nearly impossible to detect whether an association between the variables was present.

Interpretation of the results

Some social groups have more power and resources than others, a concept that is known as social stratification (McLeod, 2013). Studies report that it is this unequal distribution of power and resources that contributes to the development of mental health problems (Muntaner et al., 2013) and that those with less resources are more likely to experience distress (Anthias, 2002). Indeed, my findings support this suggestion, as there was an association between income and psychological distress.

However, social stratification theory would also predict that women and ethnic minorities are more likely to experience distress than white men, as white men are often perceived to have more power in society (Keith & Brown, 2018). Whilst some of the findings from my study fit with this theory, as psychological distress was more prevalent in women, the results for ethnic minorities do not fit with these predictions. However, my study did not look at the combined impact on distress when someone was both female and from an ethnic minority background. A study by Farid et al. (2020) reported that female immigrants were more likely to have undiagnosed depression than non-immigrants. However, this effect was not observed in males, which suggests that immigration status and gender combined to produce a unique effect on distress that was not felt by men. There is some evidence that certain aspects of social status can protect against the negative effects of socioeconomic status on psychological distress (Dougall et al., 2024). This suggests that relationships between demographic variables and distress are complex and may interact to cause unexpected effects in some circumstances.

Intersectionality theory is the theory that every person has numerous different social identities that intersect to shape the outcomes specific to that individual (Crenshaw, 1989). Intersectionality is particularly helpful when considering how people face multiple forms of stress and challenges at the same time. For example, someone might experience distress due to family issues, but factors like ethnicity and gender can make it even harder for them (Few-Demo, 2014). The findings from this study suggest a multitude of interconnected factors, such as income, and also being of a certain gender or occupation status meaning that you are more likely to have psychological distress. However, unfortunately it was not possible to identify the interactions between all of the factors. Such analyses are likely to be very complex, but if possible, would help us to understand why certain individuals and families cope differently with the various stressors and challenges that impact on their psychological

distress. One paper attempted to investigate how different identities intersect within families to influence psychological distress (Schmitz et al., 2020). This study investigated how the family dynamics and the marginalised identities of Latina LGBTQ+ youths intersected to influence their distress. The researchers identified that distress was impacted when the young people felt unable to express themselves due to religious pressure from their families. This is an interesting paper that demonstrates how multiple factors intersect to impact on wellbeing. However, the authors concluded that there has not been enough focus on using intersectionality to improve our basic understanding of family relationships when it comes to psychological distress.

Some research suggests that the intersectionality of demographic factors also influences whether people seek help for, or receive a diagnosis for, their distress. A recent review found that people with lower incomes tend to access mental health treatment later, and tend to be at the point of crisis before they access treatment (Barnett et al., 2023). It has also been reported that those with lower incomes do not engage with services as frequently as those with higher incomes (Fordham et al., 2023). The reasons for this have not been investigated, but I could hypothesise that financial pressures may make it more difficult for clients to engage with community mental health services, which are typically offered only during ‘office hours’, due to concerns regarding missed hours at work or paying for transport to clinic appointments. This fits with the results of our study, which suggest that having a lower income is associated with psychological distress. This suggests that it could be important to try to improve measures to get support to low-income households before their distress reaches crisis point. It is important to keep in mind that this support could take many forms, be that psychological, social, or financial, and that a one-size fits all approach is unlikely to be helpful, as the circumstances and needs of households are likely to be very different. Therefore, services may benefit from a holistic approach which can offer different forms of support based on the

need. Such services are beginning to be developed in the UK, as Early Intervention for Psychosis services offer support with physical and mental health and wellbeing, as well as family interventions and employment support. These services are showing positive outcomes (Behan et al., 2020; Frawley et al., 2023).

In summary, humans exist within many different complex systems that are influenced by various social and relational factors. There are likely to be so many different interacting factors we may never be able to fully understand all of the complex intersections that influence wellbeing. However, it is important to attempt to recognise which factors are involved so that individual and social interventions to support wellbeing can be guided accordingly.

Implications of the findings

I hope that by providing further evidence of the link between income and psychological distress in the UK, these findings will encourage the development of policies and interventions to support families to cope with hardship and psychological distress.

The findings suggests that a socio-political approach to reducing psychological distress maybe more effective than a medical model approach. This is supported by the manifesto put together by A Mentally Healthier Nation (A Mentally Healthier Nation, 2023). The manifesto is put together and supported by over 30 organisations and sets out policies they hope to be implemented by the government over the next ten years to address the state of mental health in the UK. The manifesto includes the following recommendations for how to increase the incomes of the most deprived groups in society: Improve people's security by improving the quality and availability of social housing, reforming the legislation for sick pay and introducing a minimum income guarantee. Ensure the Work Capability Assessment is adapted to fairly assess the needs of those with mental health issues and enable them to

access the Personal Independence Payments they need. Encourage community wealth building programmes, where organisations use local businesses to source the resources they need to boost the local economy. Such programmes have proved to be successful, with one programme in Preston being associated with a reduction in depression prevalence and antidepressant medication, and a 9% increase in life satisfaction in comparison to control regions (Rose et al., 2023). This demonstrates the potential impact of economic growth on public wellbeing.

These approaches respect that some individuals may prefer not to seek professional support for their distress, perhaps due to cultural reasons, whilst also acknowledging that distress is a normal response to difficult circumstances. If policy makers were to embrace a societal model of mental distress over the medical model, it would help to move to focus away from individual pathology and towards social causes of distress. This would put more onus on the government to tackle social causes of distress, and improve people's wellbeing without them having to experience the stigma of accessing a diagnosis or mental health services.

Strengths and Limitations

The main strengths of this research came from the use of the UKHLS dataset. Using secondary data allowed more time for data analysis. This meant that the study could investigate two different research questions and make a larger contribution to the evidence base on psychological distress than would have been possible if primary data had had to be collected. The sample was another strength of this project as it was large and reasonably well representative of the UK population, so the findings can be generalised.

Despite these strengths, there are also limitations to using secondary data. For instance, I was not able to choose the measures that best fitted with my research aims, and I had no control over how the measures were administered. This was an issue, as the wording of the General

Health Questionnaire (GHQ) may not adequately capture the experiences of distressed individuals when they have experienced distress for a long time. The questionnaire assesses symptoms based on whether they have been experienced 'more than usual' or 'less than usual' over the past two weeks. Therefore, those with enduring psychological distress, may have become accustomed to their distress and not consider their distress to be any higher than 'usual'. Furthermore, it has been suggested that when mental health screening measures are read out to participants by an administrator, they are susceptible to the biases of the administrator who is reading the questionnaire (Ford et al., 2020). As some questionnaires are administered verbally in UKHLS, the findings could have been influenced by administrator bias. Moreover, response bias is said to be higher when questionnaires are administered verbally, due to demand characteristics and social desirability bias of respondents (Latkin et al., 2017).

One limitation of this study is that I relied on self-report to identify the diagnosis status of individuals. It is possible that some people may have answered this question dishonestly due to fear of judgement or other reasons, or they may not have recalled a diagnosis which they received in the past. Other research papers have used structured or semi-structured interviews to check whether individuals meet the criteria for a mental health diagnosis, as discussed previously in Table 1. However, using such measures was not feasible in this study, nor did it feel appropriate, as I was not interested in whether the participants met the criteria for a diagnosis. I was only interested in whether or not they had received a diagnosis in the past. A further limitation regarding diagnosis status is that, due to the availability of data, the diagnosis data had to be taken from Wave 10 and matched onto the relationship data from Wave 9. It is possible that the diagnosis status of some individuals changed between Wave 9 and 10, and therefore their diagnosis status reported at Wave 10 may not reflect what their actual diagnosis status was at Wave 9.

Due to some categories having small numbers, I had to combine some categories, such as some ethnicities and occupational status categories. I am mindful that in doing so I fail to capture the unique experiences of some of the more marginalised individuals in society. Furthermore, I am particularly mindful of combining categories in the ethnicity category, as I am aware that different cultures can have very different experiences of distress (Tyson & Flaskerud, 2009), which may not be represented in the findings when the results of different ethnic categories are combined. Moreover, I am concerned that selecting white as the reference category may have exacerbated the narrative that white is the 'normal' category to which all other ethnicities should be compared (Shen Johfre and Freese, 2021). This is of particular concern as so called 'WEIRD' (Western, Educated, Industrialised, Rich, Democratic) individuals are already over-represented in research (Henrich et al., 2010).

As the analysis method used for both research questions was logistic regression, it is only possible to establish whether there is an association between two variables, I cannot determine the direction of any associations between the variables to know whether one is influencing the other, vice versa, or whether the relationship is bidirectional. Future studies may be able to investigate such relationships using methods such as structural equation modelling. I also need to consider that mental health is highly correlated between partners, therefore it can be difficult to disentangle whether one partner is influencing the other, or vice versa. Previous research has shown that some people experience benefits from caring for a partner with a mental health condition (Aschbrenner et al., 2010), whereas others find it a burden that increases their psychological distress (Jan Shah et al., 2010). The data available from UKHLS does not allow us to study in detail the complex nuances within these relationships, and therefore this topic may warrant further investigation using qualitative measures.

Future research directions

This study has identified an association between household income and psychological distress. Whilst the effect size was small, the cut off scores of 3 or 4 were used to differentiate between those who were distressed and not distressed. It is possible that if a higher cut off score had been used, so only those with more severe distress were included, the effects may have been clearer. Future research could investigate whether the outcomes vary based on the severity of the distress of the individual.

Whilst the relationship analyses did not yield significant results, this may have been due to the small sample size. It may be interesting to repeat the study using data from multiple waves of UKHLS to increase the amount of data available for the analysis. This would also allow for other interesting relationship variables to be tested, such as whether the quality of relationships between other household members (such as parent-child, siblings) has an impact on psychological distress. Furthermore, based on the data available it was difficult to investigate any differences in relationships between heterosexual or same sex couples, so this may make an interesting topic for future research.

Given that the systematic review identified that undiagnosed distress was under-researched, and that more research was needed to understand its impact on households and the emotional impact of living with someone with undiagnosed psychological distress, it would have been interesting to directly compare households with diagnosed and undiagnosed distressed adults. This would have allowed us to investigate whether it was distress itself, or the diagnosis status of the individual, that was more strongly associated with income.

Household panel studies such as UKHLS often exclude travelling communities and homeless people, thus neglecting two of the most vulnerable groups in society. As these groups are not represented in this study, the recommendations for policies and interventions do not take their

needs into account. Therefore, it is important for future research to include the experiences of these marginalised individuals, to ensure that policies can be designed with their needs in mind. According to a report by Homeless Link in 2014, approximately 80% of homeless individuals in England felt that they were experiencing a mental health problem, however, only 45% had a professional diagnosis (Homeless Link, 2014). This shows that undiagnosed mental distress is a significant issue in the homeless population in the UK, however, unfortunately their experiences were not included in the present study. This would be an important topic for future research to explore.

Self-Reflexivity

This section contains my personal reflections on the research process, as I recognise that my education, personal, and professional life experiences will have influenced my approach to this project.

I was interested in this topic due to my personal experiences of being prescribed medication for a diagnosed mental health problem at a young age. My own experiences have shown me the negative and long-lasting implications that medication and diagnosis can have on someone's life. These experiences led me to value psychological and social models of mental health over the medical model, as I can now see that my issues were a normal response to distressing circumstances, rather than a disease. Therefore, this study has been influenced by my desire to look beyond the medical model to understand the social and psychological causes of mental distress.

Whilst writing this thesis, and throughout my doctorate, I have struggled due to having dyslexia. In lectures I would often struggle to keep up with the material, particularly when we needed to read case studies, and I would often feel inferior to my peers when I had nothing meaningful to contribute to discussions as I struggle to process new information and put my thoughts into words. This has often left me feeling like I do not belong, a feeling

many have referred to as imposter syndrome (Clance & Imes, 1978). This caused me to reflect on how many marginalised individuals in society may experience such feelings regularly throughout their lives, especially with the recent increases in xenophobia, discrimination, and hate crimes (UN, 2023).

Whilst I was able to cope with psychological distress and dyslexia and achieve my goals of studying for a doctorate, I am mindful of how my privileged upbringing has made this possible. I was fortunate enough to grow up in a financially stable household, with a supportive family who paid for my private education and supported me to attend university. However, I often experience feelings of guilt regarding my privileged upbringing as I know that many other people do not have access to the same resources that I had. I have witnessed this first-hand whilst working as a Trainee Clinical Psychologist, as I have supported many clients whose distress was caused by, or exacerbated by, social issues such as housing or financial worries. As I became more aware of how many opportunities I had compared with other people, the guilt of coming from a privileged background made me want to do more to challenge the inequalities in society. By completing this research project, I hoped to use my privilege to demonstrate the needs of those who are distressed, in the hopes that one day everyone will have access to the resources they need to thrive.

Furthermore, my research interpretations would have been influenced by the teaching material from my clinical psychology course, particularly the systemic part of the course. The systemic view of mental health sees mental distress as being contained within the system in which an individual exists, rather than within the individual themselves (Adshead, 2009). This view understands mental distress as being a breakdown in one part of the system and therefore invites a less pathologizing approach to treating distress, as it attempts to fix the system rather than the people within it (Bowen, 1966). This view strongly influenced my approach to designing this study and interpreting the findings, as this view strongly resonates

with me and my beliefs that distress is not a disease but a normal response to difficult circumstances. Another researcher who had not been exposed to this teaching or my life experiences may have approached this topic differently.

Conclusions

The aims of the study were to explore and assess the associations between income, relationship quality and psychological distress using data from the UK Household Longitudinal Study. Whilst household income was found to be negatively associated with psychological distress, there was no significant association found between relationship quality and having a mental health condition. However, the limitations of the study mean that more research will be needed to investigate further possible associations and understand the complex intersecting relationships between the variables.

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Appendix

RDAS-Revised Dyadic Adjustment Scale

Name_____ **Date**_____ **Session #**_____

Most people have disagreements in their relationships. Please indicate below the extent of agreement or disagreement between you and your partner for each item.

	Always Agree (5)	Almost Always Agree (4)	Occasionally Agree (3)	Frequently Disagree (2)	Almost Always Disagree (1)	Always Disagree (0)
1. Religious matters						
2. Demonstrations of affection						
3. Making major decisions						
4. Sex relations						
5. Conventionality (correct or proper behavior)						
6. Career decisions						

	All the Time (0)	Most of the time (1)	More often than not (2)	Occasionally (3)	Rarely (4)	Never (5)
7. How often do you discuss or have you considered divorce, separation, or terminating your relationship?						
8. How often do you and your partner quarrel?						
9. Do you ever regret that you married (or lived together)?						
10. How often do you and your mate "get on each other's nerves"?						

	Every Day (4)	Almost Every Day (3)	Occasionally (2)	Rarely (1)	Never (0)
11. Do you and your mate engage in outside interests together?					

How often would you say the following events occur between you and your mate?

	Never (0)	Less than once a month (1)	Once or twice a month (2)	Once or twice a week (3)	Once a day (4)	More often (5)
12. Have a stimulating exchange of ideas						
13. Work together on a project						
14. Calmly discuss something						

For office use only	***CON***	***SAT***	***COH***	***TOT***

Consensus (1-6): 22; *Satisfaction (7-10):* 14; *Cohesion (11-14):* 11; *Total:* 48

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RDAS Scoring Sheet

	Always Agree	Almost Always Agree	Occasionally Agree	Frequently Disagree	Almost Always Disagree	Always Disagree
1. Religious matters	5	4	3	2	1	0
2. Demonstrations of affection	5	4	3	2	1	0
3. Making major decisions	5	4	3	2	1	0
4. Sex relations	5	4	3	2	1	0
5. Conventionality (correct or proper behavior)	5	4	3	2	1	0
6. Career decisions	5	4	3	2	1	0

	All the Time	Most of the time	More often than not	Occasionally	Rarely	Never
7. How often do you discuss or have you considered divorce, separation, or terminating your relationship?	0	1	2	3	4	5
8. How often do you and your partner quarrel?	0	1	2	3	4	5
9. Do you ever regret that you married (or lived together)?	0	1	2	3	4	5
10. How often do you and your mate "get on each other's nerves"?	0	1	2	3	4	5

	Every Day	Almost Every Day	Occasionally	Rarely	Never
11. Do you and your mate engage in outside interests together?	4	3	2	1	0

How often would you say the following events occur between you and your mate?

	Never	Less than once a month	Once or twice a month	Once or twice a week	Once a day	More often
12. Have a stimulating exchange of ideas	0	1	2	3	4	5
13. Work together on a project	0	1	2	3	4	5
14. Calmly discuss something	0	1	2	3	4	5

a) For each spouse, score their RDAS according to the values given above (lower = more distressed).
b) Add items 1-6: _____ (*Consensus*: 22 = the cutoff score to discriminate between distress/nondistress)
c) Add items 7-10: _____ (*Satisfaction*: 14 = the cutoff score)
d) Add items 11-14: _____ (*Cohesion*: 11 = the cutoff score)
e) Add all items: _____ (*Total*: 48 = the cutoff score)
f) List scores in appropriate box on each partner's copy.

For additional information on each of the scales/subscales, the questions related to each are listed below:
Consensus: Items 3 & 6 = decision making, 1 & 5 = values, 2 & 4 = affection
Satisfaction: Items 7 & 9 = stability, 8 & 10 = conflict
Cohesion: Items 11 & 13 = activities, 12 & 14 = discussion