Exploring the Potential Psychological Benefits of a Death Reflection Manipulation-Based Intervention

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Acknowledgements

Over the course of this research, I was continually drawn to reflect, alongside the study participants, on the changing relationship with my mortality. I come away from this experience more open to opportunities for closeness and alignment of values amongst those who have experienced loss and have come with the understanding that “life continues in a different way” (Laura). More of a place for spirituality has developed in me as a source of connection to all living things and humility in the face of mortality. If, in fact, my relationship to my mortality is representative of that of others reading this, I would urge them to consider that death may be life’s most challenging but most rewarding inevitabilities.

I’d like to thank the participants who committed themselves so fully to this study. I hope I have done your efforts justice. I want to thank my supervisors Hugo Senra, Philip Cozzolino, and Susan McPherson for their invaluable support throughout writing my thesis. Thank you to friends from my cohort for helping me brainstorm and test ideas in clinical seminars and research presentations.

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Abstract

Background: Mortality awareness research has emphasised fearful aspects of death. Contrastingly, death reflection has been associated with a number of psychological benefits and may offer a more holistic, growth-orientated approach to mortality awareness. As a novel psychological intervention, the lack of research on the effectiveness of death reflection, both within clinical psychology research and outside of a one-off event in laboratory conditions, needs to be addressed.

Aims: This study reviewed the literature on interventions for death anxiety in working age adults before investigating the potential psychological benefits of an extended version of the *Death Reflection Manipulation* (Cozzolino *et al.*, 2004) and evaluated this intervention using a mixed methods design. This was hoped to inform future studies investigating the effectiveness of death reflection as a psychological intervention.

Methods: The systematic review asked *What Psychological Interventions Have Been Used to Treat Death Anxiety in Working Age Adults?* Subsequently, death reflection was evaluated quantitatively through psychometric outcome measures (wellbeing, death attitudes, authenticity, depression, anxiety, and stress) and qualitative interviews to explore individuals' experiences of death reflection.

Results: The systematic review, apart from identifying methodological issues, found that a variety of psychological interventions efficaciously addressed death anxiety with therapy type substantially impacting treatment effectiveness. Quantitative findings indicated that, while death reflection was associated with, at best, modest effects in the outcomes investigated, there were notable trends towards significance. There was descriptive evidence to suggest this intervention's effectiveness in bringing about positive changes in wellbeing and death attitudes.

Discussion: Findings from quantitative and qualitative analysis, alongside existing literature, provided preliminary evidence that death reflection has the potential to improve different psychological outcomes, pending confirmation in a larger scale intervention study. These findings form part of a rationale for death reflection to be developed into a form of psychological therapy in the future.

Contents

Exploring the Potential Psychological Benefits of a Death Reflection Manipulation-Based Intervention 1
Acknowledgements 2
Abstract 3
Contents 4
List of Figures 8
List of Tables 8
1. Introduction Chapter 9
1.1 Chapter Introduction 9
1.2 Definition of key concepts 9
1.3 Study Background 10
1.3.1 Philosophical Perspectives on Death Attitudes 10
1.3.2 Death Attitudes in a Cultural Context 11
1.3.3 Death Attitudes as Multidimensional 12
1.3.4 Age and Fear of Death 13
1.4 Psychological Theories on Death Attitudes 14
1.4.1 Positive Effects of Mortality Awareness 16
1.4.3 Death Anxiety as a Separate Clinical Construct to General Anxiety 18
1.4.4. The Conceptual Value of Existential Psychology for Clinical Psychology Research 19
1.5 The Death Reflection Manipulation 21
1.5.1 Modification of the Death Reflection Manipulation 22
1.6 Theoretical Background for Qualitative Analysis 23
1.7 Empirical Research on the Effects of Mortality Awareness 25
1.7.1 Previous Systematic Reviews on Interventions for Death Anxiety 25
1.8 Chapter Summary and Rationale for Systematic Literature Review 29
Systematic Literature Review Method 29
1.9 Overview 29
1.10 Search Strategy 30
1.11 Eligibility Criteria 30
1.12 Screening Procedure 31
1.13 Quality Assessment 32
1.14 Risk of Bias Assessment 32
1.15 Statistical Methods 35
1.16 Figure 1 36
1.17 Table 1 37

Systematic Literature Review Results 41
1.17 Study Selection 41
1.18 Study Characteristics 41
Systematic Literature Review Discussion 42
1.19 Systematic Literature Review Conclusion 45
1.20 Limitations of the Review and Recommendations for Further Research 46
1.21 Research Aims and Research Question of Current Study 47
2 Methods Chapter 50
2.1 Chapter Introduction 50
2.2 Epistemological Positioning and Justification of Methodology 50
2.3 Design 51
2.3.1 Death Reflection Manipulation 51
2.3.2 Consultation 53
2.3.3 Participants 54
2.3.4 Conceptual Justification of the Chosen Age Range 55
2.3.5 Participant Recruitment 56
2.3.6 *Screening* 57
2.3.7 Inclusion and Exclusion Criteria 58
2.3.8 Delivery of the Intervention 59
2.3.9 Rolling Pilot 61
2.3.10 Controlled Design 61
2.3.11 Intervention 63
2.3.10 Recruitment Methods 64
2.4 Procedure 64
2.4.1 Week One (Baseline) 64
2.4.2 Week Two 65
2.4.3 Week Three 66
2.4.4 Week Four (End of Treatment) 66
2.4.5 Week Five and Six (Qualitative Interviews) 67
2.5 Measures 67
2.5.1 Screening Measure 68
2.5.2 Primary Outcome Measures 69
2.5.3 Secondary Outcome Measures 72
2.5.4 Qualitative Interview Schedule 74
2.6 Data Collection 75
2.7 Data Analysis 76
2.8 Ethical Considerations 79

2.9 Dissemination ... 80
2.10 Chapter Summary ... 81
3 Results Chapter ... 83
3.1 Chapter Introduction ... 83
3.2 Analysis ... 83
3.3 Quantitative Results ... 83
3.3.1 Descriptive Statistics ... 83
3.3.2 Table 2 ... 85
3.3.3 Wellbeing ... 86
3.3.4 Descriptive Statistics for Wellbeing ... 86
3.3.5 Fear of Death ... 88
3.3.6 Descriptive Statistics for Fear of Death ... 88
3.3.7 Death Avoidance ... 90
3.3.8 Descriptive Statistics for Death Avoidance ... 90
3.3.9 Depression ... 93
3.3.10 Descriptive Statistics for DASS-21 Depression ... 93
3.3.11 Anxiety ... 95
3.3.12 Descriptive Statistics for DASS-21 Anxiety ... 95
3.3.13 Stress ... 97
3.3.14 Descriptive Statistics for DASS-21 Stress ... 97
3.4 Qualitative Results ... 99
3.4.1 Demographic Information ... 99
3.4.2 Table 3 ... 100
3.4.3 Superordinate Theme 1: Multifaceted Mortality ... 101
3.4.4 Superordinate Theme 2: Dynamics of Death Reflection ... 108
3.5 Chapter Summary ... 115
4 Discussion Chapter ... 116
4.1 Chapter Introduction ... 116
4.2 Summary of Research ... 116
4.3 Summary of Quantitative Findings ... 117
4.3.1 Wellbeing ... 118
4.3.2 Fear of Death ... 119
4.3.3 Death Avoidance ... 121
4.3.4 Depression ... 122
4.3.5 Anxiety ... 124
4.3.6 Stress ... 125
4.4 Hypotheses summary ... 126

4.5 Summary of Qualitative Findings 126
4.5.1 Subordinate Theme 1.1: Death and Religion 127
4.5.2 Subordinate Theme 1.2: Death and Relationships 129
4.5.3 Subordinate Theme 1.3: Death and the Individual 130
4.5.4 Subordinate Theme 2.1: Responses to Death Reflection 132
4.5.5 Subordinate Theme 2.2: Ways of Coping with Death 133
4.5.6 Subordinate Theme 2.3: Experiences of Loss 135
4.6 Discussion of Quantitative and Qualitative Findings 137
4.7 Strengths and Limitations of Current Study 140
4.7.1 Sampling 140
4.7.2 Design 142
4.7.3 Measures 145
4.8 Conceptual Strengths and Limitations 146
4.9 Theoretical Implications of the Study 148
4.10 Clinical Implications of the Study 150
4.11 Future Research Recommendations 152
4.12 Conclusion 154
4.13 Chapter Summary 155
4.14 Account of Self-Reflexivity 155
References 157
Appendices 174
4.15 Appendix A – Death Scenario 174
4.16 Appendix B – Participant Information Sheet 174
4.17 Appendix C – Participant Consent Form 178
4.18 Appendix D – Participant Demographic Information Form 181
4.19 Appendix E – Clinical Outcomes in Routine Evaluation - 10 Version 1.1 Scale 182
4.20 Appendix F – Facilitating Research Fund Approval Form 183
4.21 Appendix G – Study Advert 185
4.22 Appendix H – Death Reflection Script 185
4.23 Appendix I - Short Warwick–Edinburgh Mental Wellbeing Scale 187
4.24 Appendix J - Death Attitude Profile – Revised Scale 187
4.25 Appendix K - Real Self Overlap Scale 189
4.26 Appendix L - Depression, Anxiety and Stress Scale 190
4.27 Appendix M – Qualitative Interview Schedule 190
4.28 Appendix N – Guidelines for Key Stages of Conducting IPA 191
4.29 Appendix O – Table of Superordinate and Subordinate Themes 191
4.30 Appendix P – Ethics Application 192

4.31 Appendix Q – Risk Assessment 199
4.32 Appendix R – Notice of Ethical Approval 201
4.33 Appendix S - Descriptive Statistics for Week 1/Baseline 202
4.34 Appendix T - Descriptive Statistics for Week 2 203
4.35 Appendix U – Descriptive Statistics for Week 3 204
4.36 Appendix V – Descriptive Statistics for Week 4 205
4.37 Appendix W – Descriptive Statistics for Week 5/End of Treatment 206
4.38 Appendix Y – Interaction Plot for Wellbeing 207
4.39 Appendix X – Box and Whisker plot for Wellbeing 208
4.40 Appendix Z – Interaction Plot for Fear of Death 208
4.41 Appendix AA – Box and Whisker Plot for Fear of Death 209
4.42 Appendix AB – Interaction Plot for Death Avoidance 210
4.43 Appendix AC – Box and Whisker Plot for Death Avoidance 210
4.44 Appendix AD - Interaction Plot for Depression 211
4.45 Appendix AE – Box and Whisker Plot for Depression 211
4.46 Appendix AF – Interaction Plot for Anxiety 212
4.47 Appendix AG – Box and Whisker Plot for Anxiety 212
4.48 Appendix AH – Interaction Plot for Stress 213
4.49 Appendix AI – Box and Whisker Plot for Stress 213
4.50 Appendix AJ – Table of Results of Non-Parametric Rank-Based Analysis 214

List of Figures

Figure 1: Flow Diagram of Search, Screening, and Inclusion/Exclusion Process 36

List of Tables

Table 1: Characteristics and Outcomes of Studies in Systematic Literature Review 37

Table 2: Descriptive Statistics for Quantitative Sample 83

Table 3: Demographic Information for Qualitative Sample 98

Table 4: CORE-10 v1.1 Clinical scores and interpretations 178

Table 5: Table of Superordinate and Subordinate Themes 187

Table 6: Descriptive Statistics for Week 1/Baseline (All Measures) 198

Table 7: Descriptive Statistics for Week 2 (All Measures) 199

Table 8: Descriptive Statistics for Week 3 (All Measures) 200

Table 9: Descriptive Statistics for Week 4 (All Measures) 201

Table 10: Descriptive Statistics for Week 5/End of Treatment (All Measures) 202

1. Introduction Chapter

1.1 Chapter Introduction

The following chapter will define key terms and concepts related to mortality awareness before establishing the philosophical perspectives underpinning this construct and exploring how it manifests in a cultural context. *Death attitudes* will be critically discussed with an emphasis on the multidimensional nature of death attitudes, including the relationship between age and fear of death. *Death reflection* will be introduced in the context of the relevant psychological theories and empirical research before an explanation is given of how death reflection will be modified for the purposes of this research. The methodology for qualitative analysis will then be introduced leading to the rationale for the current study in light of previous literature reviews in relevant areas. This will be followed by a statement of the aims, research question, and hypotheses for the current study on exploring the potential psychological benefits of death reflection over time.

1.2 Definition of key concepts

Death attitudes refer to the various responses or mental/emotional states we can take towards death, such as fear, avoidance, ignorance, and acceptance. *Death acceptance* refers to "being relatively at ease with one's awareness of personal mortality" (Klug & Sinha, 1987, p.229). Klug and Sinha define it as the "the deliberate, intellectual acknowledgement of the prospect of one's own death and the positive emotional assimilation of the consequences" (p.230). Death attitudes have been studied in the context of m*ortality awareness* which is a multidisciplinary field of research with wide-reaching clinical applications for areas such as clinical psychology, nursing, and palliative care. Mortality awareness refers to the extent to which people are conscious of their own mortality and the impact this awareness has on their feelings, thoughts, and behaviours. Mortality awareness research is concerned with studying the responses and meanings generated when we confront the fact of our inevitable death which, in turn, has implications for how we live. The thoughts and feelings evoked by reminders of death and mortality, such as *death anxiety*, can be processed using *death reflection*. While no definition accounts for the variability in how death anxiety is experienced (Lehto & Stein, 2009), there is consensus in viewing it as a multidimensional construct experienced, for

instance, as a reaction to the loss of life, or the dying process, of oneself or others (Collett & Lester, 1990; Nia *et al.*, 2019). The term *Death Reflection Manipulation* (DRM) will be used to refer to the original intervention conducted by Cozzolino *et al.* (2004) whereas *DRM-based intervention* refers to the DRM as it was modified for the current study. *Death reflection* will be used interchangeably with the *DRM-based intervention*, except where its use would be ambiguous, in which case *DRM-based intervention* will be used.

1.3 Study Background

1.3.1 Philosophical Perspectives on Death Attitudes

Death is the single universal event that affects us in more ways than we can know (Greenberg *et al.*, 2006; Wass & Neimeyer, 1995; Yalom, 2011). While death is a fundamental part of life for every living organism, the unique human capacity for meaning-making and social construction imbues death with biological, psychological, spiritual, societal, and cultural components (Kastenbaum, 2000). Death evokes multiple powerful, complex, and sometimes contrary, meanings and responses such as loss, loss of control, separation, and meaninglessness (Yalom, 2011; Stolorow, 1979; Noyes *et al.,* 2002). Mortality awareness research has demonstrated that the meanings we attach to death have important implications for our wellbeing (Wong and Tomer, 2011) by defining how we live and how we define personal meaning (Neimeyer, 2005; Tomer, 2000; Tomer *et al.*, 2008).

Reckoning with mortality is a central theme of Western philosophy, from the ancient to the contemporary period. In Plato's *Phaedo* (Plato, 1911), after Socrates is sentenced to death, he argues the task of the philosopher is learning to die well. In Stoic philosophy, death and the fear of death are discussed overtly by Epictetus: "I can't escape death; but is it beyond my power to escape the fear of death…?" (Hard & Gill, 2014). Similarly, in Seneca, overcoming fear of death was seen as essential to living a good life; "He lives badly who does not know how to die well" (Seneca, 2018). In the modern period, the implications of mortality for human life forms the bedrock of existential philosophy and psychology (Hoelterhoff, 2015). Martin Heidegger (2008) proposes that, only through our awareness of (and our inevitable anxiety of) death, can we face death and, thereby, live a meaningful life. The human subject or *Dasein* is defined as being an entity for

whom "in its Being has this very Being as an issue" (Heidegger, trans. 1927/1962, p.63). Similarly, for Søren Kierkegaard (Kierkegaard & Lowerie, 1941), if we are not willing to embrace the terror of death along with the joy of life, then we are not living authentically or meaningfully. Viktor Frankl's experiences in a German concentration camp formed the basis for his writings (e.g. Frankl, 2014; 2017) and his establishment of *logotherapy*, a form of existential psychotherapy that proposes that humans can cope with hardship and suffering involved in death by finding meaning and purpose in life. Broadly speaking, these philosophical perspectives emphasise the importance of confronting and accepting death as part of living a fulfilling and meaningful life.

1.3.2 Death Attitudes in a Cultural Context

At a cultural level, research in cultural anthropology has observed that death-related rituals occupy a central place in virtually all known cultures (Goldschmidt, 1990). That said, responses to death vary greatly. In Western societies, the apparent taboo surrounding open cultural conversations about death, the medicalisation of death, and its segregation from the rest of society suggest that the characteristic approach to death is denial, at both the societal and the individual level (Zimmermann & Rodin, 2004). Awareness of death at a societal level appears to have fluctuated historically corresponding, in part, to the heightened public awareness of global threats to survival such as nuclear proliferation (Dodds & Lin, 1992; Gerber, 1990; Keefe, 1992), terrorism (Klingman, 2001), and the AIDS pandemic (Bivens *et al.*, 1994; Hintze *et al.,* 1994). More recently, a threat to public health like the Covid-19 pandemic, while having clearly adverse effects at societal and individual levels, has been found to be associated to increased appreciation of life, improved relationships, and better health (Cox *et al.*, 2021).

Several studies found a link between culture and death anxiety (e.g., Abdel-Khalek et al., 2009; Gire, 2014; Neimeyer et al., 2003) with the influence of cultural differences on death anxiety being emphasised in several studies (Byrant, 2003; Gire, 2014; Ma-Kellams & Blascovich, 2012; Moos & Schaefer, 1987; Schumaker et al., 1988). Cultural factors have been shown to influence which death attitudes individuals are more likely to adopt (Gire, 2014), and even to influence the nature of the attitudes themselves

(Depaola *et al.,* 2003). Alongside factors such as age, health, and spiritual beliefs, cultural factors influence the level to which individuals experience death anxiety (Burke *et al.*, 2010). This study found that older Caucasian adults displayed greater fears of the dying process, whereas African Americans were more fearful of the unknown, for the status of the body after death, and of being buried alive. These points contribute to our understanding of how adults are considerably diverse in the quality of their death concerns, pointing to the multiple factors that influence death attitudes.

1.3.3 Death Attitudes as Multidimensional

Following a period of focus on the deleterious aspects of death attitudes, researchers and clinicians have come to see death attitudes as multidimensional rather than the one or two-dimensional constructs, as they were understood to be in early research (Feifel 1956; 1959). Research has shown that death awareness in individuals with advanced disease may coexist with a strong will to live (Rodin & Zimmerman, 2008). This contrasts with viewing denial and acceptance of dying as dichotomous and reflective of distinct stages in the adaptation to death and dying (Kübler–Ross, 1975). These realisations led to death anxiety self-report questionnaires broadening their focus to include positive attitudes such as *death acceptance* (Neimeyer *et al.,* 2004). Multiple multidimensional scales were developed to capture particular dimensions of death attitudes, the most widely used being Collett and Lester's (four component) *Fear of Death Scale* (CLFOD; Lester, 1990), Hoelter's (eight component) *Multidimensional Fear of Death Scale* (MFODS; Hoelter, 1979), and Florian and Kravetz's (1983) *Fear of Personal Death Scale* (FPODS). These measures conceptualise death fear as both a conscious and an unconscious psychological process that influences our emotions, cognitions, and behaviour (Zhang *et al.*, 2019). These measures also encapsulate fears related to one's own death, the death of others, fear of the unknown after death, fear of obliteration, and fear of the dying process, which includes fear of a slow death and a painful death.

The *Death Attitudes Profile-Revised* (DAP-R; Wong *et al.*, 1994) is a multidimensional measure of *death acceptance* and *death avoidance* as well as *fear of death*. The DAP-R was developed from an existential perspective of death attitudes; viewing death acceptance and death fear as related to the pursuit of personal

meaning. In death fear, a person confronts death and the feelings of fear it evokes. However, in death avoidance, a person avoids thinking or talking about death in order to reduce death anxiety. Thus, death avoidance implicates some sort of defence mechanism that keeps death away from one's consciousness (Wong *et al.*, 1994). Death acceptance consists of two components: cognitive awareness of our own finitude and a positive (or at least a neutral) emotional reaction to this cognisance (Wong *et al.*, 1994). On this basis, it is argued that understanding the various, partly unconscious dimensions to death attitudes is vital to evaluating any intervention related to mortality awareness.

1.3.4 Age and Fear of Death

Exploring the relationship between age and fear of death is hoped to justify to the reader the current study’s focus of the working age adult population. While it has been widely studied, the nature of the relationship between age and fear of death appears to be complex and inadequately understood. Life-span psychologists have found that different age groups differ in their attitudes towards death, partially due to their varying levels of exposure to death (Levinson, 1977; Kastenbaum, 1979). There is debate regarding whether the specific features of death that arouse fearful anticipation differ for persons of various ages, e.g. younger and older adults. Thorson (2000) found that younger subjects feared such things as bodily decomposition, pain, helplessness, and isolation, whereas older subjects were more concerned about loss of control and the existence of an afterlife. In a literature review, Missler and colleagues (2012) found that older adults in care homes in the Netherlands had fears relating to the death of significant others, the dying process, and to ‘the unknown’. In summary, the nature of death attitudes has been shown to vary by age while a person’s age and what they value appears to indicate how they view death and which death attitudes they are more likely to experience.

While fear of death/dying is a multidimensional and individuated construct, numerous studies have found death anxiety to be relatively high amongst younger people, peaking in working age adults (from 18 to 65 years of age; Bengtson *et al.,* 1977; Keller *et al.*, 1984, Russac *et al.*, 2007) and reducing to its lowest point amongst older adults (e.g. Gesser *et al.*, 1987; Russac *et al.*, 2007). Erikson's (1963) stages of psychosocial

development proposed that around midlife (45 to 65 years of age) individuals become aware of their impending death and can either stagnate or develop generativity, or the desire to expand one's influence and commitment to family, society, and future generations. Supporting this, in developing the *Death Attitude Profile* (DAP; Gesser *et al.*, 1987), a curvilinear trend was found, showing that the elderly exhibited less fear of death/dying than the middle-aged but not the young. Higher levels of death anxiety in working age adults may relate to societal pressure to adhere to *extrinsic values* (e.g. power, status, wealth) rather than *intrinsic values* (e.g. family, contributing to society, being a good person). Therefore, as the working age adult demographic stand to benefit most from existential contemplation, this will inform the recruitment strategy of the current study.

1.4 Psychological Theories on Death Attitudes

Psychological theories offer diverse perspectives on death anxiety in the context of how individuals perceive, cope with, and make meaning of their mortality. Within early psychoanalytic theory, death awareness was typically understood as triggering unconscious defences such as repression or 'death denial' (Rodin & Zimmerman, 2008) and dissociation (Mitchell, 1993). This view emphasized human's defensive nature, implying that the motivation to face death awareness authentically succumbed to the need to avoid the pain associated with it (Becker, 1973; Langs, 2003). However, there was no empirical basis for this assertion. In more contemporary theory, the 'horizontal split' model of the mind, presumed to divide conscious from unconscious experience, is replaced by one of multiplicity, in which levels of awareness and diverse aspects of self–experience, including the death of the self, may shift and fluctuate (Rodin & Zimmerman, 2008).

Existential theory emphasises the inevitability of death and the human struggle to find meaning and purpose in life, considering inevitable death (Yalom, 2011). The dramatic alteration in the life-course and relational equilibrium caused by death may trigger a search for meaning (Frankl, 2014). In existential psychotherapy, Yalom (2011) draws a direct link from our awareness of death and how we handle the subsequent fear this causes in us to the possible development of psychopathology (Hoelterhoff, 2015). He

proposed that death anxiety; this primitive, pervasive, and deeply held dread of non-existence, whether explicit or disguised, is at the core of all other forms of psychological distress (Yalom, 2011). While this view appears to assert that our death determines that we are constantly distressed and fearful, in fact, accepting death as part of a meaningful life allows us to transcend these fears. The emphasis on meaning in how we relate to death influenced later theoretical framework such Seligman's *PERMA* model which found that engagement in meaningful activities and a sense of purpose can buffer against death anxiety and promote psychological resilience (Seligman, 2010). Contemporary empirical research provides support for death anxiety as a trans-diagnostic construct (Iverach *et al.,* 2014), underpinning ten different psychological problems (Menzies *et al.*, 2019), with previous research showing death anxiety to be consistently related to various aspects of general anxiety (Pollak, 1980).

Within the social psychology literature on mortality awareness, death has been mostly conceptualised as something fearful that we are inclined to deny to awareness. Based on the writings of Becker (1973), *Terror Management Theory* (TMT) has been the predominant theoretical approach behind research into the effects of mortality awareness (Greenberg, 2012). TMT proposes that our awareness of death conflicts with our innate drive to survive, resulting in the possibility of overpowering terror (Rosenblatt *et al.,* 1989). Humans manage this unconscious terror stemming from the awareness of mortality by maintaining cultural worldviews and self-esteem (see e.g., Greenberg *et al.*, 1997; Pyszczynski *et al.*, 2004, for reviews). TMT research explores how reminders of death influence behaviours, attitudes, and psychological processes, including the pursuit of meaning, self-esteem maintenance, and worldview defence (Arndt *et al.*, 1997; 2004; Greenberg *et al.*, 1992). TMT theory accounts for how mortality awareness influences a wide range of domains including intergroup relations (aggression towards outgroups in Vaes *et al.*, 2012), prejudice, identity formation, sun tanning (Cox *et al.*, 2009), and obsessive-compulsive handwashing (Menzies & Dar-Nimrod, 2017). The central thesis of TMT is that anxiety-provoking death-related cognitions will lead to self-protective actions, often taking the forms of prejudice and even aggression against those that threaten an individual's self-esteem and worldviews (Belmi & Pfeffer, 2016; Greenberg *et al.*, 2008; Stein & Cropanzano, 2011).

Within TMT research, two hypotheses have emerged: the *mortality salience* (MS) *hypothesis* and the *anxiety-buffer* (AB) *hypothesis* (Greenberg *et al.*, 1990). Both hypotheses propose that we deploy 'buffers' to deny our mortality and protect us from death anxiety (Greenberg *et al.*, 1986; Solomon *et al.,* 1991). The MS hypothesis posits that cultural worldviews and beliefs (e.g. nationality, religion, and group membership) act as buffers against death anxiety and that any reminders of death will cause a strengthening of our worldview. Research supporting this hypothesis has employed MS manipulations wherein participants are asked to engage intellectually and respond to open-ended questions concerning thoughts and feelings about death (e.g. Rosenblatt *et al.*, 1989). This research has shown that exposure to subtle reminders of death motivates defensiveness and adherence to salient social norms and values (Gailliot *et al.*, 2008). The AB hypothesis states that self-esteem, conceptualised as contributing to something bigger than oneself, is the primary buffer protecting us from death anxiety (Schimel *et al.,* 2007).

Regarding a critique of TMT, emphasising the anxiety-provoking aspects of mortality awareness paints an incomplete and pessimistic picture for a number of reasons. TMT research has acknowledged the possibility that mortality awareness could result in generous and compassionate behaviours (Hirschberger, 2010) and personal growth (Pyszczynski *et al.*, 2006). However, TMT interprets personal growth as merely defensive in its nature as opposed to as an expression of pursuing intrinsic, basic human needs (Crocker & Nuer, 2004; Ryan & Deci, 2004; Wong & Tomer, 2011). The adaptive and protective value of controlling anxiety about death has also been questioned (Leary, 2004) in that some anxiety over impending threats is necessary for survival (Arndt and Vess, 2008). Another issue is whether the effects observed in TMT research are driven by what death represents (e.g., uncertainty in McGregor *et al.*, 2001; meaningless in Heine *et al.*, 2006) as opposed to death *per se*.

1.4.1 Positive Effects of Mortality Awareness

In contrast to TMT, social psychology research has taken a different approach to mortality awareness, emphasising the individual's decision to pursue a path to meaning, reorientation, and growth as a result of 'death reflection'. Cozzolino's (2006) *dual existential systems model* was based upon exploring the social-

psychological outcomes of contemplating mortality. Drawing from evidence on the differentiation between abstract and specific cognitive processes (Marsolek, 1999), Cozzolino (2006) proposed a model of two existential systems. The *abstract existential system* is activated by abstract thoughts about death and the *specific existential system* is activated by specific and individuated thoughts (i.e., focusing on the circumstances surrounding death: details of how, when, and where). These two systems are mutually exclusive of one another as psychological constructs and bring about different cognitive, motivational, and behavioural outcomes, with the latter system providing the individual with the best chance of survival when life in threatened (Cozzolino, 2006).

TMT operates under the 'abstract existential system' (Cozzolino, 2006), activated by abstract MS manipulations. Distinct from this, life-threatening situations have been shown to make individuals acutely aware of how and when they may die, for instance in near-death experiences (NDEs) (Blackie & Cozzolino, 2011; Ring, 1984), which activate the specific existential system (Cozzolino, 2006). While the inevitability of death may create fear and distress, individuals can also cognitively process positive aspects of their own mortality. More specific, personalised, and intense forms of creating an awareness of death are likely to activate growth-oriented motivational states and self-regulatory processes (Cozzolino & Blackie, 2013). In support of this, the *transactional model of stress* (Lazarus & Folkman, 1987) and *socioemotional selectivity theory* (Carstensen *et al.*, 1999) both propose that individuals can derive positive cognitions from threatening situations.

Based on the dual-existential-systems model, Cozzolino et al (2004) were one the first to explore the potential benefits of reflection on mortality under laboratory conditions. Cozzolino (2004) found that death reflection induced more intrinsic behaviour and intrinsic values in participants who would otherwise display greedy behaviour and endorse extrinsic values. Subsequent studies identified positive, growth-orientated aspects of death reflection and showed their association with prosocial behaviour (Cozzolino, 2006; Lykins *et al.*, 2007; Grant & Wade-Benzoni, 2009; Vail *et al.*, 2012; Yuan *et al.*, 2019). Undertaking the DRM, when compared to a control condition, was found to facilitate outcomes indicative of identity integration (Blackie *et al.*, 2016). Participants in the 'death reflection' condition were more likely to consider positive and negative

life experiences as equally important in shaping their current identity, more likely to regard self-serving values and other-serving values as equally important life principles and were motivated to pursue growth-oriented and security-oriented needs. Given that identity integration is associated with higher well-being (Benet-Martinez & Haritatos, 2005), the findings have implications for understanding the psychological benefits of existential contemplation.

1.4.3 Death Anxiety as a Separate Clinical Construct to General Anxiety

There are number of reasons for why it is plausible to consider death anxiety as a distinct clinical construct rather than considering it as part of generalised anxiety. Mortality awareness and fear of death have been part of the human condition throughout recorded history (Eshbaugh & Henninger, 2013; Furer & Walker, 2008). Human beings are, "forever shadowed by the knowledge that we will grow, blossom, and inevitably, diminish and die" (Yalom, 2008, p. 1). In light of this knowledge, death has the power to evoke fears of powerlessness, separation, loss of control, and meaninglessness (Noyes, Stuart, Longley, Langbehn, & Happel, 2002; Stolorow, 1979; Yalom, 2008). These fears have been grouped under the construct of 'death anxiety'. Death anxiety is closely related to the core fear related to the annihilation of one's existence (Greenberg, Pyszczynski, Solomon, Simon, & Breus, 1994) and stems from fundamental limbic structures that are ancient, hardwired, and adaptive to survival (Panksepp, 1998). Death anxiety is likely a universal human phenomenon given the universal cognitive structures that permit future anticipation and prediction (Becker, 1973; Lonetto & Templer, 1986; Neimeyer, 1994; Panksepp, 1998; Yalom, 1980). Death anxiety tends to be largely denied or repressed, which may be understood as adaptive in so far as it reduces the possibility of paralyzing fear and terror that would impede survival (e.g., Becker, 1973; Yalom, 1980).

Existentialist literature proposes that concerns about death manifest both overtly and covertly in all aspects of our mental life. Yalom (2008) argued that concerns about death underpin every kind of psychopathology. This has been supported by Iverach et al (2014) who found that many anxiety disorders and psychological problems may be underpinned by death anxiety. Menzies' research has highlighted the role of death anxiety in a range of psychological presentations such as obsessive-compulsive disorder

(Menzies, 2024), social anxiety (Menzies, 2022), disordered eating (Forrester et al., 2024), and borderline personality disorder (Liu, Menzies and Menzies, 2023). In light of this evidence, death anxiety may be considered to be a basic fear underlying the development and maintenance of generalised anxiety. More specifically, death anxiety was found to underpin predominantly somatic manifestations of generalised anxiety (Dursun et al., 2022). Treatment of trans-diagnostic constructs, such as death anxiety, may increase treatment efficacy across a range of disorders, improving outcomes and preventing the development of comorbid disorders (Abbott & Rapee, 2004; Dudley, Kuyken, & Padesky, 2011; Egan et al., 2012). Understood clinically, generalised anxiety may be underpinned by a fear of a loss of meaning and, in turn, an unconscious fear of death as the ultimate challenge to meaning. Treating generalised anxiety may help individuals at the surface level without addressing what is underneath the surface, driving the anxiety.

1.4.4. The Conceptual Value of Existential Psychology for Clinical Psychology Research

Rachel Menzies' pioneering research highlights the integration of existential psychology into clinical psychology research and practice, particularly focusing on *death anxiety* as a core factor in many mental health problems. Her research has helped to established death anxiety as a construct within clinical research, both theoretically through literature reviews and psychometrically through her work on developing and validating the death anxiety beliefs and behaviours scale (Menzies *et al.*, 2022). Menzies argues that standard treatments often fail to address these existential fears directly, which may contribute to the "revolving door" phenomenon, i.e. a frequent pattern of re-referrals or re-admissions to mental health services for apparently distinct mental health problems. Menzies advocates for cognitive-behavioural therapy (CBT) techniques that directly target death anxiety, such as exposure therapy (e.g. visiting cemeteries) and cognitive restructuring of death-related beliefs. She argues that these approaches may be applied to improve long-term outcomes by addressing the root existential concerns behind common mental health problems, thus reducing the likelihood of relapse or the emergence of new presentations. Her contributions underscore the conceptual value of existential psychology in better understanding and treating

mental health problems, advancing the notion that confronting death anxiety may substantially improve the effective of clinical interventions.

The current research builds on Menzies' research in highlighting the conceptual value of existential psychology, as well as social psychology, for understanding the relationship between death anxiety, wellbeing, depression, anxiety, and stress. Firstly, the current research also seeks to extend Menzies' research and address some of the uncertainties identified therein. For instance, Menzies' research focuses on interventions for individuals in clinical and non-clinical populations with severe or disabling psychological distress (e.g. for those with terminal illness). The current study seeks to explore the effectiveness of death anxiety interventions for populations that have not been studied. This was done by involving participants from a non-clinical, general population sample with at most mild to moderate symptoms of depression, anxiety, and stress.

Secondly, despite numerous studies highlighting the multidimensional nature of death attitudes (ref, ref), Menzies' research focuses solely on death anxiety. In so far as death anxiety may the most compelling and urgent of all of the death attitudes, this focus serves her research goals in exploring the presence of death anxiety as a trans-diagnostic construct underpinning other mental health presentations. However, little is understood about how death attitudes, outside of death anxiety, contribute to mortality awareness as a source of meaning, personal growth, and mental wellbeing (Spitzenstätter & Schnell, 2022; Zhao *et al.*, 2022). The current study aims to address this by exploring the potential psychological benefits of death reflection on a number of outcomes including death attitudes. Instead of focusing on death anxiety, a mixed methods strategy will be used to collect data on participants' death attitudes more broadly, including, for example, death avoidance, approach acceptance, escape acceptance, etc.

Thirdly, little is known on the basis of existing research, including Menzies' research, about the sustainability of treatment effects for death anxiety interventions (Menzies *et al.*, 2018). Thus, while there is evidence to assert that interventions for death anxiety may reduce the likelihood of relapse or the emergence of new presentations, long-term evidence is needed to support this assertion. Delivering an extended version of the DRM over a four-week period is intended to address this gap in research by exploring the long-term

sustainability of effects, principally wellbeing and fear of death. Multiple studies have found evidence that self-esteem, source of meaning in life, and relationships may protect against death anxiety (Menzies & Menzies, 2024; Huang et al., 2022; Maffly-Kipp *et al.*, 2023). The qualitative aspect of the current study explores what elements either exposed individuals from or protected individuals from death anxiety.

1.5 The Death Reflection Manipulation

Cozzolino and colleagues' (2004) study first employed the *Death Reflection Manipulation* (DRM). A *death scenario* was used helped participants to imagine, in detail, their own death in a specific, concrete, and individuated manner. These conditions are intended to activate the specific existential system. The *death scenario* (Appendix A) requires participants to imagine themselves in the midst of an unescapable fire while on the twentieth floor of a friend's apartment building in the early hours of the morning. Four questions (see *Design* below) were specifically designed to encourage participants to contemplate the actuality of their own death, their thoughts and feelings during the final moments of life, and how they would regard the life they had lived up to that moment.

The death scenario and subsequent questions were designed based on research involving first-person accounts of *near-death experiences* (NDEs) (Ring & Valarino, 2006). People often react to traumatic events and the subsequent death awareness with life and priority re-appraisal, developing themselves, and putting more effort into relationships (Tedeschi & Calhoun, 1996). Reactions to NDEs commonly include increased appreciation for life, greater desire to seek out meaning, and a lack of concern for extrinsic motivators, such as impressing others (Ring, 1984). Central to NDE accounts is the shattering of what Parkes (1988) termed the "assumptive world"; the assumptions, or beliefs, that ground, secure, and orient people, that give a sense of reality, meaning, or purpose to life (Beder, 2004). In NDEs, it is crucially important that the events are sufficiently challenging to the assumptive world to set in motion the cognitive processing necessary for growth. Only then can individuals hope to benefit from the benign outcomes that have been associated with post-traumatic growth following NDEs. These include increased compassion (Tedeschi *et al.*, 1998),

favourable attitudinal change (Ring, 1984; Ring & Valarino, 2006), and forming more authentic versions of the self that are in line with intrinsic rather than extrinsic values (e.g. wealth, power, status in Cozzolino, 2006; Lindstrom *et al.*, 2013; Surbhi & Bruce, 2015). Cozzolino (2006) argued that NDEs and post-traumatic growth that may follow explains why individuals of any age may respond to increased death awareness with prosocial behaviours.

Cozzolino and colleagues' (2004) content analysis of the responses to the questions asked of participants in response to the DRM can give us an indication of what themes we may expect to emerge from the current study's DRM-based intervention. Examples of themes include authenticity (i.e. 'the real me'), self-awareness, personal growth, "embracing reality", the experience of closeness/intimacy within relationships and greater alignment with personal needs/values (Cozzolino *et al.*, 2004). Content analysis also demonstrated that the manipulation elicited a strong emotional reaction (negative affect), such as panic, fear and sadness. There was also an indication that participants had reflected on their values and expressed gratitude for aspects of their life that have the most meaning. Physical responses to the manipulation (increased heart rate, tears, *etc*.) were also recorded. There was also evidence to show that participants exposed to the DRM responded with a significantly higher proportion of religious references and reflections on life goals than participants that were in the control condition (participants in the control condition answered the questions above in relation to a scenario that was not death-related).

1.5.1 Modification of the Death Reflection Manipulation

Whilst DRM has been shown by numerous experimental studies to facilitate a variety of individual and relational benefits (Spitzenstätter & Schnell, 2022; Blackie *et al.*, 2016), both the causal mechanisms behind the effects and the longevity of these effects are uncertain. Previous studies had neither investigated whether death reflection was directly associated with changes in wellbeing nor had previous studies investigated whether and how sustainable these positive outcomes were. Reviews have highlighted the need to ascertain whether addressing death anxiety can produce long-term improvement in symptoms and prevent future disorders (Menzies & Menzies, 2020). The current study aims to address this gap in research by both

extending the DRM intervention over a four-week period and eliciting participants' experiences of the DRM-based intervention. We envision that the data gathered via qualitative data collection methods (i.e. semi-structured interviews) may indicate how death reflection differs from other interventions that involve death-reframing (e.g. Exposure Therapy, Cognitive Behavioural Therapy, Acceptance and Commitment Therapy). Interview response data may also help the researcher to understand procedural differences in how participants engage in the intervention which, in itself, may inform future research. The current research is hoped to benefit a diverse sample of individuals with a range of different attitudes and cognitions about mortality and death. It is hoped that, by increasing mortality awareness through the death reflection, death can be approached more holistically and reframed as a source of meaning, personal growth, and transformation. In so far as death anxiety is a trans-diagnostic construct (Iverach *et al.*, 2014), our findings may contribute to the development of novel approaches for various psychological problems. For instance, a pathological fear of death has been found to be related to somatic symptom disorders, such as hypochondriasis and health anxiety (Furer and Walker, 2008; Furer *et al.*, 2007; Starcevic, 2005).

1.6 Theoretical Background for Qualitative Analysis

Key to eliciting participants' experience of the DRM-based intervention was choosing a suitable qualitative methodology. *Interpretative phenomenological analysis* (IPA) (Smith & Eatough, 2006) was used as a qualitative methodology for exploring participants' experiences of death reflection. The philosophical underpinnings of IPA are in hermeneutics and phenomenology. The 'P' of IPA refers to *phenomenology* which is concerned with the study of structures of consciousness as experienced from the first-person point of view (Smith, 2003). The 'I' of IPA refers to *interpretation*. Interpretation in IPA is based in *hermeneutics*, the study of interpretation, which plays a role in a number of disciplines whose subject matter demands interpretative approaches, characteristically, because the disciplinary subject matter concerns the meaning of human intentions, beliefs, and actions (George, 2021).

IPA is one of several allied phenomenological methodologies used in research related to clinical psychology and its central concern is the subjective conscious experiences of individuals. This is in contrast

to grounded theory analysis, which gives greater weight to social structures and processes than individualised "insider perspective" accounts in IPA (Eatough & Smith, 2008). IPA acknowledges the impossibility of directly accessing an individual's life world as there is no clear and unmediated window into that life. Rather, it is concerned with understanding the experiences of the 'person in context' by prioritising participants' experiences and their interpretations of them (Clarke & Braun, 2013).

Investigating how events are experienced and given meaning requires interpretative activity on the part of the participant and the researcher (Eatough & Smith, 2008). This *double hermeneutic* is described as a dual process in which "the participant is trying to make sense of their world; the researcher is trying to make sense of the participant's trying to make sense of their world" (Smith & Osborn, 2003, p. 51). IPA was judged to be a suitable methodology for exploring participants' experiences of death reflection having been used to examine a wide range of similar psychological constructs such as European social identity (Chryssochoou, 2000), affective aspects of travel choice (Mann & Abraham, 2006), awareness in Alzheimer's disease (Clare, 2003), and identity change and life transitions (Smith, 1994).

Based on the philosophical background of death reflection and methods of analysis used in this study to investigate its effectiveness, this study employed an *existential phenomenological* perspective to examine participants' individual lived experiences of the death reflection manipulation. This perspective proposes that human beings are intrinsically embedded in the world and that we come to make sense of ourselves and others through our interactions with the world. The qualitative aspect of this study aimed to understand participants' subjective experiences of the processes involved in death reflection and how these experiences were used to make sense of the perceived changes and outcomes during and after the study. In collecting and analysing the data, the researcher was careful to facilitate a sensitive space for participants' interpretations of their own experiences to emerge.

1.7 Empirical Research on the Effects of Mortality Awareness

Understanding the historical developments in mortality awareness research helps to locate more recent studies and the current study in context. Attitudes toward death became a topic of interest within psychological research in the late 1950s with Feifel's (1956, 1959) research on geriatric and mentally ill populations. This research formed part of the wider *Death Awareness Movement*, which proposed the way we conceptualise and anticipate our future death influences the way we live and experience and experience the present (Feifel, 1974). Early studies on death attitudes tended to employ *Thematic Apperception Test Stories* and simple face-valid questionnaires which constituted relatively unsophisticated methodologies for examining death attitudes. The volume of research increased by the mid-1960s corresponding with the rising popular interest in the topic of death linked to media of coverage of global events such as the Vietnam War. There was a marked increase in publications on the topic of death in the mid-1970s including the development of the first widely available instruments designed for assessing fear of death (Collett & Lester, 1969), threat of death (Krieger *et al.,* 1975), and death anxiety (Templer, 1970). In the late 1970s review articles managed to integrate (Erlemeier, 1972; Pollak, 1980) and give direction (Kastenbaum & Costa, 1977) to this growing body of research. This led to an improvement in the methodological quality of research in this field, from its relatively unsophisticated origins (Neimeyer, 1994) to understanding mortality awareness in greater depth.

1.7.1 Previous Systematic Reviews on Interventions for Death Anxiety

After establishing the multidimensional nature of death attitudes, we turn our attention to death anxiety or death fear (used interchangeably in the literature), which is the most widely studied of the death attitudes. Although death anxiety has been subject to research since the 1950s, the literature examining death anxiety has fairly been described as inconsistent and contradictory (Kastenbaum, 1992; Maglio & Robinson, 1994). Among the few literature reviews or systematic reviews on psychological interventions for death anxiety, Maglio and Robinson's (1994) meta-analysis investigated the effects of death education programs in 62 studies for reducing death anxiety. The studies were highly heterogenous and varied in their methodological

rigour (e.g. non-randomised designs, studies that only measured death anxiety after and not before the intervention).

It was found that death education was not an effective means of lowering death anxiety (Maglio & Robinson, 1994). However, a number of factors may challenge the strength of this conclusion. Firstly, given that death attitudes change very slowly (Mueller, 1975) the length of death education interventions may not have been of sufficient length to reduce death anxiety. Secondly, while didactic death education interventions were found to produce significantly greater reductions in death anxiety than experiential interventions were, increased anxiety may be due to a decrease in the pervasive denial often thought to be an integral part of the individual's personality structure (Combs, 1981). Maglio and Robinson (1994) called for more detailed research to examine the various elements of death education that lead to attitudinal change.

Two systematic reviews (Grossman *et al.* 2018; Menzies *et al.* 2018) have been conducted on interventions for death anxiety. Both reviews have focused on death anxiety in clinical (terminally ill) populations. Grossman et al (2018) focused on the effects of psychotherapeutic interventions "targeting death anxiety or related existential aspects of distress in a systematic fashion" in adult patients with advanced (i.e. incurable) cancer. This review included nine studies and only two of those studies specifically measured death anxiety (rather than, for example, 'desire for hastened death', or general distress). While studies assessed a range of outcomes relevant to death anxiety, only one study employed a pre-existing and validated measure of death anxiety. This finding reflects Fortner and Neimeyer's earlier (1999) review in recommending that psychometric measures for death anxiety be of higher quality. Overall, studies varied in their methodological rigour. The interventions and outcome measures used to evaluate them were of particular relevance to terminally ill patients and, therefore, may be limited in their generalisability to a non-clinical population. Thus, although the review concluded that interventions such as *meaning-centred therapy* or *dignity therapy* appear to be beneficial to wellbeing overall, how effectiveness these interventions can treat death anxiety was unclear. While this review developed our understanding of some of the factors associated with death anxiety, the causal mechanisms or direction of effects of these factors were left unaccounted for.

Grossman et al (2018) commented on the ethical concerns inherent in measuring and, thereby, drawing attention to death anxiety in the terminally ill and causing harm. The authors also found that the majority of studies were published in the five years preceding the review (between 2013 and 2018), indicating that death anxiety has recently become more widely recognised in research. In light of this potential ethical issue, it was recommended for future studies to include qualitative methods to investigate interventions for death anxiety and to use more specific outcome measures, chosen for the aim of the intervention. These recommendations informed the current review's search to include interventions for both clinical and non-clinical populations (in which it may be more feasible to measure death anxiety than terminally ill populations). The current review also followed earlier recommendations and took advantage of the greater amount of research on death anxiety by only including interventions that employed validated death anxiety measures.

Menzies et al. (2018) conducted a systematic review and meta-analysis of randomised controlled trials (RCTs) for effects of psychosocial interventions on death anxiety. This review included studies for clinical and non-clinical samples. Results from 15 RCTs suggested that psychosocial treatments produced significant reductions in death anxiety, with a small to medium effect size (g = .45). Therapy type was a significant moderator of treatment efficacy (g = -1.39). Cognitive Behaviour Therapy was found to be particularly efficacious, producing significant reductions in death anxiety relative to controls (g = 1.7), whereas other therapies did not (g = .20). However, further research is needed before drawing strong conclusions about the efficacy of these treatments for which only a single study featured in this meta-analysis.

In the studies included in Menzies' review, the mechanisms of change behind the efficacy of CBT and exposure therapy for death anxiety were not accounted for. This, added to the paucity of qualitative and mixed methods research, limits our ability to understand and replicate these effects. In studies using CBT or exposure therapy for death anxiety, the treatment approach is generally similar to that used for other anxiety disorders such as panic disorder, obsessive compulsive disorder, and health anxiety disorder (Hiebert *et al.*, 2005). While there is diagnostic overlap in these distinct diagnoses, the similarity of approach fails to account for the uniqueness or the trans-diagnostic nature of death anxiety, underpinning a multitude of psychological

problems (Iverach *et al.*, 2014; Menzies *et al.*, 2019). Indeed, it is conceivable that the clinical efficacy of exposure for anxiety disorders may be partly due to providing individuals with tools to manage the death-related fears that lie covertly underneath their presenting anxiety. The small number of studies that met inclusion criteria in Menzies' review were generally found to be of low methodological quality due to the heterogeneity of studies, the variance in death anxiety measures used, the variability of control conditions, and the diverse treatment modalities (e.g., life review, logotherapy). This limited the strength of conclusions that could be drawn.

These two reviews highlighted how death anxiety became more widely recognised in research in the five years preceding 2018. The current review was conducted 2023, five years after the 2018 reviews. There was a rationale for conducting another systematic review, similar to that of Menzies et al. (2018), but five years later to capture the studies published on interventions for death anxiety. Thus, studies included in the current review had the opportunity to learn from the 2018 reviews and their recommendations. Out of the thirteen studies included in the present review, eight studies were published in the preceding five years.

Building on Menzies et al. (2018), the current review included studies with interventions for death anxiety in both clinical and non-clinical populations published between 1983 and 2023. This was intended to capture the greatest number of studies in a relatively underdeveloped area of research. Reviewing studies with clinical and non-clinical populations allowed the author to assess how the death anxiety interventions were carried out which informed the design of the current study. Given the variability in methodological rigour in previous studies, the current review included studies with either a case control, cross-sectional, or cohort (longitudinal) design.

Findings from the current systematic review informed the design and methodologies for the intervention in the current study. While the current review found that interventions varied in their effectiveness at treating death anxiety, in contrast to Maglio and Robinson (1994), experiential and meaning-centred interventions were effective in a number of settings. This finding was promising as there was certainly theoretically and practically overlap between these interventions and death reflection. Studies used interventions that were mostly evaluated using self-report questionnaires that were quantitatively analysed at

pre and post. Analysing change between two time points failed to investigate whether changes in death anxiety were sustainable. Lack of qualitative analysis also prevented individual accounts of changes in death anxiety. On this basis, a mixed methods design was chosen.

1.8 Chapter Summary and Rationale for Systematic Literature Review

In reviewing the literature related to mortality awareness, this chapter has found evidence for the great personal and societal significance of death in the prospective and retrospective meanings we attach to it and the implications of these meanings for our wellbeing. Furthermore, the nature and effects of mortality awareness has been found to be both complex, culturally diverse, historically variable, and highly contested within psychological research and related fields of research. In so far as the focus of predominant theories has failed to capture them, the positive effects of death awareness constitute a gap in the research and form the bedrock of the rationale for the current study on death reflection. Consequently, this systematic literature review will aim to address this gap in research by examining what existing quantitative evidence there is in support of psychological interventions for death anxiety and in working age adults. The current systematic literature review is intended to provide a foundation for the connected mixed methods study that follows. It is hoped to build on previous studies in social psychology regarding the benefits of death reflection, a novel intervention that may be an important direction for future research and practice in clinical psychology.

Systematic Literature Review Method

1.9 Overview

A systematic review of scientific literature was conducted to identify intervention studies using psychological interventions for death anxiety in working age adults. The review question was *What Psychological Interventions Have Been Used to Treat Death Anxiety in Working Age Adults?* Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) guidelines were used to create a review protocol. The International Prospective Register of Systematic Reviews (PROSPERO) was searched to confirm that previous reviews had not addressed the research question.

*1.10 **Search Strategy***

The search was designed to identify intervention studies that included death anxiety as either as a primary or secondary outcome measure. A systematic database search was performed using APA PsycArticles, APA PsycInfo, CINAHL Ultimate, MEDLINE Ultimate, and E-Journals, all of which were accessed through EBSCO host. The following Boolean search was carried out on all databases and websites: (psychological intervention* OR treatment* OR psychotherap* OR psychosocial OR behavio#ral intervention*) AND (death anxiety OR death attitudes OR fear of death OR fear of dying OR death readiness) AND (adults OR working age adult* OR under 65*). The search was restricted to peer-reviewed studies from academic journals published between '1983' and '2023'. Based on existing literature and theoretical reviews, it was highly unlikely that methodologically rigorous studies were conducted before this time period. Only studies in the English language or studies that were capable of being translated into English were included.

*1.11 **Eligibility Criteria***

Based on criteria from previously conducted systematic and literature reviews on death anxiety (Fortner & Neimeyer, 1999; Menzies *et al.*, 2018; Grossman *et al.*, 2018), this review included studies if they met the following criteria:

A) Quantitative in methodology

B) Included adult participants (18 years old and above)

C) Used a psychological intervention

D) Used psychometrically valid death anxiety/death-related measures

E) Used either a case control, cross-sectional, or cohort (longitudinal) design

F) Published between 1983 and 2023

Studies were excluded if they met the following criteria:

A) Unable to be translated into English

B) Measured the death anxiety of relatives/caregivers/practitioners and not participants themselves (due to the non-generalisability of these findings)

C) Did not collect psychometrically valid or any death anxiety/death-related psychometric measures

Unpublished studies

D) Feasibility studies or secondary data analyses

*1.12 **Screening Procedure***

See Figure 1 (below) for a flow diagram of the search and screening process. The search outlined in the search strategy above produced 4,507 studies and a visual search revealed many studies did not meet inclusion criteria. Thus, it was decided to refine the search terms to: ("death anxiety" OR death anxiety) AND (psycholog* therap* OR intervention* or treatment* OT psychosocial OR CBT) AND (working age adult* OR adult*) produced 761 studies. There were 752 studies remaining after duplicates were removed. At this point it was decided the search terms could not be refined any further without possible excluding suitable studies. These 752 articles were then filtered by subject age ('adulthood (18 yrs & older)') down to 144 studies. Next, they were filtered by methodology ('Empirical study') down to 130 studies. Title and abstract screening were conducted on 130 studies which excluded unsuitable studies to leave 65 studies remaining. Then 65 full text studies were assessed for eligibility against the inclusion and exclusion criteria. There were 29 studies excluded due to being feasibility studies/secondary data analyses. There were 15 studies excluded due to using no or no valid death anxiety/death-related measures. There were 11 studies excluded due to measuring the death anxiety of relatives/carers/practitioners as opposed to the participants themselves. This left 10 suitable studies remaining. Hand-searching of death-related journals added 3 additional studies from *Death Studies (2)*, *Omega (1)*, and Google Scholar (0). The full text of these studies was assessed for eligibility against the inclusion and exclusion criteria and all 3 were found to be suitable. Overall, a total of 13 studies were included in the review.

*1.13 **Quality Assessment***

The remaining 13 studies were assessed for quality using the Critical Appraisal Skills Programme (CASP, 2018) *Case Control Study Tool* (CCST). The *CCST* was designed as a pedagogic instrument and therefore does not employ a scoring system. The *CCST* includes three domains split into eleven questions: clarity of a study's focus, design and methodology, recruitment, measurement of exposure, equal treatment of groups, confounders, size and precision of treatment effect, whether results are compelling and can be applied locally, and coherence of results with existing evidence. Responses to these questions indicate a global quality rating of strong/moderate/weak. The researcher read the *CCST* instructional manual which promotes standardisation between scoring, helping to eliminate bias. The *CCST* was chosen as it is appropriate to assess the studies that are heterogeneous in quantitative design, for example when studies include both case control designs as well as non-controlled designs (CASP, 2018). The researcher extracted study characteristics using pre-defined categories (see *Table 1* below). The categories were: Design, recruitment strategy, sample size and sample type, intervention, measures, and outcome. Statistical information (confidence intervals, *p* values and effect sizes) has been reported in the results where possible.

*1.14 **Risk of Bias Assessment***

Using the CASP tool, all studies included in the review were assessed for selection bias, performance bias, detection bias, attrition bias, and confounding factors. There was found to be a risk of selection bias in multiple studies where participants were either drawn from a specific clinic (Davazdahemami *et al.,* 2020), treatment centre (Menzies et al., 2021; Breitbart et al., 2010), or support group (Vaughan & Kinnier, 1996). Where participants were draw from a homogenous demographic, this limited the generalisability of findings to the general population (Naghipoor et al., 2021; Dilmaghani *et al.,* 2022). Several studies used non-randomised methods for selecting and allocating participants to groups (Kuru Alıcı *et al.,* 2018; Hajiazizi *et al.,* 2017). There was also potential bias where the sample was restricted to a specific population, for instance practicing mindfulness (Anālayo *et al.,* 2022), or where volunteers interested in death education may may have introduced bias affecting response validity (Hayslip *et al.,* 1994). Study samples were mostly recruited

from the general population. The samples in just 2 studies were recruited from clinical samples (Menzies *et al.,* 2021; Breitbart *et al.,* 2010), limiting the generalisability of findings from these two studies to the general population. Most samples were composed partly of older adults that were convenience sampled from nursing homes or community social organisations (e.g. Kuru Alici *et al.,* 2018; Naghipoor *et al.,* 2021; Moghadam *et al.,* 2020).

There was found to be a risk of performance bias due to variability in how interventions were delivered (Anālayo *et al.,* 2022; Moghadam *et al.,* 2020). Treatment delivery could vary which impacted results, especially in nonrandomized studies (Kuru Alıcı *et al.,* 2018). This was likely to, in turn, affect participants' levels of engagement. Where assessors were known to the participants, there was the possibility of experimenter influence and participant bias (Kuru Alici *et al.,* 2018; Naghipoor *et al.,* 2021; Moghadam *et al.,* 2020). Due to randomisation, RCTs were less vulnerable to these specific biases. The effect of a range of interventions for death anxiety seems to have been studied intensely using older adult nursing home populations in Iran and Turkey. This may have challenged the reliability of findings as participants' familiarity with interventions may have undermined their being blinded as to whether they were allocated to treatment or control groups. In certain studies where interventions were delivered by multiple therapists, there was risk of this affecting treatment fidelity (Davazdahemami *et al.,* 2020). Group dynamics may have also affected participants' engagement levels (Breitbart *et al.,* 2010; Dilmaghani *et al.,* 2022). There was less of a risk of performance bias relevant in studies where the intervention's delivery was less likely to vary widely (Naghipoor *et al.,* 2021) or where a given intervention (e.g. death education) was standardized (Hayslip *et al.,* 1994; Abengozar *et al.,* 1999).

There was a risk of detection bias in certain non-randomised studies where assessors were aware of treatment allocation and participant demographic information (Davazdahemami *et al.,* 2020; Anālayo *et al.,* 2022; Dilmaghani *et al.,* 2022; Moghadam *et al.,* 2020; Breitbart *et al.,* 2010). Assessors' awareness of participants' involvement in the intervention (Hayslip *et al.,* 1994) may have also influenced evaluation outcomes. Certain outcomes were particularly at risk of being influenced by detection bias, such as where those assessing suicide ideation knew participants' medical backgrounds (Naghipoor *et al.,* 2021). Certain

outcomes were less likely to be influenced by detection bias due to outcomes being assessed through standardised methods (Kuru Alıcı *et al.,* 2018; Abengozar *et al.,* 1999). Other outcomes were less vulnerable to detection bias due to the nature of the outcomes (Hajiazizi *et al.,* 2017; Vaughan & Kinnier, 1996). For example, the detection of physiological effects (Vaughan & Kinnier, 1996) was less likely to be influenced by bias. Participant awareness of treatment and treatment outcomes (bodily scanning behaviours in Menzies *et al.,* 2021) created potential bias.

Regarding attrition bias, high dropout rates in certain studies may have skewed results, especially when the number of dropouts differed significantly from the number of completers (Anālayo *et al.,* 2022; Davazdahemami *et al.,* 2020). In certain studies, there was notable attrition bias, especially where participants with certain demographics drop out more frequently (Vaughan & Kinnier, 1996). In other studies, those who dropped out were either less responsive to the intervention (Breitbart *et al.,* 2010; Naghipoor *et al.,* 2021) or had specific attitudes that were not subject to measurement due to them disengaging (Abengozar *et al.,* 1999). This attrition bias may have skewed the data on intervention effectiveness. There was potential attrition bias where participants who did not benefit left the study, affecting conclusions (Moghadam *et al.,* 2020). In another study, it was likely that participants who disengaged differed from those who remained in the study (Kuru Alıcı *et al.,* 2018). The combination of health conditions and elderly participants impacted participant retention may have led to biased findings (Hajiazizi *et al.,* 2017; Dilmaghani *et al.,* 2022).

In multiple studies there was a risk that cofounding factors created bias. Certain studies included participants with varying health statuses including comorbid conditions which, alongside the unaccounted-for baseline anxiety levels, may have cofounded results (Vaughan & Kinnier, 1996; Davazdahemami *et al.,* 2020; Menzies *et al.,* 2021). In one study, patient demographics and cancer stage may have confounded therapy effectiveness (Breitbart *et al.,* 2010). Previous experience of mindfulness practice (Anālayo *et al.,* 2022) or mental health treatment (Moghadam *et al.,* 2020) may have influenced participants' responses to the intervention. The impact of varying coping mechanisms among participants may also have confounded results (Dilmaghani *et al.,* 2022). Social isolation (Hajiazizi *et al.,* 2017) and differences in social support (Naghipoor *et al.,* 2021) could have significantly impacted results. Cultural background and life experiences (Abengozar

et al., 1999), including previous experiences with death (Hayslip Jr *et al.,* 1994), may have significantly influenced attitudes toward death.

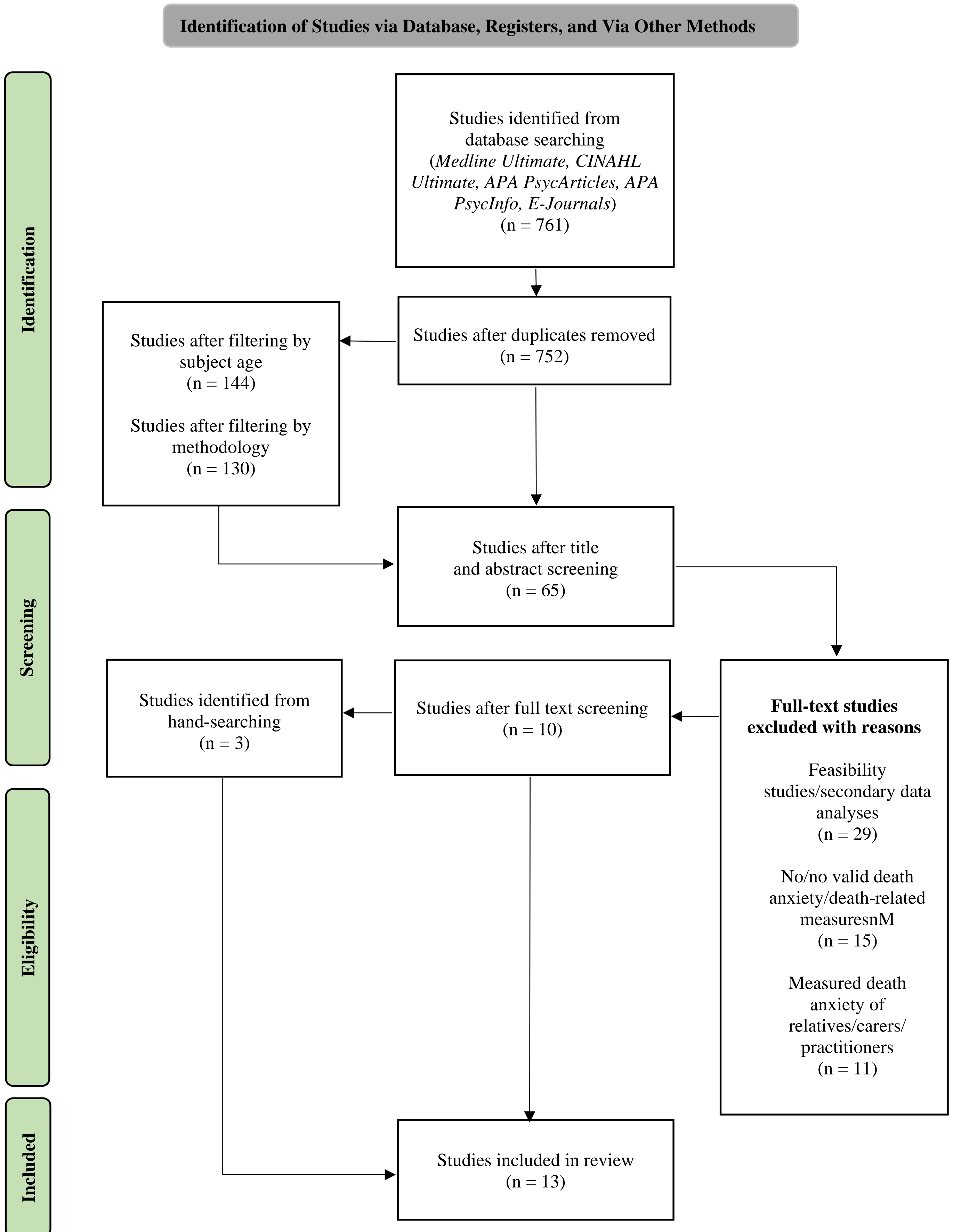
As acknowledged by several studies (Kuru Alici *et al.,* 2018; Moghadam *et al.,* 2020), older adults in rural Turkey and Tehran are more likely to be religious than individuals in most Western societies. This may challenge the generalisability of findings as religious belief and religiosity (i.e. devotion, holiness, piousness) are negatively correlated with death anxiety (Jong, 2021). The scarcity of demographic data reported by these studies limits our ability to control for the effect of religion on death anxiety, either at baseline or post-intervention. Studies mostly failed to report demographic data which may indicate that it was not collected. Hayslip et al. (1994), who deliberately recruited a sample with a high likelihood of experiencing death, failed to statistically control for the impact of occupational choice on death fear which would have been necessary to more accurately assess the impact of death education on death anxiety. Overall, these biases highlight challenges in drawing ultimate conclusions across these studies.

1.15 ***Statistical Methods***

A meta-analysis was not conducted due to the poor quality of data reporting. The minimum requirements of mean values and standard deviations were not available for the whole group of studies.

1.16 **Figure 1**

Flow Diagram of Search, Screening, and Inclusion/Exclusion Process



1.17 **Table 1**

Characteristics and Outcomes of Studies in Systematic Literature Review

Authors, Year, Country	*Design*	*Recruitment*	*Sample*	*Intervention*	*Measures*	*Outcomes*
Davazdahemami *et al.* (2020) (Iran)	Single case design.	Recruited through referrals from psychiatrist and clinical psychologist at Hospital. Inclusion criteria: 18-50 years, diagnosis of OCD.	*n*=8 (all Iranian females) Age range=28-45.	8 weekly sessions of Acceptance and Commitment Therapy (ACT) following protocol with same therapist at each session.	**DAS* **YBOCS*	ACT resulted in a 60% – 80% decrease in death anxiety and a 51% – 60% decrease in obsessive-compulsive symptoms, thereby indicating promise for ACT as a treatment for OCD and death anxiety.
Hayslip *et al.* (1994) (USA)	Controlled study. Non-randomised into treatment and control group.	Participants self-selected.	Death education group *n*=130 (hospital nurses, nursing home staff, undergraduates). Control group *n*=199 (Hospital nurses, undergraduates, community volunteers).	Death Education (DE). Intervention group split into either 'didactic style' or 'experiential style' subgroups.	**DAS* **CLFOD* **ISB* (for measuring unconscious death anxiety). 3-month follow-up.	MANCOVA failed to yield both main effects for style and for treatment. The style by treatment interaction was significant, F13.132 = 1.91, ($p < .05$). Death education was not effective in reducing death fears. Didactic death education reduced denial, permitting the expression of formerly repressed fears to occur. Death education was especially salient for persons confronting issues of death and dying in a classroom (didactic) setting, where individuals are encouraged to participate emotionally as well as cognitively, and seemingly unconscious fears can be brought to the surface, experienced consciously and explored.
Abengozar *et al.* (1999) (Spain)	Controlled study. Each age group randomly allocated to Workshop/ Conference/Control 'modes.	Study advertised in local newspaper.	*n*=73. 33 young adults (18–34 years), 28 middle-aged subjects (35–59 years), 12 elderly subjects (60–75 years).	Conference: didactic explanation of types of death, stages in approaching it, grief phases, etc. Workshop: dynamic exercises in pairs and triads to reflect on death from the perspective of their experiences. Control: neutral stimuli were presented.	**LADS* **DDS* **DAS* Measures administered at study and at 4-month follow-up.	ANOVA found that the differences in Age and Death Despair were statistically significant between groups 1–3 (young/elderly) and between 2–3 (middle-aged/elderly). There was a higher degree of Despair, Death Dread, and Death Depression in the elderly group vs the young & middle-aged adults, respectively. The young-adult Workshop Treatment group showed a significant increase in Death Despair with reductions in Death Dread and Death Anxiety. The young adults Conference treatment increased in the factors Death Despair, Death Sadness, and Depression. In the middle-aged Workshop treatment group, there were significant differences in the factors Death Despair and Death Loneliness. In the elderly group, significant differences were found between the pre-test and follow-up values in the Workshop experimental treatment for the ''Death Anxiety'' factor, anxiety decreasing at 4 months after the initial study.
Anālayo *et al.* (2022) (New Zealand)	Controlled study. Participants assigned via block randomisation method to mindfulness (*n*=44)	Recruitment through announcement on university website with incentive of bonus marks.	*n*=89. Undergraduate psychology students. Females (82%) and New Zealand European (67.4%). Māori (14.6%).	Mindfulness intervention (no explicit mention of death/dying). Contemplation intervention based on the 'Daily Examen' described	**CLFOD* **FFMQ* **SCS-SF*	Mixed Model ANOVA indicated the large effect of time ($F(60, 1) = 71.14$, $p<0.001$, $\eta2 = 0.54$) with no significant differences between groups at any time point and no group-time interaction. Both interventions were equally effective at reducing fear associated with the dying of oneself. There was a significant large effect of time ($F(60, 1) = 62.29$, $p<0.001$, $\eta2 = 0.51$) but no significant group effect and no group-time interaction. There was a significant and large effect of time ($F(60, 1) = 20.53$, $p<0.001$, $\eta2 = 0.26$) with no significant group

	or contemplation (*n*=45) groups.			by St. Ignatius in his *Spiritual Exercises.*		effect and no interaction between time and group. There was a significant increase in self-compassion over time (F(60, 1) = 14.24, $p<0.001$, $\eta2 = 0.19$).
Menzies *et al.* (2021) (Australia)	Controlled study. Participants randomised into intervention (mortality salience) or dental salience (control) groups.	231 treatment-seeking individuals identified with panic disorder/illness anxiety disorder/somatic symptom disorder/depressive disorder by assessing clinicians.	*n*=128 (87 females). 117 Caucasian, 10 Asian, 1 African. Mean age: 34.85. Mean years of education: 16.69.	Mortality salience.	**MFODS* **ADIS-5L* **DASS-21* **BVS* **PDSS* **SSS-8* **HAI* **BFAS* **PANAS-X*	Average MFODS score across sample (*M* =107.80, *SD*= 30.83) indicated substantially greater death anxiety compared to community norms (e.g., *M* =150.20, *SD* =32.04). Reminders of death produced a greater increase in scanning duration for participants with a scanning disorder, but not for those with depression. Among participants with a scanning disorder, mortality salience significantly increased the likelihood of selecting stimuli consistent with poorer health outcomes as being more similar to their own body. Mortality salience produced significant increases in anxious responding (i.e., time spent scanning one's body, identification with images consistent with poorer health, and intention to visit a medical specialist) compared to controls.
Breitbart *et al.* (2010) (USA)	Controlled study. Patients with advanced cancers block randomised to Meaning-Centred Group Therapy (MCGP) (*n*=49) or supportive group psychotherapy (SGP) (*n*=41).	Patients recruited through flyers or physician referral from outpatient hospital clinics between 2002-2005.	*n*=90. Males (*n*=44, 48.9%) and females (*n*=46, 51.1%) with average age of 60.1 and 16.6 years of education. Caucasian (*n*=72, 80%), 7 African-Americans (7.8%), 4 Hispanics (4.4%) and 7 of other ethnic backgrounds (7.7%).	MCGP manualized 8-week intervention influenced by the work of Viktor Frankl and utilised didactics, discussion, and experiential exercises focused on themes related to meaning and advanced cancer.	**SWB* **BHS* **SAHD* **LOT* **HADS* Patients assessed before and after completing the 8-week intervention, and again 2 months after completion.	Repeated measures ANOVA demonstrated that significant group differences in improvement for SWB total score, F(2,74)55.05, $p<0.009$ for the group x–time interaction, along with a significant main effect for time, F(2,74)58.30, $p<0.001$. Thus, while both groups showed some improvement in spiritual well-being, the increases were significantly greater for MCGP patients. MCGP resulted in significantly greater improvements in spiritual well-being and a sense of meaning.
Vaughan & Kinnier (1996) (USA)	Controlled study with pre-post design. Random allocation into either group life intervention (*n*=8), traditional support group (*n*=9), or waiting list (*n*=10).	Recruited from hospitals and community organisations.	*n*=27 (26 males, 1 female). 25 were European American. Mean age: 39.5.	Life review intervention for people with HIV disease.	**DAS* **BSI* **DWICI* **PIL*	MANCOVA and ANCOVA analyses revealed no statistically significant difference between interventions. Statistical trends and participants' written evaluations favoured the life review intervention.
Hajiazizi *et al.* (2017) (Iran)	Controlled study. Non-randomised into treatment and control group (no intervention).	Convenience sampling used to recruit older adults (65 years and above) from Iranian nursing homes. Screened using *LES and *DAS.	*n* = 30 (18 females, 12 males).	Logotherapy (10 x 90-minute sessions). Detail about content of intervention or whether practitioners were trained in delivering Logotherapy was not reported.	**DAS* **LES*	Group therapy had a statistically significant impact on death anxiety in the elderly ($p<0.01$). Group therapy was also found to affect the life expectancy of the elderly at a statistically significance level ($p<0.01$).

Kuru Alici *et al*. (2018) (Turkey)	Controlled study. Non-randomised into non-equivalent treatment (*n*=20) and control (*n*=30) groups, pre-test and post-test measures collected.	Convenience sampling used to recruit older adults (65 years and above) from Turkish nursing homes.	*n*=50 (27 females, 21 males) Age range: 65-97.	Laughter Therapy (LT).	**DJGLS* **TDAS*	A statistically significant difference ($p < 0.001$) between mean DJGLS scores of the intervention (7.15 ± 1.755) and control groups (15.63 ± 5.027) was observed after the intervention. Median DJGLS scores were significantly lower in the intervention group than in the control group. After therapy, the social loneliness score was significantly lower in the intervention group (3.10 ± 1.553, $p < 0.001$) than in the control group (6.90 ± 3.100). Post-therapy, the emotional loneliness score was significantly lower ($p < 0.001$) in the intervention group (4.05 ± 1.538) than in the control group (8.73 ± 2.599).
Naghipoor *et al.* (2021) (Iran)	Controlled study. Non-randomised into treatment and control groups (control condition not reported). Pre-test and post-test measures collected.	Convenience sampling used to recruit older adults (60 years and above) from Iranian nursing homes.	*n*=30 (all males). 60-70 years.	Positivism training (8 x 90-minute weekly sessions).	**ASI* **CLFOD*	Statistically significant difference between experimental and control groups in terms of suicide ideation and death anxiety in the post-test ($p<.001$).
Dilmaghani *et al.* (2022) (Iran)	Controlled study. Randomly allocated into treatment or control (no intervention) groups. Pre-test and post-test measures collected.	Convenience sampling used to recruit older adult females (65 years and above) from daily rehabilitation services.	*n*=24 (all females).	Group Logotherapy (10 x 90-minute sessions).	**DAS* **R-UCLA* **MLQ*	ANCOVA revealed a statistically significant difference between control and experimental groups in terms of death anxiety, feeling of loneliness and meaning of life ($p<0.05$).
Samakoush & Yousefi (2022) (Iran)	Controlled study. Randomly allocated into treatment or control (no intervention) groups. Pre-test and post-test measures collected.	Convenience sampling used to recruit older adults (65 years and above) from Iranian nursing homes.	*n*=30 (sample demographics not reported).	Acceptance and Commitment Therapy (ACT) (8x60 minute sessions).	**DAS* **OHS* *CDRS*	ANCOVA revealed a statistically significant difference between the experimental and control groups in terms of death anxiety, happiness and resilience in at post-test measurement.
Moghadam *et al.* (2020) (Iran)	Controlled study. Non-randomised treatment and control groups, pre-test and post-test measures.	Convenience sampling used to recruit older adults from Iranian nursing homes.	*n*=30 (14 females, 16 males).	Compassion-focused therapy (CFT).	**ATS* **CLFOD*	Statistically significant difference between intervention and control groups' death anxiety and ability to tolerate ambiguity anxiety. CFT was associated with an increase in ability to tolerate ambiguity and reduction in death anxiety ($P<0.001$).

Note
**DAS*: Death Anxiety Scale (Templer, 1970).
**SWB*: Spiritual Well-Being Scale.
**BHS*: Beck Hopelessness Scale.
**SAHD*: Schedule of Attitudes toward Hastened Death (SAHD).

YBOCS: Yale-Brown Obsessive-Compulsive Scale (Goodman *et al.*, 1989).
CLFOD: Collett-Lester Fear of Death scale (Cuniah *et al.*, 2021), Incomplete Sentence Blank (Rotter, 1950).
LADS: Lester Attitude to Death Scale.
DDS: Death Depression Scale (DDS),
FFMQ: Five Facet Mindfulness Questionnaire (Baer *et al.*, 2006).
SCS-SF: Self-Compassion Scale-Short Form (Raes *et al.*, 2011).
MFODS: Multidimensional Fear of Death Scale (Hoelter, 1979)
ADIS-5L: Anxiety and Related Disorders Interview Schedule for *DSM–5*—Lifetime Version (Brown & Barlow, 2014).
DASS-21: Depression Anxiety and Stress Scale (Lovibond & Lovibond, 1995).
BVS: Body Vigilance Scale (Schmidt *et al.*, 1997).
PDSS: Panic Disorder Severity Scale (Shear *et al.*, 1997).
SSS-8: Somatic Symptom Scale (Gierk *et al.*, 2014).
HAI: Health Anxiety Inventory (Salkovskis *et al.*, 2002).
BFAS: Neuroticism subscale of Big Five Aspects Scale (DeYoung *et al.*, 2007).
PANAS-X: Positive and Negative Affects Schedule-Expanded Form (Watson & Clark, 1994).
LOT: Life Orientation Test.
HADS: Hospital Anxiety and Depression Scale.
BSI: Brief Symptom Inventory (Derogatis & Melisaritos, 1983).
DWICI: Dealing with Illness-Coping Inventory (Namir *et al.* 1987).
PIL: Purpose in Life Test (Crumbaugh & Maholick, 1964).
LES: Life Expectancy Scale (Miller, 1997).
DJGLS: De Jong Gierveld Loneliness Scale.
TDAS: Turkish Death Anxiety Scale.
ASI: Assessment of Suicidal Ideation Scale (Beck *et al.*, 1979).
R-UCLA: Revised UCLA *Loneliness Scale* (Russell *et al.*, 1980).
MLQ: Meaning of Life Questionnaire (Steger *et al.*, 2006).
OHS: Oxford Happiness Scale (Hills & Argyle, 2002).
CDRS: Conner and Davidson's Resilience Scale (Conner and Davidson, 2003).
ATS: Ambiguity Tolerance Scale (McLain, 2009).

Systematic Literature Review Results

1.17 Study Selection

There were 13 studies included in the systematic review: Davazdahemami *et al.* (2020), Hayslip *et al.,* (1994), Abengozar *et al.,* (1999), Anālayo *et al.,* (2022), Menzies *et al.,* (2021), Breitbart *et al.,* (2010), Vaughan & Kinnier (1996), Hajiazizi *et al.,* (2017), Kuru Alici *et al.,* (2018), Naghipoor *et al.,* (2021), Dilmaghani *et al.,* (2022), Samakoush & Yousefi (2022), and Moghadam *et al.,* (2020).

1.18 Study Characteristics

All studies used self-report measures of death anxiety. Each study used at least one death anxiety/death-related measure, with most studies opting to use the unidimensional Death Anxiety Scale (DAS) (Templer, 1970). However, 7 studies used multidimensional measures (Hayslip *et al.,* 1994; Abengozar *et al.,* 1999; Anālayo *et al.,* 2022; Menzies *et al.,* 2021; Breitbart *et al.,* 2010; Naghipoor *et al.,* 2021; Moghadam *et al.,* 2020). 2 studies even used multiple death-related measures (Hayslip *et al.*, 1994; Abengozar *et al.,* 1999) which increased the precision of outcome measurement in those studies. However, there was an overall lack of consistency and comparability between studies in the death anxiety measures used.

Studies were geographically diverse with 6 studies conducted in Iran where, interestingly, the area of death-related research is active. A total of 930 individuals (not including eight participants for the single case designed study; Davazdahemami *et al.,* 2020) covering treatment and control groups, participated in these studies. 433 individuals were in the intervention or sample groups, and 497 were used in control groups. The following 7 studies were randomised controlled trials (RCTs): (Abengozar *et al.* 1999; Anālayo *et al.,* 2022;

Menzies *et al.,* 2021; Breitbart *et al.,* 2010; Vaughan & Kinnier, 1996; Dilmaghani *et al.,* 2022; Samakoush & Yousefi, 2022). The remaining 6 studies employed either a non-randomised controlled design (Hayslip *et al.,* 1994; Hajiazizi *et al.,* 2017; Kuru Alici *et al.,* 2018; Naghipoor *et al.,* 2021; Moghadam *et al.,* 2020) or a single case design (Davazdahemami *et al.,* 2020). There were no studies with a longitudinal or cohort design and few studies included follow-ups. In fact, several studies were brief, consisting in a small number of sessions, contributing to a lack of understanding of the sustainability of intervention effects over time.

Systematic Literature Review Discussion

The purpose of this systematic review was to examine, critically appraise, and synthesise findings from research on psychological interventions for death anxiety in working age adults. Results from the studies included in this review provide a complex, multidimensional picture that requires consideration and evaluation. Despite the novelty of this topic area, 13 studies have been included in this review. This benefits the statistical power, increasing the usefulness of this review for more detailed follow-up research. Overall, 11 studies had significant findings and 2 studies did not. However, certain of the studies with significant findings involved a ‘no treatment’ control group which undermines the weight of the significance especially as compared with studies that employed control groups.

Consistent with previous systematic reviews on psychological interventions for death anxiety (Menzies *et al.*, 2018; Grossman *et al.,* 2018) therapy type was a significant moderator of treatment efficacy in two studies (Breitbart *et al.*, 2010; Anālayo *et al.,* 2022). However, few studies compared different types of therapy and studies tended to compare one type of therapy at a time with a control. Contrary to what Menzies et al. (2018) found, intervention type significantly moderated the treatment effect in two studies: didactic vs experiential death

education (Hayslip *et al.*, 1994) and didactic 'conference' vs experiential intervention (Abengozar *et al.,* 1999). This indicates an important difference with regard to how one's exposure to death-related issues is facilitated, i.e., through didactic instruction or experience. Studies with individuals whose real-life experiences were related to death allowed for them to engage more deeply with the intervention, allowing richer data to be collected (Davazdahemami *et al.*, 2020). One clinical implication relates to the importance of how exposure to death is managed as this moderates treatment efficacy. The nature of exposure to death may be overlooked in manualised approached for treating general anxiety as opposed to death anxiety (e.g. CBT and exposure therapy). The benefits of experiential exposure to death-related issues were kept in mind in designing and delivering the DRM-based intervention.

The results of the current review demonstrated that certain of the treatment effects amongst numerous interventions reduced death anxiety when compared against controls (*Death Education*, *Mindfulness* and *Contemplative interventions*, *Meaning-Centred Group Psychotherapy*, *Group Logotherapy*, *Laughter Therapy*, ACT, and CFT). This differs from Menzies et al. (2018) review that found CBT to be most efficacious (in terms of main treatment effect) when compared to other interventions. In fact, the heterogeneity of studies and the diverse treatment modalities that were viewed as a benefit in the current study were seen as a limitation in Menzies et al. (2018) review. Whilst emphasising main treatment effect is reasonable, it fails to acknowledge the importance of even minor clinical gains in reducing death anxiety and promoting a more holistic engagement with death especially in clinical populations with high levels of distress and limited life expectancy (e.g., anxiety-related disorders in Menzies *et al.*, 2021; advanced cancer in Breitbart *et al.*, 2010).

Despite including it in the search terms, the current review included no studies on CBT or exposure therapy (however there are certainly elements of exposure in ACT and *Death*

Education). The interventions in the studies currently reviewed all differed from CBT or exposure therapy which were, in turn, shown to be most efficacious in an earlier review (Menzies *et al.*, 2018). However, the ability of *Meaning-Centred Group Psychotherapy* (Breitbart *et al.,* 2010), *Mindfulness* and *Contemplative interventions* (Anālayo *et al.*, 2022), and *Experiential Death Education* (Abengozar *et al.,* 1999*;* Hayslip *et al.*, 1994) to produce clinically significant change in death anxiety is encouraging. These interventions bear clinical and theoretical similarity to death reflection in the sense that they leverage the specific existential system and aspects of post-traumatic growth.

Amongst the strengths of the current review is that certain studies included novel interventions (*Laughter Therapy* in Kuru Alıcı *et al.,* 2017) or more established interventions in novel settings (*Group Logotherapy* in a rehabilitation service in Dilmaghani *et al.,* 2022) amongst clinical and general populations for whom death anxiety may have been disabling (Menzies *et al.*, 2021; Breitbart *et al.*, 2010), leading to meaningful outcomes such an increased life expectancy (Hajiazizi *et al.,* 2017). While it was unclear whether these interventions were delivered by trained practitioners, all interventions were delivered cost-effectively in a way that could feasibly be incorporated in care settings such as hospitals, nursing homes, and community care settings.

The studies included in this review are novel and important in this under-researched area of adult psychotherapy research. However, further research is needed to address certain areas of uncertainty. Limiting the systematic review to quantitative studies was most appropriate given the minimal number of studies with qualitative methodologies revealed by an exploratory literature search, and the heterogeneity of death-related studies. On reflection, a qualitative approach could have complemented the quantitative approach and helped to address the research question by widening the scope of kinds of studies and interventions

included and illustrating the participant experiences within these interventions. While this was not possible within the time constraints of the current study future research on psychological interventions for death anxiety would benefit from reviewing qualitative studies. The current study may have clinical applications in highlighting the presence of death anxiety within a number of psychological/psychiatric presentations common in adults, e.g. depression and anxiety.

Studies on group interventions for death anxiety produced promising results (Hajiazizi *et al.,* 2017; Kuru Alici *et al.,* 2018). This format is potentially facilitative for reducing death anxiety not to mention being more cost-effective than individualised therapy. While death anxiety can be experienced as individualised and multidimensional it may still benefit from the interpersonal communication, sharing experiences, emotional support, and interaction available in group interventions (Jo & An, 2018). More research is required to compare the efficacy of group and individual interventions.

*1.19 **Systematic Literature Review Conclusion***

This systematic review has presented novel findings in a relatively under-researched area. A variety of psychological interventions that address death anxiety in working age adults were found to be efficacious on measures of death anxiety and a variety of outcomes across obsessive compulsive disorder, health anxiety disorder, general anxiety, depression, hopelessness, loneliness, psychological stress, spiritual wellbeing, and happiness. These results may highlight how death anxiety may be experienced, specifically by working age adults for whom wealth, status, and avoidance of death are more likely (Cozzolino *et al.*, 2006). With the benefit of further research, the interventions can continue to develop their efficacy for decreasing death anxiety and help working age adults to a more holistic appreciation of their

own mortality. It is hoped that this review contributes to our understanding of death anxiety, and mortality awareness more broadly, in working age adults.

1.20 Limitations of the Review and Recommendations for Further Research

The final studies, whilst chosen through a reasoned and methodological process, exemplify a paucity of intervention studies and randomised controlled trials (RCTs) related to death anxiety in working age adults. Despite numerous studies showing death anxiety is higher/highest among working age adults, few of the studies in the current review used working age adult samples. Perhaps this is due to the commonly held belief that death anxiety is higher amongst older adults. Randomised controlled trials with larger sample sizes are needed to examine the effectiveness of interventions for death anxiety in adults cross-sectionally. From the 13 studies have been included in this review, there were no longitudinal studies and few studies with follow ups there was a lack of evidence on the long-term effects of interventions for death anxiety.

Several studies did not report the size of the treatment effect, and several studies provided no intervention for the control group. In these cases, it was not possible to ascertain whether the positive effects of the treatment were sufficient to outweigh its negative effects. Most studies used self-report questionnaires which are vulnerable to social-desirability effects, dishonesty, introspective inability, response bias or a misinterpretation of the questions. Without this being acknowledged by the studies this may undermine the validity of the results. The use of interview procedures, such as in the current study, may help to limit these effects and specify aspects of death and dying that are the intrinsic sources of individuals' fears (Fry, 2003).

The use of outdated, unidimensional measures for death anxiety limits the discussion of research findings, despite the pioneering use of novel interventions in relevant settings such as nursing homes. Future research would do well to employ more specified and psychometrically valid measures of attitudes towards death and the process of dying (pertaining to oneself and others). As this review was conducted by a lone researcher, study inclusion and quality assessment ratings were not agreed with a second researcher. Thus, there is an increased risk of bias which may influence the trustworthiness of the findings. The researcher followed standardised procedures for assessing the quality of studies to avoid this. Computerized search tools are not 100 per cent comprehensive and will not identify all the relevant literature on your topic. This has been well documented (Wilczynski *et al.*, 2007; Papaioannou *et al.*, 2010, McElhinney *et al.*, 2016).

1.21 ***Research Aims and Research Question of Current Study***

The systematic review found that a variety of psychological interventions effectively addressed death anxiety with therapy type substantially impacting treatment efficacy. A number of existentially related/meaning-related interventions (e.g. Logotherapy) were shown to be effective at treating death anxiety. This suggests that the existential theoretical background of death reflection may benefit its ability to treat death anxiety.

Appraising the quality of studies in this systematic review revealed that methodological rigour was a concern for several studies which may have undermined the plausibility of their findings. Research has shown that, despite the benefits of death reflection interventions for working age adults, this remains an under-researched and emerging area. There is a shortage of quantitative research that investigates the relationship between death reflection, death attitudes, and psychological well-being. Qualitative research is also lacking

exploring individuals' subjective experiences of death reflection, including their interpretations, emotions, beliefs, and insights gained through the process. Importantly, qualitative studies can address this by examining how participants make sense of mortality awareness, confront existential questions, and integrate reflections on death into their lives.

The current preliminary study aims to investigate whether sustained death reflection is associated to changes in wellbeing and death attitudes (specifically fear of death and avoidance of death) (primary outcomes) as well as depression, anxiety, and stress. These outcomes were chosen to illustrate the potential psychological benefits of death reflection over time in a more targeted way following previous studies. The following research question will guide the study:

Research Question: *What are the Potential Psychological Benefits of Death Reflection over Time?*

Given the above literature review, the following aims will attempt to address the research question:

Aim 1: To develop a four-week intervention based on Cozzolino's (2004) 'Death Reflection Manipulation' (DRM).

Aim 2: To pilot, run, and evaluate the four-week DRM-based intervention using a controlled design and collecting psychometric outcome measures.

Aim 3: To elicit how participants made sense of their experiences of the DRM-based intervention using a qualitative approach.

More specifically, aim 3 will explore how participants experienced the process of death reflection and how they interpreted or made sense of the outcomes or perceived changes, if any, following the completion of the intervention.

The hypotheses for this research are as follows:

- That death reflection will be associated with increased levels of wellbeing*
- That death reflection will be associated with reduced levels of fear of death.
- That death reflection will be associated with reduced levels of death avoidance.
- That death reflection will be associated with reduced levels of depression, anxiety, and stress*

**Note* – While these constructs are not mutually exclusive, an inverse relationship between wellbeing and depression, anxiety, and stress is expected to be observed, such that any increase in wellbeing would correspond with a reduction in depression, anxiety, and stress.

To the best of our knowledge, this is the first, preliminary stage in developing a novel intervention from an important area of emerging theory in social and existential psychology. It is hoped that the current study will build on previous death reflection studies conducted in social psychology and deepen our understanding of their findings and their potential theoretical and clinical applications. Based on the results, there is potential for this to be developed into a form of psychological therapy in the future. It is hoped that the results will aid our understanding of the psychological benefits of existential contemplation and support the application of this novel approach to a range of psychological presentations, where relevant.

2 Methods Chapter

2.1 Chapter Introduction

This chapter will explain the practical steps the researcher took to explore what the potential benefits of death reflection over time were, beginning with a critical discussion of the epistemological positioning of the current research in order to help to justify the choice of methodology. The rationale behind the variables included, the choice of design, and the analyses run will then be explained. The intervention will be discussed in detail within its theoretical context before the steps taken to adapt it (i.e. consultation) are discussed. Procedures for recruitment and screening will then be laid out before the delivery of and procedures involved in the intervention are discussed. Screening and outcome measures will all be set out in detail before data analysis is explained in relation to each research hypothesis. Finally, ethical considerations and thoughts on disseminating this research will be discussed.

2.2 Epistemological Positioning and Justification of Methodology

Death anxiety can be broadly defined as a conscious or unconscious psychological state resulting from a defence mechanism that can be triggered when people feel threatened by death (Zhang *et al.*, 2019). Within the psychological literature, our knowledge of our own mortality has been conceptualised as innately terrifying to us and something that we are motivated to attempt to deny to our own awareness. In response to this terror, TMT argues that "culture reduces the terror engendered by awareness of our vulnerability and mortality by providing a shared symbolic conception of reality that imputes order, predictability, significance, and permanence to our lives" (Greenberg *et al.*, 1986, p. 206). One area of empirical research that supports the conclusions of TMT is *death salience* or *mortality salience*; the idea that "making

death salient by asking people to think about themselves dying…intensifies strivings to defend their cultural worldviews" (Vail *et al.*, 2019). Death salience research proposes that when the idea of death is brought to mind, people are driven to affirm their core beliefs and attachments to those things that will outlive them in an attempt to suppress their innate fear of death. Historically, the predominance of TMT and death salience has positioned death rather one-dimensionally, as something we are exclusively driven to fear and avoid rather than come to a more holistic contact with.

Research in social psychology took a different approach to studying death, for instance through 'existential contemplation'. Reflecting on death, and life in the context of death, has been shown to be a source of meaning, reorientation, and growth. This approach was based on a critique of TMT in so far as TMT operates under the "abstract existential system" (activated by abstract thoughts about death) (Cozzolino, 2006). Distinct from this, life-threatening situations arguably make individuals acutely aware of how and when they may die (Blackie & Cozzolino, 2011), activating the "specific existential system" (Cozzolino, 2006). Cozzolino *et al.* (2004) explored the beneficial effects of thinking about one's own mortality by targeting the specific existential system in a series of laboratory experiments.

2.3 Design

2.3.1 Death Reflection Manipulation

In the *Death Reflection Manipulation* (DRM), Cozzolino *et al.* (2004) aimed to create and operationalise an "analogue to the near-death experience" (p.282). Participants were asked to read and imagine themselves experiencing the events described in a *death scenario*. Participants imagined waking up in the middle of the night in a friend's apartment on the "20th floor of an old, downtown building" to the "sounds of screams and the choking smell of smoke"

(Appendix A). Thus, the death scenario was intended to prompt participants to imagine their own death in a concrete, vivid, inescapable, and individuated manner. The scenario details the participant's futile attempts to escape the room and burning building before finally giving in to the fire and eventually death. After reading the death scenario, participants answered the following questions:

- Please describe in detail the thoughts and emotions you felt while imagining the scenario.
- If you did experience this event, how do you think you would handle the final moments?
- Again, imagining it did happen to you, describe the life you led up to that point.
- How do you feel your family would react if it did happen to you?

These four questions were designed by Cozzolino (2004) to activate some of the common elements found in post-traumatic growth following near-death experiences (NDEs) (Tedeschi & Calhoun, 2004). Questions one and two reinforce the notion of facing an actual death, as opposed to the abstract concept of mortality. Questions three and four mirror the near-death experience of life review in that Question three allows the participants to reflect on their own life and Question four allows them to take the perspective of others (Cozzolino *et al.*, 2004).

The death scenario and subsequent questions were informed by first-person accounts of NDEs (Ring & Valarino, 2006). Central to NDEs is the shattering of what Parkes (1971) termed the "assumptive world"; a set of beliefs and assumptions about the world that guides our actions, that helps us to understand the causes and reasons for what happens, and that can provide us with a general sense of meaning and purpose (Tedeschi & Calhoun, 2004). In NDEs, it is important that the events are sufficiently dangerous and compelling to challenge the assumptive world, setting in motion the cognitive processing necessary for growth. Post-traumatic growth following NDEs has been associated with increased compassion (Tedeschi

et al., 1998), favourable attitudinal change (Ring, 1984; Ring & Valarino, 2006), and forming more authentic versions of the self that are in line with more intrinsic values (e.g. family, contributing to society) than *extrinsic* values, e.g. wealth, power, and status (Cozzolino, 2006; Lindstrom *et al.*, 2013).

In the current study, following from Cozzolino's operationalisation of aspects of NDEs, the psychological benefits of death reflection were explored by targeting the specific existential system. We explored the effects of death reflection on individuals' wellbeing and their attitudes to death, specifically on their levels of fear and avoidance of death. We also explored the effects on depression, anxiety, stress (as independent from wellbeing) and authenticity (i.e. being in touch with one's "real self").

2.3.2 Consultation

As this was a novel intervention to be delivered by the researcher, a Clinical Psychology Doctoral student, the researcher was in ongoing consultation with Dr Philip Cozzolino, former researcher and lecturer in Department of Psychology at the University of Essex who specialises in research into mortality awareness. Ongoing consultation with two experts in clinical psychology, including quantitative and qualitative research, Hugo Senra and Susan McPherson, helped the researcher to decide on technical aspects such as study design and risk management. Consultation with a University of Essex lecturer and mindfulness practitioner supported the design and delivery of the intervention, by emphasising the importance of guiding participants into the scenario; allowing them to come to a comfortable position and settle the mind in preparation for the intervention as this would aid receptivity. A mindfulness exercise was included for participants before the death scenario to enable them to connect with their embodied experience throughout the process,

using all the five senses. This aspect of the intervention was intended to facilitate a reflexive or experiential awareness of mortality as opposed to the reflective processes involved in a purely intellectual contemplation of mortality.

The researcher also consulted with an NHS Chaplain who works in end-of-life care and therefore had experience of people navigating difficult life transitions involving loss, grief, and meaning. The Chaplain advised on the importance of professional boundaries as death is an emotive topic where others' pain and our own can get mixed up. This consultation helped the researcher think about how participants may experience reflecting on their own mortality. It helped to reflect that in situations of crisis or major adversity, people are more likely to confront their own mortality but the challenge for us was bringing this into everyday life. Attending a community-driven *Death Café* allowed the researcher to engage in unstructured, agenda-free conversation about death (Miles & Corr, 2017). Individuals attend death cafés to process their mortality or the existential experience, to share experiences of loss and curiosity (Miles & Corr, 2017). This was intended as experiential learning in preparation for delivering the death reflection manipulation.

2.3.3 Participants

Quantitative

The demographic information for the quantitative sample is shown below (see Table 2).

Qualitative

Participants included in qualitative analysis (n = 4) were a sub-group of the larger sample (n = 25) included in quantitative analysis. Four participants were selected using purposive sampling from the study sample and agreed to semi-structured interviews. It was

intended to select a sample whose experiences of the intervention varied. Therefore, participants were chosen whose outcome measure scores showed either the greatest or the least change over the four-week intervention. The four participants were interviewed once each and are referred to using pseudonyms as Laura, Sarah, Sheila, and Callum. Interviews were conducted remotely using Microsoft Teams. Demographic information for participants who underwent qualitative analysis is presented below (see *Table 3* in Results).

Regarding the qualitative methodology for the interviews, within IPA, fewer participants examined at a greater depth is always preferable to a broader, shallow and simply descriptive analysis of many individuals (Reid *et al.,* 2005). While a sample of four to ten was found to be suitable for studies completed as part of professional doctorates it was also highlighted that sample size is contextual and must be considered on a study-by-study basis (Eatough & Smith, 2017). Beginners to IPA are advised to run a less ambitious project with a smaller sample to maintain a deeper level of analysis with a more interpretative focus (Eatough & Smith, 2017*).*

2.3.4 Conceptual Justification of the Chosen Age Range

While the relationship between death anxiety and age is multifactorial, age has been shown to be a significant factor in determining who is more likely to experience death anxiety (Russac, Gatliff, Reece, & Spottswood, 2007). Perhaps counterintuitively given their lack of proximity from death, death anxiety has been found to be higher amongst the young and the middle-aged before declining during later adulthood and then stabilising in old age (Fortner & Neimeyer, 1999). In accounting for why levels of death anxiety tend to be high amongst the young, social psychology studies have highlighted the prevalence of extrinsic values (e.g. wealth, social status, self-image, and physical attractiveness) amongst young adults. Those who live in accordance with extrinsic values diverge from intrinsic values (e.g. community, relationships, creativity, meaning). Furthermore, in limiting the time we can

sustainably strive for wealth, social status, etc., ageing and death undermine extrinsic values. This creates the motivation for more extrinsically oriented young adults to avoid or deny the reality of their own death. These motivations have been found to persist into middle age (Fortner & Neimeyer, 1999) before acknowledging death is unavoidable.

Therefore, besides the practical benefits of conducting research with a wider age range, there is theoretical justification for why younger and middle-aged adults may have more to gain than other age groups from a holistic relationship with death, and the associated benefits for wellbeing this involves (Blackie *et al.,* 2016). A more holistic relationship towards death may benefit those who are driven towards extrinsic values. It may also benefit the young who are uniquely affected by recent global and cultural trends such as climate anxiety (Hickman *et al.,* 2021), not to mention the influence of the anti-ageing movement (Anderson & Gettings, 2022). For these reasons, participants from age 18 were recruited. The age range of 18-65, while broad, allowed for inter-age comparisons to test whether the theoretical conclusions of previous studies were borne out or not.

2.3.5 Participant Recruitment

As the intervention was novel and restricted within a limited timeframe, a convenience sample was chosen due to being cost-effective and allowing for the recruitment of as many participants as possible in the time allowed. The researcher aimed for a sample of approximately 60 participants to be divided between treatment and control conditions. This allowed for the possibility of study attrition while being a smaller sample than the previous, better-resourced studies using similar interventions (Spitzenstätter & Schnell, 2020; Cozzolino et al, 2004; Blackie & Cozzolino, 2011). Obtaining ethical approval for using a clinical sample was not feasible given the limited timeframe. A range of sampling methods were used to recruit

as diverse a sample as possible of working age adults. Community sampling was used by posting study adverts for the study to the staff and student population of University of Essex (Colchester campus). Adverts were also posted in shops and cafes in Colchester city centre to include the local Essex community. Convenience sampling was used by advertising the study on University of Essex Twitter/X and Facebook social media platforms. Purposive sampling was used to reach attendees of *Death Cafés*; individuals who met regularly to reflect on themes around death and who, therefore, had made contact with themes raised in the current study. Relevant community groups and individual participants were asked to share the study advertisement to reach a wider audience via *snowball sampling*. Once that participants had responded to the study advertisement to express interest, they were screened according to the process outlined below.

2.3.6 *Screening*

Once participants had expressed interest in participating, they were sent the *Participant Information Sheet* (Appendix B) and *Consent Form* (Appendix C). Participants were given time to consider participation, and the researcher was available to answer questions and address any concerns about the study. On receipt of the aforementioned documents, the researcher contacted each participant by telephone for screening during which the study was explained and questions were answered before completing the *Participant Demographic Information Form* (Appendix D) and screening measure (Appendix E). Given the amount of time and energy needed to practice the Death Reflection Manipulation, the importance of adhering to the reflection exercise for the four-week duration with the possibility of further involvement in week five and six (for qualitative interviews) was impressed upon prospective participants.

Regarding exclusion criteria, participants who reported contra-indicated factors (e.g. alcohol/substance misuse, severe and enduring mental illness such as psychosis, major depressive disorder, and specific attitudinal characteristics such as being unwilling or unable to engage in the assigned self-directed practice) were deemed not to be appropriate for our study and were excluded from participation. After consulting with thesis supervisors, it was decided that the intervention was intended for those with mild to moderate psychological difficulties. Given both the remote, self-directed delivery and the potentially emotionally distressing nature of the intervention, it was judged to be of more potential risk than benefit, and therefore potentially unethical, to include individuals with anything more than moderate psychological difficulties. Working age adults were targeted as previous research demonstrates they stand to benefit most from this kind of intervention (Bengtson *et al.,* 1977; Keller *et al.*, 1984; Russac *et al.*, 2007) (see *Introduction*).

The *Clinical Outcomes in Routine Evaluation Outcome Measure* (CORE-10 v1.1; Appendix E) (Barkham *et al.*, 2013) was used as a screening measure to measure individuals' levels of psychological distress. The *CORE-OM v1.1* was designed to be used for screening as well as over the course of treatment to track progress (Barkham *et al.*, 2013). Participants with any score above 'moderate' on this measure were excluded from participation. Several individuals who scored above cut-off were excluded after the above rationale was explained gently to them.

2.3.7 Inclusion and Exclusion Criteria

Inclusion and exclusion criteria for participation were as follows:

<u>Inclusion Criteria:</u>

- Individuals between the ages of 18 and 65.

- Individuals with reliable access to the internet and access to a private/confidential space from which to participate in remote sessions.
- Individuals with at most mild to moderate mental health difficulties (without a mental health diagnosis).

Exclusion Criteria:

- Individuals below the age of 18 or over the age of 65.
- Individuals with severe or extreme mental health difficulties.
- Individuals who are currently or have previously been diagnosed with/treated for/experienced severe or enduring mental health difficulties.
- Individuals who misuse alcohol/recreational drugs/non-prescribed medication.

2.3.8 Delivery of the Intervention

In developing the pre-existing DRM into a self-directed intervention, it was decided to deliver the intervention remotely instead of face to face. Remote delivery allowed for participants to access and engage with the intervention flexibly. Given the relatively long period of four weeks it was important to mitigate against the potential reduction in effectiveness of a remote, self-directed intervention. Audio-visual recordings were created and placed on the Qualtrics survey platform to supplement the surveys and reflective diaries. Dr Philip Cozzolino supported the researcher in making the recordings of the death scenario and video prompts, providing the recording equipment. Recordings took the form of a brief guided mindfulness practice and death-related prompts (Appendix H), both of which were intended to facilitate a calm, contemplative state of mind for optimum engagement with the intervention. Admittedly, remote delivery did not offer participants the same level of support and guidance as face-to-face delivery. Researcher support has been found to maximise intervention

effectiveness and participant adherence to practice instructions (O'Cathain *et al.*, 2015). It was decided to offer participants weekly 'Keep in Touch' (KIT) emails (see *Procedure* below) to ensure participants' understanding of the study instructions and promote their engagement with the study.

While previous death reflection studies have shown a change in attitudes and outcomes indicative of wellbeing, they have not investigated whether these changes are sustainable or short-lived. Studies have not explored, for example, what factors make death reflection more or less beneficial for individuals or how many times a week death reflection was required to create substantial change. The current study sought to address these gaps by extending the DRM-based intervention over a period of four weeks. Based on consultation with Dr Philip Cozzolino who helped to design the DRM protocol, questions were intended to act as themes that participants could reflect on in a way that was integrated into their daily lives. For this reason, the four questions from the DRM were posed individually instead at once. A four-week duration also allowed us to see how participants' relationship with death changed over four weeks.

Earlier weeks allowed participant to become familiar with the intervention. Four-week duration also made death reflection more suitable for a therapeutic style of intervention as participants had more time to digest and process their feelings evoked by the death scenario. They could also become more familiar with the process of death reflection as a self-directed intervention. The death scenario was expected, as in previous studies, to evoke a fear response which may have transitioned over the duration of four weeks, as participants recorded in their diaries. Capturing the progression and nuance of responses to death reflection was a strength of the four-week duration that may not have been possible over a shorter duration.

2.3.9 Rolling Pilot

Following consultation with thesis supervisors, a 'rolling pilot' design was chosen to review the logistics and feasibility of the full-scale study, attempting to identify any obstacles that may arise. The rolling pilot sample was six participants in total, randomly divided into control (n = 3) and treatment (n = 3) groups. These six participants underwent two weeks of the intervention before the rest of the participants started the intervention. The rolling pilot identified minor changes to increase the acceptability of the intervention and improve the likelihood of participants' adherence to it in the full-scale study.

2.3.10 Controlled Design

A *pre-test/post-test control group* design was used for the quantitative arm of the study, also known as a pre-test/post-test randomized experimental design. A controlled design, although not a necessity, was selected to provide the most reliable evidence on the effectiveness of the intervention by minimising the risk of confounding factors influencing results. Participants were randomly assigned to either the treatment condition (death reflection) or the control condition. In designing the control condition, a number of options were considered. In randomised controlled trials, *treatment as usual* (TAU) is the most frequently used control condition (Munder *et al.*, 2022). TAU is considered least likely amongst other control conditions (e.g. no-treatment, wait-list, and attention-placebo) to interfere with drawing valid inferences about the impact of treatment (Kazdin, 2015).

A CBT control condition was considered, particularly given that a previous systematic review found it to be the most effective at treating death anxiety when compared with numerous psychosocial interventions (Menzies *et al.*, 2018). The prospect of employing a CBT control condition provided the possibility of comparing an evidence-based and theoretically distinct

kind of intervention against death reflection. However, given the considerable time commitment required by the study for the time and resources involved in designing and delivering both death reflection and CBT interventions were beyond the scope of the individual researcher completing this study. In addition, the current study was not intended as an intervention study comparing two interventions. Rather, it was intended as an exploratory pilot study into death reflection as a novel therapeutic intervention.

A brief mindfulness body scan was selected as a control condition. It was decided that viewing a brief, two-minute, guided mindfulness video would encourage control participants to focus on their breathing and connect with to their bodies (Appendix H). This was intended to promote engagement with and adherence to the study. Participants in the treatment condition viewed the very same video to induce the appropriate physical and mental state to engage optimally with death reflection. This control condition was observed to be sufficient at rolling pilot stage to achieve a balance of promoting adherence to the intervention while not constituting a substantive alternative to the death reflection intervention. Therefore, mindfulness was sufficiently similar to a no treatment control condition. The study literature shared with participants before screening described the topic of the study as 'reflecting on life and end of life'. A Mindfulness control condition (as opposed to no treatment), given its reflective component, also protected against control participants realising they were not receiving the treatment which may have reduced the reliability of the treatment/control comparison. Admittedly, this condition may have caused a relaxation response which has been observed to reduce sympathetic activation and stress (Baer, 2003). The control condition's intervention involved no death-related content. In opting for this design, it was intended for this novel intervention to remain simple and replicable for the purposes of future research. Four self-report psychometric measures (see *Measures* below) were used to assess the efficacy of the four-week DRM-based intervention against controls.

2.3.11 Intervention

The DRM-based intervention was delivered over a four-week period with semi-structured interviews being conducted in the subsequent two weeks. This constituted an extension of the brief, cross-sectional designs of earlier studies (Cozzolino *et al.*, 2004; Blackie & Cozzolino, 2011; Cozzolino *et al.*, 2014). The death scenario was read aloud via audio recording to participants in the treatment group in weeks one and three. A different set of audio-visual prompts from the Death Reflection Script (Appendix H) played after the death scenario for variety and to facilitate an appropriate state of mind for death reflection. Participants were encouraged to recollect it throughout the four weeks, supported by written reminders on the survey platform and email prompts throughout the study.

The intervention was designed to facilitate a vivid connection with one's mortality and to encourage related reflections on one's sense of life meaning and purpose in light of death. Each of the four questions in the death reflection (see *Design*) acted as a theme for each of the four weeks that helped to engage participants with the intervention. Data was collected in three ways throughout the study; from the reflective diary on the *Qualtrics* survey platform, through email/phone contact with participants, and through semi-structured interviews with a subgroup of participants. Previous studies using the brief DRM encountered no concerns around risk to self and they determined not to debrief participants. Due to relatively lengthy duration of the intervention, participants were offered a debriefing email and a phone call after the intervention to support their welfare.

2.3.10 Recruitment Methods

Recruiting a clinical sample was not feasible due to the time constraints of the study. Community sampling was used to recruit from the staff and student population of University of Essex via recruitment notices on social media. Social media and local community advertising were used to target local community pages and groups. We aimed to recruit as diverse a group of participants as possible with regards to age, gender, ethnicity, religious group, etc. Relevant community groups and individual participants were asked to share our study advertisement to reach a wider audience via snowball sampling. Prospective participants were sent an information sheet with a broad summary of the study's aims, potential benefits and disadvantages/risks (Appendix B). As the intervention was time-consuming, participants were offered an incentive, funded by the University of Essex Postgraduate *Proficio* Research Fund and the Postgraduate Research Fund from the Department of Psychology (Appendix F). Participants who completed the four-week intervention received a £15 Amazon voucher. Participants who completed the four-week intervention and a subsequent interview received a £25 Amazon voucher. Compensation for participation was advertised on the study advert (Appendix G) that was affixed to noticeboards.

2.4 Procedure

2.4.1 Week One (Baseline)

Participants in the treatment group received four different surveys over four weeks. In week one, they were emailed a Qualtrics survey containing an introduction to the intervention, a mindfulness-based 'preparation' video, and an audio reading of the death scenario (Appendix A). As explained above, the preparation video encouraged them to enter an appropriate state of mind before listening to the death scenario. They were instructed to write diary entries on the survey platform, responding to the prompt: 'Please describe in detail the thoughts and

emotions you felt while imagining the scenario'. This prompt encouraged participants' emotional engagement with the death scenario, the theme of week one and two.

Participants in the control group viewed only the brief, two-minute, guided mindfulness 'preparation' video during which they were encouraged to tune into what they were sensing in their environment before focusing on their breathing and connecting with to their bodies (Appendix H). Additionally, participants from control and treatment groups received weekly 'Keep in Touch' (KIT) emails to support engagement and address any concerns or risks related to their well-being.

2.4.2 Week Two

In week two, the Qualtrics survey contained content similar to but distinct from week one. Participants in the treatment group were presented with the aforementioned 'preparation' video and an additional 'prompt' video (Appendix H) at the beginning of the survey. This was intended to orient participants' mindful state towards reflecting on their own death. Week two did not include the audio-recorded reading of the death scenario. The following diary prompt was given: 'If you did experience the event described in week 1, how do you think you would handle the final moments?'.

Participants in the control group viewed only the brief, two-minute, guided mindfulness 'preparation' video during which they were encouraged to tune into what they were sensing in their environment before focusing on their breathing and connecting with to their bodies (Appendix H). Additionally, participants from control and treatment groups received weekly 'Keep in Touch' (KIT) emails to support engagement and address any concerns or risks related to their well-being.

2.4.3 Week Three

In week three, Participants in the treatment group were presented with the 'preparation' video and an additional 'prompt' video (Appendix H). Week three included the death scenario. The following diary prompt was given: 'Again, imagining this event did happen to you, describe the life you led up to that point'. This question encouraged participants to engage in life review, an aspect of near-death experiences and post-traumatic growth (see *Design*), and the theme of week three and four.

Participants in the control group viewed only the brief, two-minute, guided mindfulness 'preparation' video during which they were encouraged to tune into what they were sensing in their environment before focusing on their breathing and connecting with to their bodies (Appendix H). Additionally, participants from control and treatment groups received weekly 'Keep in Touch' (KIT) emails to support engagement and address any concerns or risks related to their well-being.

2.4.4 Week Four (End of Treatment)

In week three, Participants in the treatment group were presented with two additional prompt videos. Week four did not include the death scenario. The following diary prompt was given: 'How do you feel your family would react if it did happen to you?'. This question prompted reflection on relationships as part of the life review.

Participants in the control group viewed only the brief, two-minute, guided mindfulness 'preparation' video during which they were encouraged to tune into what they were sensing in their environment before focusing on their breathing and connecting with to their bodies (Appendix H). Additionally, participants from control and treatment groups received weekly

'Keep in Touch' (KIT) emails to support engagement and address any concerns or risks related to their well-being.

2.4.5 Week Five and Six (Qualitative Interviews)

Four participants from the treatment group were invited to attend individual remote video call interviews following the four-week intervention. These participants were selected to capture those who experienced either the most or the least change on the outcome measures over four weeks. After all participants accepted, consent to audio record the interviews was requested from all participants who accepted the interview invitation. Audio recording allowed for the interviews to be transcribed and analysed qualitatively. Participants who were not invited for interviews received a debrief email and were offered a debrief phone call.

2.5 **Measures**

Experimental research in social psychology has explored participant reactions to reflecting on their mortality and death. In laboratory conditions, undertaking *death reflection manipulation* has been shown to facilitate outcomes indicative of identity integration when compared to a control condition (Blackie *et al.*, 2016). In previous studies, participants in the 'death reflection' condition were more likely to consider both positive and negative life experiences as equally important in shaping their current identity (as opposed to just positive life experiences). Participants in the death reflection condition were also more likely to regard other-serving values and self-serving values as equally important and were motivated to pursue growth-oriented than security-oriented needs. These findings suggest that death reflection motivates individuals to integrate conflicting aspects of their identity into a coherent self-concept. Given that identity integration is associated with higher well-being, the findings have implications for understanding the psychological benefits of death reflection.

The current study explored whether death reflection can impact participant wellbeing beyond laboratory conditions and over a longer period of time than previously studied. This preliminary study was intended to explore whether this kind of death reflection intervention was a viable option for further research into death reflection as a psychological therapy. The DRM was developed into a facilitated and self-directed practice which participants were encouraged to undertake daily over a period of four weeks. Participants were assessed on pre-post outcomes to assess the impact of death reflection on wellbeing and attitudes to death, psychological stress, and authenticity. Psychometric properties for the screening measure and outcome measures are described below.

2.5.1 Screening Measure

Psychological Distress

The *Clinical Outcomes in Routine Evaluation Outcome Measure* (CORE-10 v1.1; Barkham *et al.*, 2013) (Appendix E) was employed as a screening measure to help determine which participants met inclusion criteria (see *Screening* above). The *CORE-10 v1.1* is a subset of ten items from the Clinical Outcomes in Routine Evaluation – Outcome Measure (*CORE-OM*) (Evans *et al.*, 2002). The *CORE-10 v1.1* is pan-theoretical (i.e., not associated with a school of therapy), pan-diagnostic (i.e. not focused on a single presenting problem), and draws upon the views of what practitioners considered to be the most important generic aspects of psychological wellbeing health to measure (Barkham *et al.,* 2013). It was designed to be used for screening as well as over the course of treatment to track progress, with items covering anxiety, depression, trauma, physical problems, functioning and risk to self (Barkham *et al.,* 2013).

The measure's ten items, which are rated on a five-point scale, give a total clinical score of general functioning. Scores are presented as a total score (0 to 40) as well as a mean score (between 0 – 4). Higher scores indicate higher levels of general psychological distress, where a total score of 11 or above is within the clinically significant range. The *CORE-10 v1.1* does not have any subscales. Instead, it has a "Total Clinical Score" (TCS) between 0-40, with a higher TCS meaning higher levels of mental health difficulty/distress. As the *CORE-10 v1.1* measures global distress, it does not include symptoms of some specific disorders (e.g. compulsions in obsessive-compulsive disorder, avoidance of going out in panic disorder with agoraphobia).

Barkham *et al.* (2013) validated the *CORE-10 v1.1* in primary care patients as well as the general population, finding it had an internal reliability (alpha) of .9. Based on their analysis it was determined that scores of 11 or above were indicative of clinically significant psychological distress, and scores above 13 likely indicated depression, with a sensitivity and specificity of .92 and .72 respectively. The *CORE-10 v1.1* was reported to have good construct validity following findings from a confirmatory factor analysis: "The six-factor model had an RMSEA of .06 indicating a good fit between the hypothesised model and the data" (Lewis, 2016, p.113). The *CORE-10 v1.1* was also reported to have 'moderate' two-week re-test reliability (ICC=.83) (Lewis, 2016). Coates and colleagues (2019) reported that the CORE-10 v1.1 was correlated with the GAD-2 at .69 and with Whooley Questions at .64, showing moderate to strong convergent validity. Lewis (2016) reported the *CORE-10 v1.1* to have good discriminant validity.

2.5.2 Primary Outcome Measures

Wellbeing

The *Short Warwick–Edinburgh Mental Wellbeing Scale* (SWEMWBS; Appendix I) was employed to measure whether there were any changes in participants' levels of wellbeing as a result of death reflection (treatment group) or treatment as usual (control group). The *SWEMWBS* is a short version of the *Warwick–Edinburgh Mental Wellbeing Sca*le (WEMWBS) which was developed to enable the monitoring of mental wellbeing in the general population and the evaluation of projects, programmes and policies which aim to improve mental wellbeing (Clarke *et al.*, 2010). The *SWEMWBS* uses seven of the *WEMWBS*'s fourteen statements about thoughts and feelings, which relate more to functioning than feelings and so offer a slightly different perspective on mental wellbeing (Clarke *et al.*, 2010). The *SWEMWBS* (Appendix I) uses seven positively worded statements with five response categories (from 'none of the time' to 'all of the time') about thoughts and feelings to ask people about their experience over the past two weeks.

Adult research suggests that the SWEMWBS could detect clinically meaningful change (Collins *et al.* 2012; Maheswaran *et al.,* 2012). The measure was shown to have high internal consistency in the UK general population (Ng Fat *et al.,* 2017) and Danish (Koushede *et al.*, 2019) as well as in Swedish and in Norwegian adult populations. Test-retest reliability has not been reported for most populations. Test-retest reliability within 7-8 days after first completion was moderate in a UK population of 13–16-year-olds (Clarke *et al.*, 2010). Relevant to the current study, the SWEMWBS one-week test-retest reliability was high in a UK population of university students (Tennant *et al.*, 2007).

Attitudes to Death

The *Death Attitudes Profile - Revised* (DAP-R) (Appendix J) (Wong *et al.,* 1994) was used to measure whether there were any changes in participants' death attitudes, specifically *fear of death* and *death avoidance*, as a result of death reflection (treatment group) or treatment as usual (control group). The *DAP-R* is a measure for different attitudes to death. It is a 32-item measure composed of five dimensions, each of which have a different number of items. Items are in the form of statements related to attitudes to death, e.g. "I avoid death thoughts at all costs", "death is a natural aspect of life"). The measures' dimensions are elaborated as follows:

- *Approach Acceptance* (death is viewed as a passageway to a happy afterlife) (10 items).
- *Fear of Death* (negative thoughts and feelings about the state of death) (7 items).
- *Death Avoidance* (negative thoughts and feelings about the process of dying) (5 items).
- *Escape Acceptance* (death is viewed as an escape from a painful existence) (5 items).
- *Neutral Acceptance* (death is neither welcomed nor feared, but simply accepted as reality) (5 items).

Participants were asked to indicate the degree to which they agreed or disagreed with the statement by circling one the following:

- SA = strongly agree
- A = agree
- MA = moderately agree
- U = undecided
- MD = moderately disagree
- D = disagree
- SD = strongly disagree

Taken together, the DAP-R subscales have good to very good reliability (Wong *et al.,* 1994) and have been shown to be valid for a range of groups, including working age adults who made up the sample of the current study. Alpha coefficients of internal consistency and 4-week test-retest coefficients range from a low of .65 (Neutral Acceptance) to a high of .97 (Approach Acceptance). (Wong *et al.,* 1994). Stability coefficients range from a low of .61 (Death Avoidance) to a high of .95 (Approach Acceptance).

Inferential statistical analysis was undertaken using just the Fear of Death and Death Avoidance subscales as these subscales were most relevant to the research question. These subscales have been used reliably, independently of the other DAP-R subscales (Cozzolino *et al.*, 2014). The DAP-R was selected as a suitable measure for exploring the effects of death reflection, itself an existential intervention, due to its theoretical compatibility with Cozzolino's *dual-existential-systems model* (2006) and the DRM.

2.5.3 Secondary Outcome Measures

Depression, Anxiety, Stress

The *Depression, Anxiety, and Stress Scale* (DASS-21) (Appendix J) was used to measure whether there were any changes in participants' levels of depression, anxiety, or stress as a result of death reflection (treatment group) or treatment as usual (control group). The *DASS-21* is a 21-item inventory containing scales for depression, anxiety, and stress. Each of the three scales contains 7 items, divided into subscales with similar content (Lovibond & Lovibond, 1995). The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The stress scale is sensitive to levels of chronic non-specific

arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive and impatient. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items.

DASS-21 is based on a dimensional rather than a categorical conception of psychological disorder. The assumption on which DASS-21 development was based (and which was confirmed by the research data) is that the differences between the depression, anxiety, and the stress experienced by normal subjects and clinical populations are essentially differences of degree. DASS-21 therefore has no direct implications for the allocation of patients to discrete diagnostic categories postulated in classificatory systems such as the Diagnostic Statistics Manual of Mental Disorders (DSM-5th edition TR) (American Psychiatric Association, 2022) and International Classification of Diseases (ICD-11) (World Health Organisation, 2019).

Authenticity

The *State Authenticity Scale* or 'Real Sense of Self' (RSOS; Lenton *et al.*, 2013) (Appendix K) assessed the extent to which participants, at a particular moment, felt close to their real, true self. The *RSOS* depicted seven pairs of circles, varying in degree of overlap between *them, with* the left-hand circle in each pair representing "who you are right now", whereas the right-hand circle in each pair represented "your real self (i.e. who you truly are)". Participants were instructed to indicate which pair of circles "best represents how close you feel at this moment to your *real self*". Participants selected the pair of circles that best represented how close they generally feel to their real self, ranging from 1 (non-overlapping circles) to 7 (strongly overlapping circles). The *RSOS* was used descriptively to analyse whether there was any change in participants' level of authenticity throughout death reflection

(treatment group) or treatment as usual (control group). However, the RSOS was not used in inferential statistical analysis due to questions about its theoretical compatibility with primary outcome measures.

2.5.4 Qualitative Interview Schedule

Research aim 3 (see *Introduction*) of the current study was to elicit how participants made sense of their experiences of the intervention; exploring how participants experienced the process of death reflection and how they interpreted or made sense of the outcomes or perceived changes, if any, following the completion of the intervention. IPA resources (Eatough & Smith, 2017) and a range of studies using IPA (Eatough *et al.*, 2008; Rake & Paley, 2009; Kassie et al, 2021) were consulted when designing the qualitative interview schedule to improve understanding of IPA methodology and ensure collection of good quality data. The interview schedule (Appendix M) covered a comprehensive description of participants' experiences of the intervention, the meaning of these experiences for participants, and how they made sense of them. The questions were used to guide rather than dictate the course of the interview.

Participants were treated as experiential experts, and any novel areas of inquiry they opened up were followed. The researcher was careful not to impose their understanding of experiences related to death on the participants' accounts. Open-ended questions were used to maintain a careful balance between guiding and being led by participants. The interview schedule was brief and used 'funnelling'; starting with broader, general, and less invasive questions that allowed participants to set the parameters of the topic before following up with gradually more specific questions where it was judged suitable. The interviews began with open-ended questions including followed by prompts. This would allow the researcher the

follow up and clarify meanings related to the relevant aspects of the participants' responses. The purpose of this approach was to elicit the participant's perspective with as few prompts as possible, as in other existential research undertaken qualitatively (Bruce *et al.*, 2011). The researcher planned to verify their interpretations of the participants' responses in the course of the interview while paying attention to embodiment.

2.6 Data Collection

The data collection period for both quantitative and qualitative data lasted approximately six weeks from November to December 2023. Previous to this, prospective participant consent forms (Appendix C), demographic information forms (Appendix D), and screening questionnaires (Appendix E) were completed and stored on a secure database that only the researcher had access to. Regarding quantitative data, once a participant submitted their questionnaires and reflective journal responses via the Qualtrics survey platform, their data was automatically entered into a spreadsheet and stored securely. Following the end of the data collection phase and closure of the surveys, this data was transferred into an SPSS database ready for data analysis.

The four-week intervention constituted the quantitative data collection period. The two weeks directly following that constituted the qualitative data collection period. On the basis of the quantitative data, participants who showed both the most change and the least change with respect to outcome measures were identified to be invited for interviews. Towards the end of the four weeks, participants were contacted over the telephone to discuss what the interviews involved and to offer them the chance to participate. Written consent had been obtained earlier as part of screening so verbal consent to participate in interviews was considered sufficient. Data collection lasted two weeks and resulted in six hours of data to analyse. The interviews

were conducted by the researcher remotely via Microsoft Teams. Interviews were recorded, transcribed verbatim, and saved on a secure database temporarily before being destroyed.

2.7 Data Analysis

Quantitative Data Analysis

After formulating the research question *What are the Potential Psychological Benefits of Death Reflection over Time?*, a 'mixed methods' approach was chosen, using both quantitative and qualitative analytic methods. Quantitative statistical data analysis was used to address the previously formulated research aim 2 (To pilot, run, and evaluate the four-week DRM-based intervention using a controlled design and collecting psychometric process and outcome measures). Based on findings from previous studies in this area, statistical analysis investigated whether the death reflection manipulation intervention was associated with changes in wellbeing and attitudes to death (specifically fear of death and death avoidance).

Statistical analysis was carried out using IBM SPSS Version 28. Descriptive statistics were calculated for all outcome measures: SWEMWBS (wellbeing), DAP-R (death attitudes), DASS-21 (depression, anxiety, stress), and RSOS (authenticity). Descriptive statistics were calculated for all time points (Week 1/baseline, Week 2, Week 3, Week 4/end of Treatment). Sample size dictated which method of statistical analysis was most suitable.

Where data met parametric assumptions, a mixed-design Analysis of Variance (ANOVA) was employed as it involves both a between subjects factor (Group) and a within subjects factor (Time). This allowed for comparison between treatment and control groups while allowing for comparison between individual outcome measure scores across time points. The mixed-design ANOVA was conducted for all cases with complete (i.e. no missing) data.

However, some amount of missing data was inevitable given the relatively long duration of the intervention and the high likelihood of participants failing to complete all data points on the outcome measures. For this reason, where data did not meet parametric assumptions, generalised estimating equations (GEE) analysis was chosen as it allows for the analysis of cases with missing data.

For the first research hypothesis, which predicted that death reflection would be associated with increased levels of wellbeing, a parametric model was used to investigate whether time (baseline and end of treatment) interacted with group (treatment and control groups).

For the second research hypothesis, which predicted that death reflection would be associated with increased levels of fear of death, as data did not meet parametric assumptions, a non-parametric rank-based analysis was conducted as an alternative method to investigate the intervention effect on the fear of death outcome measure. GEE tests were conducted to account for all cases, including cases with missing data.

For the third research hypothesis, which predicted that death reflection would be associated with increased levels of death avoidance, a parametric model was used to investigate whether time (baseline and end of treatment) interacted with group (treatment and control groups). A mixed-design ANOVA was used to account for the between-subject (group) and within-subject (time) components of our analysis. The mixed-design ANOVA was conducted for cases with complete (i.e. no missing) data. GEE tests were conducted to account for all cases, including cases with missing data.

For the fourth research hypothesis, which predicted that death reflection would be associated with reduced levels of depression, anxiety, and stress, a parametric model was used to investigate whether time (baseline and end of treatment) interacted with group (treatment

and control groups). A mixed-design ANOVA was used to account for the between-subject (group) and within-subject (time) components of our analysis. The mixed-design ANOVA was conducted for cases with complete (i.e. no missing) data. GEE tests were conducted to account for all cases, including cases with missing data.

Qualitative Data Analysis

Qualitative data analysis was used to address the previously formulated research aim 3 (to elicit how participants made sense of their experiences of the intervention using a qualitative approach). IPA was judged to be more appropriate than other qualitative approaches (e.g. thematic analysis or grounded theory). This was due to its focus on the convergences and divergences between rich individual, idiographic accounts, its interpretative element, and its flexible guidelines that can be adapted by researchers in light of their research aims (Smith, 2004). Guidelines for the key stages in conducting IPA analysis (Appendix N), as set out in a textbook (Tindall, 2009) were not followed prescriptively but rather used as general guidelines to engage sensitively and open-mindedly with the topic, the participants, and the context of the research. These guidelines relate both to the processes of research (e.g., moving from the particular to the shared, and from the descriptive to the interpretative) and to the principles of research (e.g., a desire to understand the participant's point of view) in IPA (Tomkins, 2017). The guidelines and previous IPA studies (e.g. Eatough *et al.*, 2008; Rake & Paley, 2009; Kassie *et al.*, 2021) were consulted in drawing up an interview schedule (Appendix M).

Stages used throughout the analysis were navigated as follows. Firstly, each transcript was read several times with the left-hand margin being used to note significant or interesting details. With each reading, there was a greater level of immersion in the data and responsiveness to what was being said. Secondly, after time away, the transcript was returned

to. The right-hand margin was used to develop initial notes into more specific themes or phrases, referring to psychological concepts (e.g., coping mechanism, trauma response) and allowing existing psychological theory to be supported, modified, and/or challenged. Participants' accounts brought to light issues unanticipated by the researcher. The researcher was careful to be thorough and painstaking in the early stages. Thirdly, the data was further distilled by building connections between preliminary themes and clustering them into *master themes*. Smith (2004) suggests that researchers "imagine a magnet with some of the themes pulling others in and helping to make sense of them" (p. 71). A table was produced showing superordinate and subordinate themes with illustrative verbatim extracts (Appendix O). This table was the result of an iterative process of moving between the various analytic stages to ensure the preservation of the integrity of the participant's words. Fourthly, a narrative account of the interplay between the interpretative activity of the researcher and the participant's account of the experience in their words was produced. The researcher provided a close textual reading of the participants' accounts, moving between description and different levels of interpretation, at all times clearly differentiating between them. When writing up qualitative results, it was decided to balance between a focus on participants' accounts synthesised under themes and person by person analysis, as other IPA research has done effectively (Eatough *et al.*, 2008).

2.8 Ethical Considerations

The researcher applied for ethical approval (Appendix P) including completing a risk assessment of the research (Appendix Q). Ethical approval was granted by University of Essex Research Ethics Committee (Appendix R). In previous studies using similar interventions, a strong emotional and physical reaction has been observed in participants (Cozzolino *et al.*, 2004) which was considered prior to seeking ethical approval. Elements of the *Death Scenario*

and the DAP-R questionnaire may have posed a risk to participant welfare through emotional distress. The researcher took steps to limit and manage this risk through screening, briefing participants before the intervention, and offering de-briefing for participants after the intervention. The researcher received support with risk assessment/management from clinically trained supervisors.

Participants wished to talk about emotive experiences in their interviews, having been exposed to varying levels of distress. KIT emails allowed the researcher to monitor participants' levels of distress throughout the intervention. Participants were able to ask questions before and after the intervention and could withdraw at any point. A possible 12-month follow-up was built into the intervention for next year's cohort of doctoral students to pick up. Standardised outcome measures helped to record participants' levels of distress in case any appropriate level of support was needed. The researcher did not anticipate any risk to themselves. As this study took place in the latter stages of the Covid-19 pandemic, the researcher followed university guidelines when recruiting participants and followed the relevant procedures for undertaking interviews, depending on what the advice was at the time. For feasibility purposes, the intervention was undertaken remotely, which allowed for a possible return to Covid-19 restrictions and social-distancing.

2.9 Dissemination

The current study was written up as a doctoral thesis. Participants will have the option to be contacted via email to be informed about the results. It is hoped that this research will be disseminated to researchers to add to the evidence base on existential psychotherapy interventions. The researcher will aim to have their findings published in clinical-based journals; *Omega* and *Death Studies* may be suitable for this piece of research. Once this

research has been completed, the researcher aims to submit a proposal to present their research at the British Psychological Society's annual conference. As part of presenting this research, the researcher has identified a number of opportunities for interdisciplinary disseminations of this research. These include the findings of the current study being discussed as part of bereavement lessons in schools, a petition for which reached 10,000 signatures in February 2023 (https://www.bbc.co.uk/news/uk-england-shropshire-64801232). A request has also been made for this research to be shared as part of postgraduate nursing training at the University of Essex.

There is a scarcity of studies about how existential issues are understood, managed and treated in palliative care settings (Henoch and Danielson, 2009). One of the study participants discussed the possibility of this research being disseminated in hospices through *Compassionate Workplaces*, an initiative that advocates employees feel supported through the ups and downs of life by colleagues, managers and institutional procedures. This is a possible method of dissemination, permitting the agreement of the participant, given that it would involve sharing their private information in a work context.

2.10 Chapter Summary

Building on the background and rationale for the current study, presented in the introduction and systematic literature review, this chapter explained the practical steps taken to explore what the potential benefits of death reflection over time were. This began with a critical discussion of the epistemological positioning of the current research, related to both previous death reflection research (Cozzolino *et al*. 2004) and the choice of a mixed methods approach to address the research question. A rationale was provided for the variables included the choice of design (including a detailed account of how the DRM was adapted) and the analyses conducted. Procedures for recruitment and screening were laid out before

the delivery of and procedures involved in the intervention were discussed. It was important to explain screening procedures and outcome measures in detail before the approach taken to data analysis was explained in relation to each research hypothesis. Finally, ethical considerations and thoughts on disseminating this research were discussed.

3 Results Chapter

3.1 Chapter Introduction

The current chapter outlines the results of the quantitative and qualitative analyses undertaken to investigate the potential psychological benefits of death reflection over time. The chapter will begin by stating the primary and secondary outcome measures of the research before demographic information for the quantitative sample is presented in tabular form. Quantitative results will then be presented, outcome by outcome; detailing descriptive statistics and statistical analyses for each outcome. Turning next to qualitative results, the demographics of the qualitative sample will be presented in a table before qualitative findings are presented according to superordinate and subordinate themes. The chapter will conclude with a chapter summary.

3.2 Analysis

In exploring the psychological benefits of death reflection over time, the primary outcomes of the research were wellbeing, fear of death, and death avoidance. The secondary outcomes were depression, anxiety, stress, and authenticity. Authenticity was used purely as a descriptive outcome measure and not included in statistical analysis.

3.3 Quantitative Results

3.3.1 Descriptive Statistics

Descriptive statistics and for all 25 participants included in analysis are as follows. Participants varied in age with a median age of 25 (range = 20 – 55, *M* = 30.00, *ME* = 25.00, *SD* = 10.145) (see *Table 2* below). The sample was mostly female (males = 8, females = 17). There was a relatively wide range in years of education (range = 7 – 22, *M* = 12.28, *ME* = 11.00, *SD* = 4.677). The sample was diverse in terms of ethnicity (range = 1 – 11, *M* = 6.96,

ME = 8.00, *SD* = 3.409), being predominantly Indian (24%), followed by Turkish (16%), Chinese (12%), White Irish (12%), Pakistani (8%), White South African (8%), White British (8%), Black African (4%), White Italian (4%), White Spanish (4%). Participants varied in terms of religious belief (range = 1 – 8, *M* = 2.92, *ME* = 3.00, *SD* = 1.441) with most participants identifying as Spiritual (32%), followed by Atheistic (28%), Christian (20%), Muslim (16%), and Agnostic (4%).

3.3.2 Table 2

Descriptive Statistics for Quantitative Sample

Demographic	Treatment (*n* = 15)	Control (*n* = 10)	Total
Age			
n	15	10	25
Mean (SD)	32.87 (5.85)	27.1 (4.968)	30.00 (10.145)
Median	31	24	25.00
Range	35	32	35.00
Gender, *n* (%)			
Female	9 (60%)	8 (80%)	17 (68%)
Male	6 (40%)	2 (20%)	8 (32%)
Ethnicity, *n* (%)			
White British	1 (6.66%)	1 (10%)	2 (8%)
White Irish	3 (20%)	-	3 (12%)
White Spanish	1 (6.66%)	-	1 (4%)
White Italian	-	1 (10%)	1 (4%)
White South African	1 (6.66%)	1 (10%)	2 (8%)
Black African	1 (6.66%)	-	1 (4%)
Asian Indian	2 (13.33%)	4 (40%)	6 (24%)
Asian Pakistani	-	2 (20%)	2 (8%)
Asian Chinese	2 (13.33%)	1 (10%)	3 (12%)
Turkish	4 (26.66%)	-	4 (16%)
Belief System, *n*(%)			
Atheist	4 (26.66%)	3 (30%)	7 (28%)
Agnostic	1 (6.66%)	-	1 (4%)
Spiritual	5 (33.3%)	3 (30%)	8 (32%)
Christian	4 (26.66%)	1 (10%)	5 (20%)
Muslim	1 (6.66%)	3 (30%)	4 (16%)
Years of Education			
Mean (SD)	11.67 (3.24)	12.2 (3.43)	12.28 (4.677)
Median	11	10.5	11.00
Range	15	13	15.00
Occupation, *n* (%)			
Student	6 (40%)	7 (70%)	13 (52%)
Self-Employed	-	1 (10%)	1 (4%)
Employed PT	1 (6.66%)	5 (50%)	6 (24%)
Employed FT	8 (53.33%)	3 (30%)	11 (44%)

Note – A number of participants were both students and employed part time.

***n*:** Number of participants.
*Years of Education: Years in formal education beginning including secondary school and including professional qualifications.
*Employed PT: Part time
*Employed FT: Full time

3.3.3 Wellbeing

3.3.4 Descriptive Statistics for Wellbeing

At baseline, (*n* = 23 *due to two participants with missing data, *M* = 14.00, *ME* = 14.00, *SD* = 3.451) (Appendix S). At end of treatment, (*n* = 21 *due to four participants with missing data, *M* = 14.52, *ME* = 15.00, *SD* = 3.140) (Appendix W). The interaction plot showed that treatment and control groups had similar medians at baseline while there was a tendency for divergence between baseline and end of treatment (Appendix Y). Due to the small sample size and the possibility of outliers, visual interpretation of interaction plots for all outcomes focused on the median as opposed to the mean. Although this tendency for divergence was minor it suggested a trend for a treatment effect over a longer period of time. The box plot showed scores were narrowly distributed with two positive extreme scores in the treatment group at end of treatment (Appendix Z).

A mixed-design ANOVA, to account for group and treatment effects, was conducted to examine the effects of death reflection (treatment vs control) on Wellbeing in 20 participants (treatment *n* = 12, control *n* = 8). Regarding statistical assumptions, there was homogeneity of variances between groups, as assessed by the Levene's test for equality of variances [F(1,18) = 0.277, *p* = 0.841]. Due to the small sample size, determining the distribution of the variable Wellbeing was important for choosing an appropriate statistical method. A Shapiro-Wilk test was performed and did not show evidence of non-normality for Wellbeing at baseline (W = 0.876, *p* = 0.082) and at end of treatment (W = 0.924, *p* = 0.118). Based on this outcome, and after visual examination of the histogram and box plot for

Wellbeing, a parametric test was found to be appropriate. As this was a 2x2 ANOVA, there was no sphericity to be checked.

The mixed-design ANOVA showed neither a significant interaction effect for Group and Time [F(1,18) = 2.2895, *p* = 0.148, η2 = 15.504] nor for Group; the between-subjects effect [F(1,18) = 0.1484, *p* = 0.705, η2 = 2.604] nor for Time; the within-subjects effect [F(1,18) = 0.0301, *p* = 0.864, η2 = 0.204]. The effect sizes (ges) for Group and Time interaction (0.0342), Group (0.006), and Time (0.0005) were modest, minimal, and negligible, respectively.

A generalised estimating equations (GEE) analysis was conducted to investigate the impact of group (treatment vs control) and time (Baseline and End-of-Treatment) on Wellbeing. Statistical assumptions were met, as cases were independent within subjects and independent between subjects. The GEE analysis employed an independence correlation structure with an intercept estimate of *M* = 9.89 (*SE* = 2.65).

The coefficient for the Group (control group) suggested a non-significant impact on Wellbeing compared to the treatment group, (β = 0.730, *SE* = 1.505, Wald Chi-Square = 0.24, *p* = 0.628). The coefficient for Time (End-of-Treatment) indicated a non-significant positive impact on Wellbeing, (β = 1.516, *SE* = 0.836, Wald Chi-Square = 3.29, *p* = 0.070). The interaction between Group (control group) and Time (End-of-Treatment), while non-significant, approached significance suggesting a potential differential effect on Wellbeing between treatment and control groups at the end of treatment, (β = -2.586, *SE* = 1.495, Wald Chi-Square = 2.99, *p* = 0.084).

In summary, findings from mixed-design ANOVA analysis indicated no significant difference in Wellbeing between treatment and control groups. The results suggested a lack of significant main effects for Group and Time on Wellbeing. While the Group and Time

interaction did not reach conventional levels of significance, its presence indicated the potential differential impact of Time on Wellbeing that varied between treatment and control groups. GEE analysis revealed a potential impact of Time on Wellbeing, with the main effect of Group and the Group and Time interaction approaching significance. This may indicate the presence of false negatives in the mixed ANOVA findings for Wellbeing.

3.3.5 Fear of Death

3.3.6 Descriptive Statistics for Fear of Death

At baseline, (n = 23 *due to two participants with missing data, M = 20.43, ME = 21.00, SD = 4.230) (Appendix S). At end of treatment, (n = 20 *due to five participants with missing data, M = 23.30, ME = 23.00, SD = 2.003) (Appendix W). The interaction plot showed that the treatment group had a higher median score for Fear of Death at baseline while there was a tendency for divergence between baseline and end of treatment (Appendix Z). The box plot showed a modest distribution of scores for both groups at baseline with a narrow distribution of scores at end of treatment (Appendix AA).

Assumptions were tested for conducting a mixed-design ANOVA to account for group and treatment effects on Fear of Death in 20 participants (treatment n = 12, control n = 8). A Shapiro-Wilk test did not show evidence of non-normality for Fear of Death at baseline (W = 0.950, p = 0.389) and at end of treatment (W = 0.949, p = 0.382). As this was a 2x2 ANOVA, there was no sphericity to be checked. However, Levene's test for homogeneity of variances yielded a significant result [F(1,18) = 2.93, p = 0.0474], indicating a statistically significant difference in variances between groups.

As all parametric assumptions were not met, a non-parametric rank-based analysis was conducted with Fear of Death as the dependent variable and Time and Group as

independent variables. The Relative Treatment Effect (RTE), Wald-Type Statistic (WTS), ANOVA-Type Statistic (ATS), and Modified ANOVA-Type Statistic for the Whole-Plot Factors were examined. A table) presents the Relative Treatment Effect (RTE) with Rank Means, Number of Observations (Nobs), and RTE values for different combinations of Group and Time (Appendix AJ).

Wald-Type Statistic (WTS):

The Wald-Type Statistic (WTS) assessed the significance of Group, Time, and the interaction between Group and Time.

Group: $\chi^2(1) = 4.35$, $p = 0.03698$

Time: $\chi^2(1) = 9.16$, $p = 0.00247$

Group:Time Interaction: $\chi^2(1) = 0.59$, $p = 0.44226$

ANOVA-Type Statistic (ATS):

The ANOVA-Type Statistic (ATS) results mirrored the WTS findings:

Group: $F(1) = 4.35$, $p = 0.03698$

Time: $F(1) = 9.16$, $p = 0.00247$

Group:Time Interaction: $F(1) = 0.59$, $p = 0.44226$

Modified ANOVA-Type Statistic for the Whole-Plot Factors:

An additional Modified ANOVA-Type Statistic was computed for the whole-plot factor, Group, indicating potential significance: Group: $F(1, 16.8) = 4.35$, $p = 0.0526$.

A generalised estimating equations (GEE**)** analysis was conducted to investigate the impact of Group (treatment vs control) and Time (Baseline and End-of-Treatment) on Fear of

Death. Statistical assumptions were met, as cases were independent within subjects and independent between subjects. The GEE analysis used an independence correlation structure with an intercept estimate of *M* = 10 (*SE* = 3.58).

The coefficient for the Group (control group) suggested a non-significant impact on Fear of Death compared to the treatment group, (β = -2.36, *SE* = 1.54, Wald Chi-Square = 2.34, *p* = 0.126). The coefficient for Time (End-of-Treatment) indicated a significant positive impact on Fear of Death, (β = 2.48, *SE* = 1.21, Wald Chi-Square = 4.19, *p* = 0.041). The interaction between Group (control group) and Time (End-of-Treatment), although non-significant, approached significance suggesting no significant differential effect on Fear of Death between treatment and control groups at the end of treatment, (β = 1.02, *SE* = 1.60, Wald Chi-Square = 0.41, *p* = 0.521).

In summary, results from non-parametric analysis found significant effects for Group and Time, with a potential trend towards significance for the Group:Time interaction. GEE analysis revealed a significant main effect of Time on Fear of Death. The main effects for Group was not significant and the Group:Time interaction approached significance. This indicated substantial changes in Fear of Death over time, however these changes did not differ significantly between treatment and control groups.

3.3.7 Death Avoidance

3.3.8 Descriptive Statistics for Death Avoidance

At baseline, (*n* = 23 *due to two participants with missing data, *M* = 13.43, *ME* = 14.00, *SD* = 3.342) (Appendix S). At end of treatment, (*n* = 20 *due to five participants with

missing data, *M* = 15.35, *ME* = 16.00, *SD* = 3.200) (Appendix W). The interaction plot showed that the treatment group had a (perhaps significantly) higher median score for Death Avoidance at baseline while there was a tendency for divergence between baseline and end of treatment (Appendix AB). The box plot showed a narrow distribution of scores for both groups at baseline and end of treatment with two extreme values for the treatment group at baseline and one extreme value at end of treatment (Appendix AC).

Assumptions were tested for conducting a mixed-design ANOVA to account for group and treatment effects on Death Avoidance in 20 participants (treatment $n = 12$, control $n = 8$). There was homogeneity of variances between groups, as assessed by the Levene's test for equality of variances [$F(1,17) = 0.0761$, $p = 0.972$]. A Shapiro-Wilk test did not show evidence of non-normality for Death Avoidance at baseline ($W = 0.913$, $p = 0.085$) and at end of treatment ($W = 0.952$, $p = 0.425$). Based on this outcome, and after visual examination of the box plot for Death Avoidance (Appendix 6), a parametric test was found to be appropriate. As this was a 2x2 ANOVA, there was no sphericity to be checked.

The mixed-design ANOVA showed that the main effect of Group, although non-significant, approached significance [$F(1, 17) = 3.12$, $p = 0.095$, $\eta^2 = 0.11$], indicating a potential difference between treatment and control groups in Death Avoidance, with a moderate effect size ($\eta^2 = 0.11$). The main effect of Time, while non-significant, approached significance, [$F(1, 17) = 4.38$, $p = 0.052$, $\eta^2 = 0.07$], suggesting a potential difference in Death Avoidance across baseline and end-of-treatment, with a small to moderate effect size ($\eta^2 = 0.07$). The interaction between Group and Time was not significant, [$F(1, 17) = 0.06$, $p = 0.804$, $\eta^2 = 0.001$], indicating that the change in Death Avoidance over time did not significantly differ between treatment and control groups, with a negligible effect size ($\eta^2 = 0.001$). In summary, findings revealed that the main effect for Group and Time, although

non-significant, approach significance. This suggested possible differences in Death Avoidance between treatment and control groups and across time points. However, the interaction effect was not significant, indicating that the change in Death Avoidance over time did not differ significantly between the two groups.

A generalised estimating equations (GEE) analysis was conducted to investigate the impact of group (treatment vs control) and time (Baseline and End-of-Treatment) on Death Avoidance. Statistical assumptions were met, as cases were independent within subjects and independent between subjects. GEE analysis employed an independence correlation structure with an intercept estimate of $M = 8.84$ ($SE = 2.05$).

The coefficient for the Group (control group) approached significance, suggesting a potential impact on Death Avoidance compared to the Treatment group, ($\beta = -2.175$, $SE = 1.312$, Wald Chi-Square = 2.75, $p = 0.09745$). The coefficient for Time (End-of-Treatment) was significant, indicating the substantial impact of Time on Death Avoidance, ($\beta = 2.131$, $SE = 0.630$, Wald Chi-Square = 11.43, $p = 0.00072$). However, the statistical magnitude of the effect ($\eta^2 = 0.07$) did not match with interpretation in so far as GEE analysis showed a slight increase over time that was not confirmed by the mixed ANOVA analysis. The interaction between Group (control group) and Time (End-of-Treatment) was not significant, suggesting that the changes in Death Avoidance over time did not significantly differ between treatment and control groups, ($\beta = -0.492$, $SE = 1.630$, Wald Chi-Square = 0.09, $p = 0.76270$).

In summary, while results from mixed-design ANOVA analysis were non-significant, the main effects for Group and Time approached significance, suggesting potential differences in Death Avoidance between treatment and control groups and across time points. However, the interaction effect was not significant, indicating that the change in Death Avoidance over time did not differ significantly between the two groups. GEE analysis

showed a significant effect of Time on Death Avoidance, while the main effect for Group and the interaction effect for Group and Time were not significant.

3.3.9 Depression

3.3.10 Descriptive Statistics for DASS-21 Depression

At baseline, (*n* = 23 *due to two participants with missing data, *M* = 8.52, *ME* = 8.00, *SD* = 7.769) (Appendix S). At end of treatment, (*n* = 20 *due to five participants with missing data, *M* = 5.70, *ME* = 3.00, *SD* = 7.658) (Appendix W). The association shown on the interaction plot was not meaningful and the box plot showed no notable difference between groups (Appendix AD; AE).

Assumptions were tested for conducting a mixed-design ANOVA to account for group and treatment effects on Depression in 20 participants (treatment *n* = 12, control *n* = 8). There was homogeneity of variances between groups, as assessed by the Levene's test for equality of variances [F(1,17) = 0.149, *p* = 0.930]. A Shapiro-Wilk test did not show evidence of non-normality for Death Avoidance at baseline (W = 0.873, *p* = 0.091) and at end of treatment (W = 0.780, *p* = 0.112). Based on this outcome, and after visual examination of the box plot for Depression (Appendix 8), a parametric test was found to be appropriate. As this was a 2x2 ANOVA, there was no sphericity to be checked.

The mixed-design ANOVA showed the main effect of Group was not significant, [F(1, 17) = 0.0567, *p* = 0.814642, η^2 = 0.00287], indicating no substantial difference between treatment and control groups in Depression, with a negligible effect size (η^2 = 0.11). The main effect of Time was not significant, [F(1, 17) = 1.8163, *p* = 0.195440, η^2 = 0.01456], suggesting no significant change in Depression levels across baseline and end of treatment. The interaction effect between Group and Time was not significant, [F(1, 17) = 0.4597, *p* =

0.506872, $\eta^2 = 0.00373$], indicating that the change in Depression levels over time did not differ significantly between the Control and Treatment groups, with a negligible effect size ($\eta^2 = 0.001$).

A generalised estimating equations (GEE) analysis was conducted to investigate the impact of group (treatment vs control) and time (Baseline and End-of-Treatment) on Death Avoidance. Statistical assumptions were met, as cases were independent within subjects and independent between subjects. The GEE analysis employed an independence correlation structure with an intercept estimate of $M = 56.6$ ($SE = 14.8$).

The coefficient for the Group (control group) was not significant, suggesting no significant impact on Depression compared to the Treatment group, ($\beta = 0.603$, $SE = 3.174$, Wald Chi-Square = 0.04, $p = 0.85$). The coefficient for Time (End-of-Treatment) was not significant, indicating no significant change in Depression by the end of treatment, ($\beta = -2.119$, $SE = 1.696$, Wald Chi-Square = 1.56, $p = 0.21$). The interaction between Group (control group) and Time (End-of-Treatment) was not significant, suggesting that the changes in Depression over time did not significantly differ between treatment and control groups, ($\beta = -1.770$, $SE = 2.984$, Wald Chi-Square = 0.35, $p = 0.55$).

In summary, results from mixed-design ANOVA and GEE analyses revealed no significant main effects for either Group or Time, as well as no significant interaction effect for Group and Time on Depression. These findings suggest a consistent level of Depression across the control and treatment groups and minimal change in Depression over time.

3.3.11 Anxiety

3.3.12 Descriptive Statistics for DASS-21 Anxiety

At baseline, (n = 23 *due to two participants with missing data, M = 7.13, ME = 4.00, SD = 8.198) (Appendix S). At end of treatment, (n = 20 *due to five participants with missing data, M = 4.30, ME = 2.00, SD = 6.400) (Appendix W). The interaction plot showed that the control group had a higher median score for Anxiety at baseline while both treatment and control group levels of anxiety reduced in parallel between baseline and end of treatment (Appendix AF). The box plot showed a wider distribution of anxiety scores in the control group (wider at baseline than end of treatment) compared to the treatment group and no extreme values for either group (Appendix AG).

Assumptions were tested for conducting a mixed-design ANOVA to account for group and treatment effects on Anxiety in 20 participants (treatment n = 12, control n = 8). There was homogeneity of variances between groups, as assessed by the Levene's test for equality of variances [$F(1,17) = 2.42$, $p = 0.0828$]. A Shapiro-Wilk test did not show evidence of non-normality for Death Avoidance at baseline ($W = 0.820$, $p = 0.104$) and at end of treatment ($W = 0.683$, $p = 0.093$). Based on this outcome, and after visual examination of the box plot for Depression (Appendix AE), a parametric test was found to be appropriate. As this was a 2x2 ANOVA, there was no sphericity to be checked.

The mixed-design ANOVA showed the main effect of Group was not statistically significant, [$F(1, 17) = 2.2202$, $p = 0.15454$, $\eta^2 = 0.105062$], indicating no significant difference in Anxiety between treatment and control groups, with a small effect size ($\eta^2 = 0.105062$). The main effect of Time was significant, [$F(1, 17) = 5.2357$, $p = 0.03521$, $\eta^2 = 0.030196$], suggesting a significant change in Anxiety between baseline and end-of-treatment, with a small effect size ($\eta^2 = 0.030196$). The interaction between Group and Time was not

significant, [F(1, 17) = 0.0242, p = 0.87825, η^2 = 0.000144], suggesting that the change in Anxiety over time did not significantly differ between treatment and control groups, with a very small effect size (η^2 = 0.001).

A generalised estimating equations (GEE) analysis was conducted to investigate the impact of group (treatment vs control) and time (Baseline and End-of-Treatment) on Anxiety. Statistical assumptions were met, as cases were independent within subjects and independent between subjects. The GEE analysis employed an independence correlation structure with an intercept estimate of M = 45.2 (*SE* = 10.5).

The coefficient for the Group (control group) trended toward significance, suggesting that being in the control group was associated with higher levels of Anxiety, although this trend was not significant (β = 6.54, *SE* = 3.57, Wald Chi-Square = 3.36, p = 0.06681). The coefficient for Time (End-of-Treatment) trended toward significance, suggesting a potential but non-significant reduction in Anxiety at End of Treatment when compared to Baseline, (β = -1.90, *SE* = 1.05, Wald Chi-Square = 3.26, p = 0.07087). The interaction between Group (control group) and Time (End-of-Treatment) was not significant, suggesting that the changes in Anxiety over time did not significantly differ between treatment and control groups, (β = -2.46, *SE* = 2.58, Wald Chi-Square = 0.91, p = 0.34018).

In summary, results from mixed-design ANOVA revealed a significant main effect of Time on Anxiety levels, suggesting a change over the course of the intervention. However, the main effect of Group and the interaction for Group and Time were not statistically significant. These findings imply that, while Anxiety levels varied over time, the intervention did not significantly impact Anxiety differently between the Control and Treatment groups. GEE analysis found that both Group and Time trended toward significance, suggesting

potential effects. However, the interaction effect for Group and Time was not statistically significant.

3.3.13 Stress

3.3.14 Descriptive Statistics for DASS-21 Stress

At baseline, (n = 23 *due to two participants with missing data, M = 13.39, ME = 14.00, SD = 8.100) (Appendix S). At end of treatment, (n = 20 *due to five participants with missing data, M = 11.90, ME = 12.00, SD = 9.657) (Appendix W). The association shown on the interaction plot was not meaningful and the box plot showed no notable difference between groups (Appendix AH; AI).

Assumptions were tested for conducting a mixed-design ANOVA to account for group and treatment effects on Stress in 20 participants (treatment n = 12, control n = 8). There was homogeneity of variances between groups, as assessed by the Levene's test for equality of variances [$F(1,17) = 1.38$, $p = 0.264$]. A Shapiro-Wilk test did not show evidence of non-normality for Stress at baseline ($W = 0.970$, $p = 0.776$) and Stress at end of treatment ($W = 0.937$, $p = 0.233$). Based on this outcome, and after visual examination of the box plot for Stress (Appendix AI), a parametric test was found to be appropriate. As this was a 2x2 ANOVA, there was no sphericity to be checked.

The mixed-design ANOVA showed the main effect of Group was not significant, [$F(1, 17) = 0.182$, $p = 0.675046$, $\eta^2 = 0.00852$], indicating so substantial difference in Stress between treatment and control groups, with a very small effect size. The main effect of Time was not significant, [$F(1, 17) = 0.216$, $p = 0.648174$, $\eta^2 = 0.00250$], suggesting no substantial change in Stress over time, with a very small effect size. The interaction between Group and Time was not significant, [$F(1, 17) = 0.580$, $p = 0.456618$, $\eta^2 = 0.00668$], suggesting that the

change in Stress over time did not significantly differ between treatment and control groups, with a small effect size.

A generalised estimating equations (GEE) analysis was conducted to investigate the impact of group (treatment vs control) and time (Baseline and End-of-Treatment) on Death Avoidance. Statistical assumptions were met, as cases were independent within subjects and independent between subjects. The GEE analysis employed an independence correlation structure with an intercept estimate of $M = 74$ ($SE = 15.6$).

The estimate of 2.460 suggested a potential increase in Stress for the control group, although the effect was not significant ($\beta = 2.460$, $SE = 3.491$, Wald Chi-Square = 0.50, $p = 0.48$). The estimate of -0.595 indicated a potential reduction in Stress at the End-of-Treatment, but the effect was not statistically significant, ($\beta = -0.595$, $SE = 2.428$, Wald Chi-Square = 0.06, $p = 0.81$). The interaction between Group (control group) and Time (End-of-Treatment) was not significant, suggesting that the changes in Stress over time did not significantly differ between treatment and control groups, ($\beta = -2.294$, $SE = 3.848$, Wald Chi-Square = 0.36, $p = 0.55$).

In summary, mixed-design ANOVA analysis did not reveal statistically significant main effects for Group or Time on Stress. The interaction effect, while not statistically significant, had a small effect size, suggesting a potential nuanced influence of Time on Stress that may vary between the control and treatment groups. GEE analysis explored the impact of Group and Time on Stress levels. The coefficients for Group, Time, and the interaction effect for Group and Time were not statistically significant.

3.4 **Qualitative Results**

3.4.1 Demographic Information

Participants included in qualitative analysis (n = 4) were a sub-group of the larger group (n = 25) included in quantitative analysis. Participants' age range and demographic information is listed below (see *Table 3* below). At semi-structured interviews, participants were asked to talk as widely as possible about their experiences of the death reflection intervention and how they made sense of their experiences. The participants' accounts clustered around two superordinate themes: *Multifaceted Mortality* and *Dynamics of Death Reflection*. No more than two superordinate themes were used to provide a rich interpretative account of the breadth and complexity of participants' experiences of death reflection.

3.4.2 Table 3

Demographic Information for Qualitative Sample

Participant Name	Laura	Sarah	Callum	Sheila
Age	52	25	20	51
Years of education	11	11	10	12
Ethnicity	White South African	White Spanish	Black African	Turkish
Gender	Female	Female	Male	Female
Religious status	Christian	Spiritual	Christian	Atheist
Relationship Status	Married	Unmarried with partner	Single	Married
Occupation	Community Lead at Hospice	Doctoral student	Master's student	Public Affairs Director in Pharmaceuticals

Note – Participant names are pseudonyms.

3.4.3 Superordinate Theme 1: Multifaceted Mortality

Multifaceted Mortality captures the multiple aspects of participants' relationship with mortality and death including societal, cultural, religious, social, and personal aspects, set out in the subordinate themes below.

Subordinate Theme 1.1: Death and Religion.

This subordinate theme addresses how the intersection of religious, social, and cultural influenced participants' relationship with death. One common aspect for all participants was the significant role their religious upbringing played in shaping how they related to death. Amongst various religious backgrounds, they grappled with the tension between faith and loss, highlighting the complex nature of death in the context of religious faith.

Participants' diverse experiences highlight the bi-directional relationship of death and religion, in so far as death both influences religious customs and practices and the way death is thought about is influenced by religious customs and practices. In reflecting on death, Laura, raised as a Christian in a religiously devout family in South Africa, found herself ("questioning the things I always just believed and was told") during the process of death reflection which involved returning to difficult memories.

> When my brother died, he was 29, I was 11. It was a week before my birthday and it's the most vivid memories that I have. I can still remember so many things about what happened on that night that that happened. Mean it was a hugely traumatic event for us and my dad in particular. I can remember hearing my dad saying his nightly prayers, saying "God, I know this is your will and we accept that it needed to happen". I can remember as an 11-year-old, what the hell? How could you even say that?
>
> (Laura)

While Laura's grappling with her father's response has since developed into openness towards ("the strength of his faith"), this episode still underlines the tension she feels between faith and loss, reflecting the complexity of her religious faith. Laura interpreted her father's faith as his unconscious attempt to distract from the utter devastation of loss. The intervention helped to illustrate how, although she has ("faith in an afterlife"), she cannot understand loss in a religious context. For Sheila, the cultural and religious context of her upbringing in a ("devout Muslim") Turkey was very influential on how death was understood as ("God's will"). Death was supposed to be accepted without question and ("extra feelings like crying when someone died was not religiously compliant, not socially acceptable").

Reflecting on my own experiences of being raised in a 'culturally religious' Irish Catholic yet comparatively more individualistic society, and at an earlier time period, I was aware of my bias in seeing these views as harmfully dismissive of individual feelings in favour of the community and religious obedience. Sheila's more recent turn towards humility and emphasizing the value of enjoying life, within its limitations, may have echoed a return to something like the Islamic outlook of her childhood. This outlook challenged, in her mind, the "modern view" of "assigning so much value to what we achieve". Sheila reflected on how she may have got caught up in this modern view through her own ("ambition") and challenges with ("self-acceptance").

For Sarah, raised in a ("Christian family") in Spain, ("prayers") and ("flowers on the grave") were common responses to death within a belief in an afterlife. Her own ("spiritual") belief system, diverging from that of her family, meant she experienced loss differently as ("the soul has already left the body"). She reflected on her family's ("trauma and grief") after the unexpected loss of her grandmother while encountering a familial ("taboo") around discussing death:

> When I experienced death, it was quite a while ago, like seven years ago, and in my family, there was this history of keeping death really taboo because my grandma had passed away before my mom in a car accident and no one talked about it. It was very taboo, and it left my mom and my aunts, I think, with a bit of that trauma and grief.
>
> (Sarah)

After the loss of her own mother, Sarah's resistance to confronting these feelings led to a personal journey marked by a shift from an externally influenced relationship with death to a more personal relationship. The death reflection intervention allowed her to reflect on this transformation and how her ("openness to an afterlife") changed the way she lives in that ("it's easier to go with the flow"). In contrast, having been raised in a Ghanaian Christian family, Callum's faith allowed him to feel safe in the expectation of ("God's forgiveness"). His attitudes to his own death were influenced by his belief in ("meeting God in the afterlife"). His faith was not only a source of ("togetherness") and connection to family, it also impacted his self-image, allowing him to navigate life's challenges and ("rejections from job applications") while not ("wallowing on my iniquities or flaws"). He reported having often contemplated his death and ("realized, although life is finite, my hope doesn't rest with myself but with God, so I have nothing to worry about").

Death and Religion explored participants' diverse experiences of death in so far as they were shaped by religious, social, and cultural influences. Having been raised in different religious backgrounds, they navigated the tension between faith and loss, highlighting the complex interplay between death and societal beliefs. For example, Laura's Christian upbringing in South Africa and Sheila's devout Muslim upbringing in Turkey illustrate how cultural and religious contexts influenced individuals' perceptions of death. Sarah's journey from a family taboo around discussing death to a personal transformation emphasizes the impact of confronting mortality on one's beliefs and attitudes.

Subordinate Theme 1.2: Death and Relationships.

Shared aspects of participants' experiences highlighted the profound impact of interpersonal dynamics on the process of death reflection. From fears for loved ones to open dialogues about death and considerations of how others might cope with one's death, this theme spoke to how entwined death and the relationships can be.

All participants reflected on their relationships, both before and after they were explicitly asked in Week Three, *How do you feel your family would react if it* (death in the apartment fire) *did happen to you?*. Concern was expressed by all participants for the wellbeing of loved ones after their own deaths. Laura was worried about ("leaving my children without a mother before they are adults"). There was also hope that ("openness about how we recover from loss shows my kids that life continues in a different way"). Similarly, Callum was cognisant of the impact of his death on others:

> That question really messed me up, so I tend to care more for my friends and my family than myself. So, if I were to go, I would feel bad because it's like you're losing a son, you're losing a brother, losing a friend. I tried to make their days better, I just wonder if their days would be better if I'm no longer around and the thoughts that they could possibly be sad over me, I always try to make them happy.
>
> (Callum)

Sheila echoed this sentiment, as she spoke about ("praying for courage and strength for the closest ones that I leave behind, hardest hit by my going"). She expressed ("discomfort") at her husband's ("pessimistic") view of death while understanding how it helps him, personally and in his work as a doctor, when ("he's in too much distress").

> He calls it "the psychology of the dead man"; he believes that when it's done, it's done and nothing is beyond and at that moment, nothing is going to be bothering him. At that moment, how he would act is a guide to him but for me, I'm more emotional, I

> enjoy life, I assign so much value to experience in life. I was always irked when he was even using this term.
> (Sheila)

Sheila expressed a wish that ("the eldest go first") as seeing her daughters' death would be ("too upsetting"). Similarly, Sarah was concerned for the ("pain and confusion") of those close to her ("who have not experienced death"). She described being able to arrive at an ("appreciation of life and death") and there was concern for loved ones who failed to do so. She imagined that ("my father wouldn't know how to deal with the sadness") and her closest family members ("who would cry it out"). Sarah was also mindful of other interpersonal dimensions of death including opportunities for ("being together and bonding") in the wake of a death, as she had recently experienced. Towards the end of the intervention, Laura found ("appreciating life is as important as accepting death really hit home today"). This marked a return to values after processing difficult feelings related to death; ("it's about living life with those I love, whose company I treasure"). Contrastingly, Callum had the impression that ("the study was designed to make people more motivated and to sort of cut off their relationships"). Although Callum had heard a thorough explanation of the study and understood its aims at screening, he experienced certain outcomes of death reflection in direct opposition to others.

Concern for the well-being of loved ones after their own deaths was expressed by all participants, reflecting on their family's potential reactions and the emotional burden their absence might impose. While some participants found solace in familial support and bonding in the face of death, others grappled with the intervention's impact on relationships, suggesting varied responses to death reflection.

Subordinate Theme 1.3: Death and the Individual

Reflecting on their mortality over a period of weeks captured significant shifts in each participant's individual sense of meaning in life in light of inevitable death. Feeling "disconnected" or "distant" both from "my true self" and "death" was a common initial experience that the intervention helped to reveal. In trying to reconnect with their true selves, participants found themselves evaluating the lives they lead up to their simulated death.

For Callum, this was the first time he had considered the implications of his death on his way of life and future plans. This marked a departure from his focus on his ("goal of becoming the best lawyer ever").

> The study made me realise how fickle human life could be and how fickle aspirations are. In the end your solutions and your first-class degree are not going with you anywhere on your deathbed. But if you don't achieve some of these things, you will have regrets. I realised the importance of reflecting on yourself and the things you have achieved towards the end; they give you a sense of value, of purpose. (Callum)

I wondered if ("fickle") suggested disappointment at the undermining of the ("aspiration") and ("achievement") that played a central role in Callum's sense of ("purpose"). The ("deathbed") image seems both to threaten and uphold - as opposed to change - the importance of achievement to his sense of purpose in life. This realisation made Callum ("a bit muddled in my mind") in the final moments before his simulated death; wrestling with the apparent incompatibility between valuing individual achievement; ("I want to be the best at my job"), and valuing community ("who I have helped and brought joy to"). Callum described becoming more cognisant of his death for others, ("I used to think 'If I die, I die' but, as I've gotten older, I've come to see my death as it would be for my family").

In contrast, the relationship between and ("meaning and loss") was more established and ("closely related") for Laura. After extensive experience with death, Laura found the

intervention shifted the focus to her own mortality ("in a new way") towards recognising a ("disconnection from her true self") at the study's outset, reflecting the ("separation") of her personal and professional identities. This separation was made due to the nature of her ("work in end-of-life care"), the long-standing need to be ("steady for others"), and the ("lack of compassionate support at work"). The intervention helped to clarify and promote distinct ways of relating to death in these personal and professional domains. Looking back, working directly with the dying during ("the Covid-19 pandemic"), brought up ("fear of serious illness more than death because of the loss of control and dignity") as ("I've seen that happen for a lot of people"). This underlined the role of control and dignity to her sense of meaning in life.

Sarah's experience of death reflection ("during the first two weeks was a bit hard") and she went on to explain why.

> There were instances where you had to think a lot about your own death. Since then, I've been having it in mind way more than before when I had intrusive thoughts here and there of "I could die now". If I die now, it would be okay, I've had a nice life, I've enjoyed, and I've achieved things. Actually, this is the first time that I said it out loud.
> (Sarah)

While she normally ("pushed thoughts of death away"), the death reflection process involved ("normalising death") and ("accepting death") as part of life which allowed her to ("appreciate life") more ("mindfully"). Sarah realised that she was ("far from my true self at the start") and enjoyed using the ("mindful space to get closer again"). For Sheila, too, changes in attitudes to death corresponded with changes in attitudes to herself. She reflected that ("I was not very accepting to myself; I was always pushing myself harder and harder. I cannot change it, I'm always this ambitious lady"). She wondered if this was connected to her former somewhat ("arrogant") or complacent view about death. Death reflection helped

Sheila come to a more ("humble") embracing of ("brief and precious") life while reminding her of how she struggled to be more self-accepting.

3.4.4 Superordinate Theme 2: Dynamics of Death Reflection

Dynamics of Death Reflection encapsulates the intricate interplay between each of the subordinate themes, immediate emotional responses to the death scenario and death reflection, diverse coping mechanisms, and the profound influence of personal experiences of loss on participants' reflections on mortality. Each participants' narrative unfolded as a nuanced, dynamic, and multifaceted process, illustrating the evolving and individualised nature of confronting one's mortality.

Subordinate Theme 2.1: Responses to Death Reflection

Despite the aforementioned individualisation, common threads of fear, initial resistance, and eventual acceptance weave and interconnect across participants' accounts of their experiences of death reflection. Based on data collected on the survey platform and at interview, participants engaged well with the death scenario and found it convincing; typically experiencing initial distress due to the immediacy and distressing nature of the simulated death.

Laura, who described herself as ("surrounded by death from an early age"), experienced, in the death scenario, an immediate threat to *her own* life that evoked a visceral response; ("fear and panic") with ("tension on my chest, holding my breath, and slight unease in my belly"). For Callum, ("the loss of control") and ("the pain of being burnt alive") caused ("emotional pain") as his ("mind raced") to find a way to ("escape") and survive.

Likewise, Sheila's experience of the death scenario was initially one of struggle and resistance to the immediacy and the ("horrifying") nature of the death.

> The passage about the fire and getting stuck - I wanted to avoid it, I hated it, it was unbearable for me to think towards the end. It was not the idea of dying but the idea of dying suffocated and burning is the worst that I am afraid of.
> (Laura)

Sarah's initial fear and distress ("there is a lot of smoke, what do I do? I'm not able to breathe") rooted in a previous near-death experience involving a fire in a friend's apartment building, contributed to the intensity of her emotional response. Subsequently, facing inevitable death brought up a strong sense of ("unfairness") due to her young age and ("having so many things I would want to do"). Like Sarah, I too felt a sense of injustice when I engaged with the death scenario due to a sense of my life being cut short. This made me curious about whether associating one's death with a sense of injustice was more due to age, or whether it was more universal or more idiosyncratic than could be accounted for by age alone.

Over the four-week intervention, based on interviews and diary entries, participants' responses gradually shifted into nuanced contemplation of mortality, life review, and, for some, hope in their ability to accept death. Sheila explained that she ("came to peace with the fact that it's going to end and there's nothing to do about it"). She reflected that ("when you realize that, the tension goes away"), and experienced a journey marked by ("humility"), cherishing ("precious") life, and ("openness") towards an afterlife. Her language indicated a desire to mentally distance herself from the ("idea") of an imminent death, emphasizing contentment and hope: ("One day, I will unite with my loved ones on the other side").

Laura's alternating between resistance ("I don't want to die yet") and reluctant acceptance ("a long life is not a given, the end is near") opened the way for an appreciative life review ("Life had been good - I had a family, I worked hard, I went to church"). Death reflection helped to clarify the challenging aspect of death for her: ("I fear losing loved ones but it's not as overwhelming now"). Callum became calmer and clear-headed in response to his death, focusing on achievements and communal contributions before looking back appreciatively on life.

> I would handle it with a calm certainty after my panic has died down and be content in what I have accomplished with my life. There's no use crying over spilled milk. I lived a life filled with purpose and love, walking with God.
> (Callum)

This seemed to provide consolation against the loss of control; the aspect of death that he spoke about finding so personally threatening to his sense of ("purpose in life"). Sarah's ("mindful") life review emphasised acceptance, gratitude for life, and reconnection with significant relationships. Facing inevitable death, she reflected on ("the positive moments") and chose to ("think about my mother"), indicating a re-orientation to values, similar to Sheila and Laura. This seemed to allow for a more authentic connection with herself, ("realizing I was far from my true self at the start").

All participants experienced the death scenario as distressing, although the aspects of the death that were most distressing varied between participants, whether it was the ("immediacy") and ("unfairness") of death or the associated ("loss of control"). Participants came to have a different experience of death reflection, seen as linked to but separate from the death scenario. There was a shared sense of hope that one could face their final moments with peace and acceptance although some ambivalence that ("it's not that easy") (Laura).

Subordinate Theme 2.2: Ways of Coping with Death

Participants' ways of coping with death revealed a range of strategies influenced by personal experiences of loss, religious upbringing, family and cultural influences, and professional roles. Analysis highlighted both common ways of coping across accounts and the complex and personalized nature of coping with mortality.

Laura became more mindful of how previous experiences caused (“my need to be self-reliant and rationalise the process of dying, to think more than I feel about death”). Rationalising seemed to allow her to cope with the intensity of her work in end-of-life care during the Covid-19 pandemic by (“detaching from feelings”).

> During Covid-19 I felt like two different people sometimes, you know, because the work was so tough and coming back home and needing to leave that really at the front door because we have two boys that were home schooling and doing all of that stuff and being able to be in the moment.
> (Laura)

Laura’s experiences highlighted the complexity of opening up to view one's own death holistically while maintaining professional detachment. DR helped Laura understand her feelings towards her own death and ways of coping with these feelings. This allowed her to see the importance of (“engaging emotionally”) with thoughts of death; (“to feel it for myself”).

> I do think it's shifted week by week; it's become a more emotional experience for me. Initially, I was able to rationalize because I've seen enough to know that there is not just one experience, we all have. I think I've become so much more conscious of that.
> (Laura)

Rationalising functioned differently for Sheila, allowing her to (“somehow believe there is always an escape from death”). The prospect of a sudden death was (“disturbing”) when contrasted with the (“idea”) that (“life will end one day”). Sheila’s language indicated

wanting to distance herself from the relative unpredictability of death. Likewise, Callum, identifying as a ("rational person") who saw ("no use crying over spilled milk"), was emotionally disengaged from death. Emotional suppression may have functioned more broadly for Callum here, underpinning his drive for ("success") and ("achievement") to ("avoid any regrets on my deathbed so I can feel content and at peace"). Avoidance was also present for Sarah who felt that family stigma or ("taboo") about discussing death likely contributed to her ("pushing thoughts of death away").

The intervention helped participants to recognise and understand changes in how they have coped with death over time. A near death experience involving a fire in an apartment building had led Sarah, again, avoid thoughts of death which, in turn, led to ("delayed responses to anxiety") when ("the thoughts came back later").

> One year later I was in France driving during this massive storm. We saw a really big fire; it was really far away but I suddenly I got so anxious. I told my partner "I think I'm smelling smoke" so I feel like I have very late responses to things.
> (Sarah)

Understand her ways of coping helped Sarah to ("respond differently") to a death in her family during the study. While Sheila reflected on her transition from a more communal view of death within her ("devout Muslim") upbringing, through numerous significant experiences of loss, to an increasingly personal connection to her own feelings about mortality, she still found it ("humbling to be part of something bigger"). Family influences informed the almost ("arrogant") or complacent attitude towards death that she held for a time. Likewise for Sarah, family and cultural influences contributed to avoidant coping with death.

Participants tended to cope with death by rationalising and not emotionally engaging with death, perhaps in an attempt to delay death to some future date, as was the case for

Sheila. It was interesting to see how ways of coping with death differed from ways of coping with distress. Participants' ways of coping differed considerably depending on whether it was one's own death or someone else's death.

Subordinate Theme 2.3: Experiences of Loss

Death reflection served as a lens through which to reflect on personal experiences of loss and bereavement and vice versa. Previous losses allowed for richer reflections on life and death, more readiness for the death of others but possibly not one's own death.

Laura's extensive encounters with loss ("from an early age"), especially ("the loss of relationships"), led her to reflect on how best to manage the impact of loss in both personal and professional domains. She spoke about how losing loved ones had caused a ("disconnect") from her own feelings when she returned to work.

> Hopefully that disconnect didn't cause me any further harm because I was quite inauthentic when I went back to work or was, I really coping fine? I've questioned a lot of my experiences since having very significant deaths. How can I be supported in work, so I don't that I don't have to carry stress for my grief? Plus, the stress of other people's grief or just life experiences.
> (Laura)

Laura's experience of DR gradually shifted to individual fears around ("loss of dignity and control") which appeared to be directly influenced by the deaths she had witnessed. These deaths, although painful, established her vocation to provide understanding and ("support others experiencing loss") through her work. Supporting others through loss may have allowed her to heal from her own losses. Contrary to Laura, Sarah's increasingly ("accepting") relationship with her own death preceded her accepting the deaths of her loved ones, showing a unique trajectory. The death of someone close to Sarah during the study

(“helped me to engage”) with death reflection, enabling her to (“appreciate life, find peace and support other people”) in grieving the loss.

Participants’ life circumstances at the time of the study impacted how they engaged with DR. Sheila's (“just coming out of a period of intense grief”), having lost both parents and her mother-in-law, provided a backdrop for her evolving reflections on her own mortality. She felt that her grief was (“more bearable”) when death was (“expected”) and there is (“no hope of recovery”).

> With my dad it was bearable to some extent because he had a period of severe sickness. With my mom, we were full of hope, and I was just making plans to have her come here. Then she was gone, quite unexpected. Losing my mom was a huge blow for me, I was crying every day, and I didn't know how to get through. (Sheila)

While Sheila saw these experiences as having helped her to be more accepting of death, thinking about the loss of her daughter was (“devastating”), aligning with her family’s hope that (“the elders should pass first”), a version of the common Turkish saying ‘May Allah give us all an orderly death’. The feeling of devastation reflected the compounding effect of numerous losses.

Callum, in contrast to others, disclosed no direct experiences of loss. His reflections on death were more novel; learning to (“be more considerate of others”) as he has gotten older, leading him to realise that (“taking one’s own life is selfish”). His reflections on life lived revealed a tension between the personal meaning placed in (“achievement”) and the apparent (“fickleness”) of (“aspirations and human life”). Breaking from his commitment (“not to cry over spilled milk”), Callum contemplated on some of his other-oriented regrets which ultimately spurred him on to (“achieve more and rest later”).

> I could have done more for other people; I could have made people smile more often. I could have been a bit healthier because one of my goals is to be healthy but unfortunately, I'm lazy about it. So, all of the goals were within my reach, but I chose intentionally or unintentionally not to pursue them.
> (Callum)

The participants' varied responses to death reflection underscore the nuanced interplay between personal experiences of loss, coping mechanisms, and evolving attitudes toward mortality. This exploration illuminates the individualized nature of grief and the diverse ways individuals navigate their emotions and reflections in the context of death.

3.5 Chapter Summary

Having previously set out the practical methods used to answer the research question, the chapter presented the results of both quantitative and qualitative analyses undertaken to investigate the potential psychological benefits of death reflection over time. Descriptive statistics for the quantitative sample were presented in tabular form before quantitative results were considered, outcome by outcome, detailing descriptive statistics and statistical analyses for each outcome. At this point the demographics of the qualitative sample were presented before qualitative findings were set out according to superordinate and subordinate themes.

4 Discussion Chapter

4.1 Chapter Introduction

This chapter will begin by summarising the aims and methods used to explore the potential psychological benefits of death reflection over time. The quantitative findings will be discussed, outcome by outcome, to match the structure of the results chapter, before the qualitative findings are discussed, subordinate theme by subordinate theme. A synthesis of quantitative and qualitative findings will be presented, and these findings will be considered in the context of previous research and in relation to the research hypotheses of the current study. The methodological strengths and limitations of the research will be discussed under the headings *sampling*, *design*, and *measures* before the conceptual strengths and limitations are discussed. The theoretical and clinical implications of the findings will be considered before recommendations for future research are made. Finally, a self-reflexive account will be presented detailing the personal meaning of the research to the researcher.

4.2 Summary of Research

The research question for this study was to explore the potential psychological benefits of death reflection over time. Research aims were as follows: (1) To develop a four-week intervention based on Cozzolino's (2004) *Death Reflection Manipulation*, (2) To pilot, run, and evaluate the four-week DRM-based intervention using a controlled design against psychometric outcome measures, and (3) To elicit how participants made sense of their experiences of the intervention using a qualitative approach. The current study used a mixed-methods approach to investigate the potential psychological benefits of death reflection, combining quantitative measures of well-being and death attitudes with qualitative exploration of participants' experiences and interpretations. Research Aim 2 was addressed

by investigating whether death reflection was associated with changes, primarily, in wellbeing and attitudes toward death (specifically fear of death and avoidance of death) and, secondarily, in authenticity, depression, anxiety, and stress.

The current study explored the psychological benefits of DRM outside of laboratory conditions and over a longer term than previously studied. To achieve this, the original DRM was extended and customised into a facilitated practice that participants were encouraged to undertake daily over a period of four weeks while being assessed on pre-post outcome measures. This was a preliminary study to test the feasibility of a novel intervention. The scope of the study was to make preliminary investigations for the use of later studies on the effectiveness of death reflection as a psychological therapy. As this was not a full intervention study, findings should be taken tentatively and limitations kept in mind before any cautious conclusions or generalisations are made.

4.3 Summary of Quantitative Findings

Quantitative findings indicated that, while the DRM-based intervention was associated with, at best, modest effects in the outcomes investigated, there were notable trends towards significance in need of further investigation. Descriptively, there is evidence to suggest this intervention could be effective in terms of bringing about positive changes in wellbeing and death attitudes. The key conclusion of this pilot study is the suggestion that DRM-based intervention has potential to improve different outcomes. In general, results from this preliminary study require confirmation in a larger scale intervention study and, therefore, should be interpreted with caution. This preliminary study is hoped to inform the need and relevance to conduct future studies testing this intervention on different types of samples. Quantitative results for primary outcomes (wellbeing, fear of death, death

avoidance) and secondary outcomes (depression, anxiety, stress) are discussed below, outcome by outcome.

4.3.1 Wellbeing

It was hypothesised that, when compared with controls, DRM-based intervention participants would exhibit increased levels of wellbeing. While treatment and control groups had similar median wellbeing scores at baseline, mixed-design ANOVA analysis found no significant difference in Wellbeing between treatment and control groups and between baseline and end of treatment. While the interaction of Group and Time did not reach conventional levels of significance, its presence indicated the potential differential impact of time on Wellbeing that varied between treatment and control groups. This potential impact of Time on Wellbeing was supported by GEE analysis, with the main effect for Group and the interaction of Group and Time approaching marginal significance. As GEE analysis encapsulated all cases (including those with missing data excluded from mixed-design ANOVA analysis), this result may indicate the presence of false negatives in the mixed-design ANOVA findings for wellbeing. Overall, there was a minor tendency for divergence between baseline and end of treatment, suggesting a trend for a treatment effect over a longer period of time. Unfortunately, this potential effect was outside the time constraints of this study to investigate in more detail.

These findings, particularly the trend for a treatment effect over a longer period of time, provided tentative support for the hypothesis. Previous research based on psychosocial interventions involving mortality awareness (other than death reflection) have demonstrated positive effects on wellbeing including relief, and self-determination, and assurance (Kukla *et al.*, 2021; Teo *et al.*, 2021). Findings from the current study provide tentative support for the

DRM-based intervention being associated with increased wellbeing, as hypothesised by previous research focused on the role of identity integration in death reflection (Blackie *et al.*, 2016). Qualitative findings, in illustrating the gradual nature of change associated with DR, indicated that the outcomes indicative of wellbeing (Blackie *et al.*, 2016) may take longer than a five-week period to emerge.

4.3.2 Fear of Death

It was hypothesised that, when compared with controls, DRM-based intervention participants would show reduced levels of Fear of Death. The interaction plot showed that interestingly, at baseline, the treatment group had higher median levels of Fear of Death than the control group. Both treatment and control groups' Fear of Death increased marginally between baseline and end of treatment (Appendix Z), while the control groups' increase was at a higher rate at end of treatment. While this finding may seem counterintuitive, previous studies using death reflection have found (Cozzolino, 2004; Frias *et al.*, 2011), increasing fear of death is a necessary prerequisite to experience the benefits of death reflection.

Non-parametric analysis revealed significant effects for Group and Time, with a potential trend towards significance for the interaction of Group and Time. The Wald-Type Statistic found that Group, Time, and the interaction between Group and Time all had significant effects on Fear of Death. The ANOVA-Type Statistic results mirrored the WTS findings while an additional Modified ANOVA-Type Statistic indicating potential significance. GEE analysis revealed a significant main effect of Time on Fear of death. The main effect for Group was not significant and the interaction of Group and Time approached marginal significance. This indicated substantial changes in Fear of Death over time, however these changes did not differ significantly between treatment and control groups.

These findings did not support the hypothesis, as the intervention appeared to have a similar effect on Fear of Death regardless of Group. That said, death reflection did have potential effects on Anxiety (see *Anxiety* below). This demonstrates the complexities in measuring fear of death (Kastenbaum & Costa, 1977; Wass, 1979) due, in part, to other factors not accounted for that may impact these findings. It is commonly believed that fear of death is universal and that its absence may reflect denial of death (Becker, 1973; Marshall, 2012). However, as death anxiety operates partly unconsciously, we need to be cautious in accepting at face value the degree of fear of death reported at a conscious level (Feifel & Branscomb, 1973). Death reflection may have prevented participants from denying or avoiding death, bringing to consciousness, as opposed to generating, their pre-existing fear of death. This may explain why Fear of Death was lower at baseline than at end of treatment for both groups.

The DRM-based intervention may have also brought *different* death-related fears to awareness, e.g. concerns about loss of self and the unknown beyond death, fear of pain and suffering, realization of lost opportunity for atonement and salvation, and concerns about the surviving family members (Feifel, 1977; Feifel & Nagy, 1981; Fry, 1990). It is possible that the same level of death fear may reflect very different death attitudes (Wong *et al.*, 1994). This is supported by qualitative findings (below) that elucidated how participants' ways of coping with death changed; from an initial point of no death awareness to fearful to more accepting, reflective, and less fearful responses towards the end of the intervention. It is plausible that death reflection would be associated with a continued reduction in Fear of Death beyond end of treatment. Therefore, collecting data at follow up may have revealed significant differences in Fear of Death between groups.

There are a number of factors that may help to account for these surprising findings. Numerous studies found that females report higher levels of death anxiety compared to males (Abdel-Khalek, 2007; Gedik and Bahadır, 2014; Khoshi *et al.*, 2017; Atmaca, 2021; Spitzenstätter and Schnell, 2022). Contrastingly, the treatment group, who reported median levels of Fear of Death at baseline included more males than the control group. However, other factors outside of sex impact predict higher levels of fear of death, such as elitist gender beliefs, fixed-orientated mind-set, and need for immediate gratification (Zampella and Benau, 2022).

4.3.3 Death Avoidance

It was hypothesised that, when compared with controls, DRM-based intervention participants would be more able to confront death and, therefore, would show reduced levels of Death Avoidance. The interaction plot showed that, at baseline, the treatment group had higher median levels of Death Avoidance than the control group. There were negligible changes in both treatment and control groups' Death Avoidance between baseline and end of treatment.

Findings from mixed-design ANOVA analysis indicated a marginally significant main effect of Group and Time, suggesting potential differences in Death Avoidance between treatment and control groups and across time points. However, the interaction effect was not significant, indicating that the change in Death Avoidance over time did not differ significantly between the two groups. GEE analysis showed a significant effect of Time on Death Avoidance, while the main effect of Group and the interaction effect of Group and Time were not significant. While these findings did not support the hypothesis, as the

changes in Death Avoidance did not differ significantly between groups, there was a potentially significant effect of Time on Death Avoidance.

These findings did not support the hypothesis as the intervention appeared to have a similar effect on Death Avoidance regardless of Group, indicating no greater ability in the treatment group to confront death. The current death reflection intervention, despite its similarities to interventions in previous studies (i.e. fostering open dialogue and engagement with death-related themes; Carter *et al.*, 2023) was not associated with the expected reduced levels of death avoidance. The potential significant effect of time suggests that a significant difference between groups may have been observed over a longer time period.

Qualitative findings (below) highlighted the impact of time on change in participants' ways of coping with death; with initial avoidance developing into something closer to acceptance. Research has observed an inverse relationship between fear of death and death avoidance, with higher fear of death associated with lower death avoidance (Wong *et al.*, 2015). On this basis, a significant difference between groups' levels of fear of death would have predicted a similar trend for death avoidance. However, as the former difference was not observed we may expect no significant difference between groups' levels of death avoidance.

4.3.4 Depression

It was hypothesised that, when compared with controls, DR participants would show lower levels of Depression. At baseline, the treatment group had marginally lower median levels of Depression than the control group. There were negligible changes in both treatment and control groups' Depression between baseline and end of treatment, with a minor increase

for the treatment group. Findings from mixed-design ANOVA and GEE analyses revealed no significant main effects of Group and Time, as well as no significant interaction effect, on Depression. These findings did not support the hypothesis as they suggested a consistent level of Depression across the control and treatment groups and minimal change over time.

These findings did not support previous studies that have found fear of death, death avoidance, and depression to be positively correlated (Wong *et al.*, 1994). Templer (1970) found that death anxiety was a common component of depression and was alleviated when depression was alleviated. Interestingly, death reflection may have been associated with a slight, presumably temporary, depressive effect. Instead, this finding may support research proposing that depression comes (after denial, anger, bargaining) before acceptance as a stage of adjustment to the prospect of inevitable death (Kübler-Ross, 1969). Therefore, over a longer period of time we may expect to observe lower Depression and higher Wellbeing as the treatment group come to accept their own death.

We may also see a more substantial difference in Depression between groups corresponding to the tendency for divergence in Wellbeing between baseline and end of treatment. However, Kübler-Ross' (1969) stages were based on observations of the dying process of terminally ill patients. The current study was concerned with the psychological preparations of non-clinical sample of individuals drawn from the general population who are likely to experience the prospect of death differently to the terminally ill. So, it is possible that follow-up would be just as likely to reveal that death reflection was associated with sustained increased levels of depression.

4.3.5 Anxiety

It was hypothesised that, when compared with controls, DRM-based intervention participants would show lower levels of Anxiety. Visual inspection of the interaction plot revealed that, at baseline, the treatment group had lower median levels of Anxiety than the control group. Levels of Anxiety reduced for both treatment and control groups between baseline and end of treatment. Findings from the mixed-design ANOVA revealed a significant main effect of Time on Anxiety levels, suggesting a change over the course of the intervention. However, the main effect of Group and the interaction of Group and Time were not statistically significant. These findings did not support the hypothesis in that, while Anxiety levels varied over time, the intervention did not significantly impact Anxiety differently between the Control and Treatment groups.

GEE analysis found that both Group and Time trended toward significance, suggesting potential effects. However, the interaction effect for Group and Time was not statistically significant. These findings provided partial support for the hypothesis with death reflection being associated with lower Anxiety. Surprisingly, death reflection was not associated with any, even temporary, increases in Anxiety. This was in opposition to mortality salience research that has consistently found that direct threat to the self it causes anxiety (Pyszczynski *et al.*, 2004) and anxiety-related behaviours (Menzies *et al.*, 2021). This finding may lend support to viewing death anxiety as a trans-diagnostic construct (Iverach, 2014) in so far as a reduction in death anxiety predicts a reduction in general anxiety. Notably, lower anxiety was not supported by participants' subjective experience of anxious affect and physical arousal which were common responses to the DRM-based intervention, as qualitative analysis (below) showed.

4.3.6 Stress

It was hypothesised that, when compared with controls, DR participants would show lower levels of Stress. Visual inspection of the interaction plot revealed that, at baseline, the treatment group had lower median levels of Stress than the control group. Levels of Stress increased negligibly for the treatment group between baseline and end of treatment. Mixed-design ANOVA analysis revealed statistically non-significant main effects for Group and Time on Stress. The interaction effect, while not statistically significant, had a small effect size, suggesting a potential nuanced influence of Time on Stress that may have varied between the control and treatment groups.

GEE analysis explored the impact of Group and Time on Stress levels. The coefficients for Group (Control), Time (End-of-Treatment), and the interaction effect for Group and Time were not statistically significant. These findings provided only partial support the hypothesis in so far as levels of Stress increased negligibly for the treatment group between baseline and end of treatment and there was a potential nuanced influence of Time on Stress that may vary between the control and treatment groups.

These findings did not support the hypothesis that, when compared with control, DRM-based intervention participants' scores would show a reduction in stress levels. While there is a shortage of research on mortality awareness/death reflection and stress *per se*, previous studies have shown how the DRM promotes behaviour in line with intrinsic values (Cozzolino *et al.*, 2004). Auerbach and colleagues (2011) found that greater endorsement of extrinsic versus intrinsic aspirations is a vulnerability factor that generates stress in individuals, which in turn increases one's susceptibility to depressive symptoms. On this basis, it was surprising not to find either significantly reduces stress in the treatment group or a significant difference in stress between treatment and control groups. This may point to an

issue with design as both groups received a mindfulness intervention, albeit brief, which may impact stress levels equally across groups (Chin *et al.*, 2019; Chiesa & Serretti, 2009), limiting any significant differences between groups.

4.4 Hypotheses summary

It was hypothesised that, when compared with controls, that DRM-based intervention participants' scores would show increased levels of Wellbeing. The trend for a treatment effect over a longer period of time provided tentative support for this hypothesis. Findings for Fear of Death did not support the hypothesis, as the intervention appeared to have a similar effect on Fear of Death regardless of group. Findings for Death Avoidance did not support the hypothesis as the intervention appeared to have a similar effect on Death Avoidance regardless of Group, indicating no greater ability in the treatment group to confront death. Findings for Depression did not support the hypothesis as they suggested a consistent level of Depression across the control and treatment groups and minimal change over time. Findings for Anxiety did not support the hypothesis in that, while Anxiety levels varied over time, the intervention did not significantly impact Anxiety differently between groups. Findings for Stress did not support the hypothesis that, when compared with control, DRM-based intervention participants' scores would show a reduction in Stress levels. While quantitative findings demonstrated, at best, modest effects, there were notable trends towards significance and descriptive statistics to be explored by qualitative analysis.

4.5 Summary of Qualitative Findings

Qualitative analysis, aided by a smaller sample and IPA methodology, managed both to capture aspects of individuals' experiences of the DRM-based intervention that were not captured in the quantitative findings and to elaborate on aspects of the quantitative findings.

Qualitative findings, presented in the form of subordinate themes below, indicated that the DRM-based intervention brought about benefits, some of which were shared and some of which were individual. According to the first superordinate theme, *Multifactorial Mortality*, participants' relationships with mortality and death were found to be complex and multifactorial, including societal, cultural, religious, social, and personal factors. According to the second superordinate theme, *Dynamics of Death Reflection*, there was found to be a delicate interplay between immediate emotional responses to death reflection, diverse coping mechanisms, and the profound influence of personal experiences of loss on participants' reflections on mortality. These findings will now be discussed in depth and in relation to previous studies.

4.5.1 Subordinate Theme 1.1: Death and Religion

Participant accounts demonstrated how deeply important religious, social, and cultural influences were for defining the meaning of life itself, as well as defining the meaning of loss and death. All participants happened to be raised in communities as opposed to nuclear families where death and loss were experienced communally, despite the sometimes deeply individual aspects and existential dilemmas raised by these experiences. They all internalised aspects of religious faith in how they related to death. Regarding belief in an afterlife, most participants expressed an openness towards this. In the cases of Sarah and Callum, they reflected on the ease and relief that this belief provides. This was supported by the finding that religious faith was associated with lower levels of death acceptance and crisis of meaning than secular participants (Spitzenstätter and Schnell, 2022). Hohman & Hogg (2011) found that individual differences, including certainty in an afterlife, may impact whether, and to what extent, mortality awareness has an effect on the individual. When individuals were primed to believe that either there was an afterlife, they were no afterlife or an afterlife was

an uncertainty, only individuals that were uncertain whether there was an afterlife exhibited worldview defence by identifying more strongly with their culture (Hohman & Hogg, 2011).

When considering family members' belief in an afterlife, participants managed to see both the sincere commitment to a life beyond this one and the need to believe that great suffering "needing to happen" (Laura) and was "God's will" (Laura and Sheila). Laura interpreted her father's faith as his unconscious attempt to distract from the utter devastation of the death of his son. This demonstrated how the connection to spirituality (the act of expressing and seeking meaning, purpose, transcendence and connections to others, oneself and a higher power) can be a key aid in adjusting to the end of life. Studies have shown how existential needs are often interconnected with psychosocial and spiritual needs, albeit for individuals with chronic diseases (Büssing & Koenig, 2010) and individuals in palliative care (Boston *et al.*, 2011; Lormans *et al.*, 2021), as Laura observed. Increasingly, psychologists and psychotherapists equate spirituality and existential concerns in clinical practice (Nilsson, 2016).

Aside from the impact of individual differences on death reflection, an alternative explanation is that cultural differences influence how participants view and process mortality. Hofstede's *cultural dimensions theory* (1984, 2001) explored cultural variations in attitudes towards death, ways of coping with death, and rituals surrounding death and dying. In a meta-analysis of mortality salience effects on political attitudes, Burke et al. (2010) found that mortality salience manipulations appeared to have a stronger effect on American participants, possibly due to the cultural prominence of patriotism, causing stronger identification. American participants were more anxious and took longer to solve problems when it involved using a cultural symbol (an American flag or a crucifix) in a way that went against cultural norms (Greenberg *et al.*,1995). Furthermore, death may be more integrated

within cultures where death and violence are more prominent (Burke *et al.*, 2010). These findings indicate the effect that culture may have on how individuals relate to death.

4.5.2 Subordinate Theme 1.2: Death and Relationships

Death reflection generally encouraged participants to step back and contemplate on what their close relationships meant to them, making them more connected to others. Laura became more appreciative of ("those I love, whose company I treasure"), endeavouring to spend less time working and ("more quality time with my husband"). This supported Lykins and colleagues' (2007) finding that death reflection led to greater emphasis on intrinsic goals. Sarah and Sheila came to appreciate the ("preciousness of life") and relationships, neither of which were to be taken for granted. Sarah recognised the unique opportunity for ("bonding and togetherness") after a death, alluding to the bonding effects of suffering together (Peng *et al.*, 2021). These accounts supported the finding of enhanced gratitude after death reflection compared with those in the death anxiety condition (Frias *et al.*, 2011). Laura's decision to prioritise her relationship appeared to represent a larger transition in her life towards acting intentionally in accordance with her values and an awareness of her own limits. This change also reflected her increased mindfulness of her relationships as a representation of her legacy or ("our footprint in life"), found to be a common theme of death reflection (Yuan *et al.*, 2018). Older working age adults, like Laura, they tend to be more receptive to their own mortality and emphasize making meaningful connections and leaving their legacy (Erikson, 1963; Carstensen *et al.*, 1999).

Age may have influenced the experience of death reflection with respect to relationships. The two older participants interviewed, Laura (52 years old) and Sheila (51) showed more concern for surviving family members, a common feature of fear of death

(Feifel, 1977; Feifel & Nagy, 1981; Fry, 1990). The two younger participants interviewed, Sarah (25) and Callum (20), had distinct experiences of death reflection. Within the death scenario, Sarah spent her last few moments thinking about her late mother. This aligned with Erikson's theory (1950) that the main task of early adulthood is establishing intimate relationships and not feeling isolated from others. In contrast, Callum was motivated to disconnect from friends and achieve more for himself. Career-related themes such as ("ambition") (Sheila) and ("achievement") (Callum) initially appeared to prioritise extrinsic values over *connection to others*, a subscale in a death reflection scale (Yuan *et al.*, 2019). However, these themes may have also reflected *motivation to live* (Yuan *et al.*, 2019) in so far as thinking about death may prompt us to make plans for our life, to reflect on the things we still want to do, and to increase our motivation to try new things with the time we have left.

Recognising both the inevitability of their death and the impact of their death on others through perspective-taking, while upsetting, appeared to encourage participants to cherish life and relationships and view life from a more relational as opposed to an individualist perspective. Similar to previous death reflection studies, there was a greater emphasis on intrinsic life goals, such as helping others and making a difference (Cozzolino *et al.*, 2004; Lykins *et al.*, 2007). Importantly, these types of intrinsic life goals are important antecedents to wellbeing (Sheldon *et al.*, 2004).

4.5.3 Subordinate Theme 1.3: Death and the Individual

Similar to other themes, participants' experiences of death reflection were as much related to life as they were to death. Death reflection facilitated realisations of feeling "disconnected" or "distant" both from "my true self" and "death", indicating how inauthenticity hinders the benefits of mortality awareness (Heidegger, 2008; Kierkegaard &

Lowerie, 1941). Death reflection also allowed for the re-evaluation of a personal sense of meaning in light of inevitable death, as previously found (Vess *et al.*, 2009). All participants transitioned from more socially influenced to more individually influenced relationships with their own death. However, aspects of social and religious customs and practices related to death were adhered to, e.g. Sarah and Laura's openness to an afterlife, Sheila's endorsing a ("humble") view of life reminiscent of her religious upbringing. Despite the individual nature of death reflection, this adherence highlighted the weight of cultural influences on death attitudes (Büssing & Koenig, 2010: Boston *et al.*, 2011; Lormans *et al.*, 2021).

The transition to an individualised relationship with death occurred differently for each individual, involving disillusionment for Callum about the ("fickleness of human life") and ("aspirations") as the ("deathbed") seemed to undermine his self-narrative. Self-narrative has been found to buffer against fear of death by weaving together seemingly fleeting or inconsequential aspects of one's life into a more meaningful story that connects the individual to a broader and enduring cultural system (Landau *et al.*, 2008). This illustrated the importance of achievement and self-worth when growing up contrasted with the realisation of our own impotence in the face of death in later life which threatens to terminate all that we hold dear (Wass *et al.*, 1988). Alternatively, the source of death fear for Callum may not be so much the awareness of our finitude as our failure to lead a meaningful life (Erikson, 1963; Marshall, 1975). Sarah's narrative reflected a shift from avoidance and maintaining the family ("taboo") about death to a more personal, profound engagement with death which, in turn, fostered a holistic acceptance of death as part of life.

Life review was prompted towards the end of the intervention at week three when participants were more likely to have navigated their initial distressed responses to their imagined deaths and arrived at some level of death acceptance. The following prompt was

given: *Again, imagining it did happen to you, describe the life you led up to that point.* Life review is considered to be the key component of NDE and to be partly responsible for the positive effects of post-traumatic growth (Ring & Valarino, 1998; Blackie *et al.*, 2016). During life review, individual anecdotes of NDEs have reported re-living pivotal events of their life, enabling them to understand themselves more clearly and to appreciate the interconnectedness of their own life, to other people, and to the natural world (Ring & Valarino, 1998; Blackie *et al.*, 2016). Laura and Sheila went back to pivotal experiences of adversity linked that helped them see that ("meaning and loss") were ("closely related"). Participants' vivid life reviews appeared to facilitate seeking existential meaning and purpose in the face of inevitable death, mirroring previous studies (Cozzolino and Blackie, 2013).

4.5.4 Subordinate Theme 2.1: Responses to Death Reflection

Qualitative findings highlight the complexity of human responses to death, emphasizing the dynamic interplay between immediate emotional reactions and the evolving contemplation of life's meaning in the face of mortality. Consistent with previous studies (Cozzolino *et al.*, 2004), the death reflection-based intervention succeeded in helping each participant to imagine their own death in an individuated and unstoppable way. There were notable changes in the responses to death reflection over the course of the intervention where commonly strong physical and emotional responses such as "fear and panic", "tension", and "unease" gave way to resistance, and eventual, sometimes reluctant, acceptance. This indicated an integrated relationship between the *hot* death anxiety and *cool* death reflection cognitive systems, as opposed to the distinct and mutually exclusive relationship as set out in the contingency model of death awareness (Grant & Wade-Benzoni, 2009).

Laura's initial response to her own death, particularly to the process of dying which involved a loss of control, was visceral. Contrastingly, she was ("cool and rational") about

the deaths of others, reportedly due to numerous experiences of loss in personal and professional life. This difference in responses was evidence of the multiple dimensions of death attitudes in so far as fear of death includes fear of one's own death, fear of the death process, and fear of the death of important others (Wong *et al.*, 1994; Missler *et al.*, 2012). Acceptance of death, a similarly multidimensional construct (Wong *et al.*, 1994), was negotiated in differing ways based on the aspects that individuals found most personally unsettling about death; ("loss of control") (Callum and Laura), ("unfairness because of my age") (Sarah), ("horrifying") and immediate (Sheila). These aspects were, in turn, dependent on individual, societal, and cultural factors. Death reflection also promoted death acceptance by ("normalised dying") (Sarah) so that participants still feared aspects of dying, such as ("losing loved ones but it's not as overwhelming now") (Laura).

On one level, each participant navigated a uniquely complicated psychological journey with respect to their responses to death reflection and the focus of their life reviews, with the shift towards appreciative life review aligning with first person accounts of near-death experiences (Ring & Valarino, 1998). On another level, participants converged in grappling with the profound implications of mortality for their lives in the *here and now*. Consistent with the existential literature, participants' pursuit of personal meaning in life corresponded with the transcendence of fear and the acceptance of death at the end of a life well lived (Spitzenstätter and Schnell, 2022).

4.5.5 Subordinate Theme 2.2: Ways of Coping with Death

Participants' coping strategies when confronting thoughts of death were related to their personal histories and their broad life and cultural contexts. Participants described and were observed to use rationalising (Laura), detaching (Sheila), avoiding (Sarah), and

emotional suppression (Callum) to defend themselves against difficult feelings associated with death and dying. Allowing one to feel appeared to reduce the need for defences and increase insight into ways of coping. Sarah, aware of inheriting a family ("taboo") around death, showed insight into ("delayed responses to anxiety"), even in non-death-related situations, due to avoidant coping by ("pushing thoughts of death away"). This provided support for death anxiety as trans-diagnostic construct (Iverach *et al.*, 2014) in that Sarah's coping with death informed her ways of coping with anxiety. Ultimately, confronting her own mortality marked a change in how Sarah coped and helped thoughts of death become ("more manageable") amongst thoughts of how she wanted to live her life. This change provided support for Yalom's (1980) argument that existential anxieties are to be faced head on in order to find meaning in life, which, in itself, is central to the practice of existential psychotherapy.

Limited insight into ways of coping may have limited a more holistic engagement with the transformative aspects of death reflection, suggesting a tendency towards emotional suppression. Callum's rational approach to death involved emotional suppression and a focus on success to attempt to ensure ("peace and contentment and no regrets") at the end of life. Reminders of death led to increased adherence to cultural norms (career achievement and religious faith), similar to previous research (Rosenblatt *et al.*, 1989). Callum may have been less concerned than older participants with his own death, viewing his life more as 'time since birth' than 'time left to live' (Gesser *et al.*, 1988). This may have constituted a form of proximal defence against the threat of mortality (Pyszczynski *et al.*, 1999).

Participants' ways of coping with death were influenced by their professional roles. Laura wondered whether her ("separation") from feelings about death was both ("inauthentic") and a kind of occupational necessity due to working with the dying and the

need to be ("steady for others"). Dissociative coping was found to be protective against secondary trauma stress in nurses during Covid-19 (Tsouvelas *et al.*, 2022). This begs the question of whether death reflection may be of therapeutic benefit for specific working populations, such as health care and law enforcement, who experience death and death-related issues as salient stressors at work (Jamieson & Tuckey, 2017).

Participants' experiences of coping with death provided a critique of previous research. TMT studies, through the use mortality salience (MS) manipulations, claim that death awareness evokes negative affect, state anxiety, and social avoidance (Routledge *et al.*, 2010), desire for fame (Greenberg *et al.*, 2010). However, as MS operates on the *abstract existential system* (Cozzolino, 2006), these studies did not account for the positive effects of death reflection as it operates on the specific existential system (Cozzolino, 2006). Elsewhere, Grant and Wade-Benzoni (2009) proposed mortality awareness occurs through two *separate* systems. Firstly, *death anxiety* is the *hot* or experiential system individuals use to make sense of death intuitively, emotionally, and impulsively. Secondly, *death reflection* (Metcalfe & Mischel, 1999) is the *cool* cognitive system, which is more analytical and rational. This model fails to account for how participants showed an ability to experience both death anxiety and death reflection simultaneously in the current study. In so far as all participants showed some degree of transformation between high distress and more or less acceptance of death this suggests the integration as opposed to the distinctness of death anxiety and death reflection.

4.5.6 Subordinate Theme 2.3: Experiences of Loss

For the participants, death reflection served as a space into which personal experiences of loss and bereavement emerged and were observed to shape death attitudes in varied and complex ways. Parkes' (1988) *assumptive world*, mentioned in the introduction,

is an organised schema that helped to interpret and understand the intensity and complexity of participants' responses to traumatic loss and bereavement (Beder, 2005). Janoff-Bulman (1992) identified three core assumptions that keep us steady and give the world a sense of coherence: (1) The world is benevolent, (2) The world is meaningful, and (3) The self is worthy. In the event of a tragedy each of these assumptions is challenged and the assumptive world can be lost (Kaufmann, 2002), creating, in some cases, a need for the subjective world to be rebuilt (Attig, 2002).

These assumptions provide a framework to understand how Laura struggled to redeem the ("traumatic") loss of her brother and her father's response to it with a sense of cause and effect (assumption 2). Likewise for Sheila, the ("unexpected") nature of her mother's death challenged her assumption that death will happen ("one day"). Sarah was struck by the ("unfairness") of her imagined death at a young age against the assumption of a longer life. In each of these cases, death challenged the assumptive world called for the creation assumptions in light of the inevitability of death. This was seen in Laura's and Sheila's fear of losing loved ones after already sustaining significant losses.

In so far as death reflection evoked challenges to the assumptive world and painful feelings associated with previous losses, participants found it difficult to engage in death reflection. However, once ("past the threshold") of this loss, as Sheila put it, experiences of loss seemed to allow for "humbler" and richer reflections on life, death, and aspects of death acceptance. This "threshold" may also represent a higher frequency of bereavement due to age (Pyszczynski *et al.*, 2015). That said, death acceptance may not have extended as much to the death of others as one's own death, in Laura's and Sheila's case. While being aversive, challenge to the assumptive world fostered a more realistic sense of mortality. For instance,

Laura and Sarah's experiences of loss during their participation helped them to engage holistically with their own mortality. In Callum's case, lack of loss may have hindered engagement with death reflection. It may be that engaging with death reflection was only possible when participants had death-related experiences such as profound, illness, or near-death experience.

The process of death reflection inevitably evoked experiences of loss which themselves clearly impacted participant's way of relating to their own mortality. Loss, in so far as participants experienced and processed challenges to their assumptive worlds, appeared to make death reflection more complex and rewarding.

4.6 Discussion of Quantitative and Qualitative Findings

While quantitative and qualitative findings combined to provide a more comprehensive understanding of the effects of death reflection over time, the findings should be understood in terms of a preliminary feasibility study which was intended to guide future research into this novel intervention. Quantitative findings indicated that the DRM-based intervention was associated with, at best, modest effects in the outcomes investigated. There were notable trends towards significance indicating that death reflection could, over a longer duration, reduce Fear of Death and increase Wellbeing. Descriptively, there was evidence to suggest death reflection could effectively bring about positive changes in wellbeing and death attitudes. That said, statistical analysis for the four-week period did not yield significant results. Low statistical power due to the small sample size (n = 25) made it difficult to detect true effects, limited generalisability, created the possibility of different or opposite findings across multiple studies. Therefore, without a higher-powered sample, the conclusions that can be drawn based on the current findings are cautious. Given the underpowered sample

and the short duration of this study, further sufficiently powered, longitudinal studies are needed to see whether death reflection can indeed lead to psychological benefit.

Non-significant findings may be unsurprising, considering the gradual and complex nature of change as a result of death reflection. In so far as death attitudes are difficult to change over a short duration of time (Rasmussen *et al.*, 1998), this does not rule out the possibility of significant findings over a longer time period (Sliter *et al.*, 2014). Indeed, it has been proposed that interventions involving death awareness are required to be long-term, intensive, and participative in order to be effective (Mooney, 2005). Quantitative and qualitative findings indicated how death reflection, in facilitating an individual's journey through their responses to death, appears to work in a more gradual way and at a deeper, more complex level than other mortality awareness interventions. The resulting changes in death attitudes, while being more difficult to capture in a relatively brief time period, may be longer-lasting in so far as they may be related to intrinsic values that are more ingrained in human nature and less likely to fluctuate (Maslow, 1954; Rogers, 1963).

As a novel intervention, however, the sustainability of the effects of death reflection is currently not well understood (Blackie *et al.*, 2016). Even if participants engaged in defensive denial of their mortality, death reflection may have downstream consequences for living an authentic and meaningful existence (Rogers *et al.*, 2019). In addition, certain therapeutic interventions that involve processing feelings and thoughts about death (e.g. acceptance and commitment therapy or ACT, exposure therapy, cognitive behavioural therapy or CBT) facilitate therapeutic change by engaging individuals consciously and teaching them generic skills. These can typically be applied readily allowing the effectiveness interventions to be evaluated over a short time. Current findings suggest that

death reflection works more gradually and requires considerable commitment to successfully facilitate change at a deep level.

Findings indicated the presence of individual differences with regard to death reflection and existential concerns. The current study explored the influence of cultural background, religious beliefs, and coping strategies on death reflection. However, exploring other individual differences such as personality traits, attachment style may have added to our understanding of whether death reflection works, for whom it works, and what the mechanisms of change are. Previous research identified that the DRM led to greater identity integration (Blackie *et al.*, 2016). However, it was beyond the scope of this study to measure for identity integration.

TMT research, predominant in the field of mortality awareness, proposes that individuals primarily react on the terror resulting from subtle reminders of mortality (mortality salience or MS) by deploying unconscious, defensive strategies. These strategies result in an increased orientation toward culturally shared worldviews and in striving to boost one's own self-esteem (Pyszcynski *et al.*, 2004), which in turn is seen as generally related to social values and norms (Spitzenstätter & Schnell, 2022). Alternatively, a confrontation with one's own mortality, e.g. through death reflection, may at least raise existential questions. These, in turn, may consolidate or challenge a given meaning in life—or even motivate a person to start searching for meaning in life for the first time, depending on the individual starting point and the relationship to oneself (Davies *et al.*, 2011; Juhl & Routledge, 2015; McGregor *et al.*, 2001). Findings from the current study support the proposition that although death awareness can, at times, generate negative outcomes, it can also function to move people along more positive trajectories and contribute to a good life (Vail *et al.*, 2012). Therefore, results were broadly in line with dual existential systems theory.

4.7 Strengths and Limitations of Current Study

There were strengths and limitations to the quantitative and qualitative methodologies used in the current study when it came to capturing the complexity of participants' responses to death reflection. These will now be critically evaluated in line with the epistemological position of this research under the headings *Sampling*, *Design*, and *Measures*. Critical reflections on the intervention piloted will also be included under these headings.

4.7.1 Sampling

In order for sample results to be generalizable to the target population, they must be unbiased, and all members of the target population given the chance to take part (Barker *et al.*, 2015). This was not possible within the current sample due to the researcher's time and resource constraints. This was also not possible due to issues with recruitment and engagement, which contributed to the small sample size. One anticipated challenge was participant recruitment, particularly due to the emotional intensity and time commitment involved in participation as well as the relatively stringent participant exclusion criteria. In order to manage this, the researcher chose convenience and snowball sampling methods in order to access as many potential participants as possible. This was successful in recruiting participants with professional experience in death-related working who contributed to the richness of the qualitative findings. However, snowball sampling methods could present some bias in the results as participants may have only forwarded the research on to others whom they know share a similar interest (Barker *et al.*, 2015).

A second limitation of convenience sampling methods is the potential for some sub-populations within the target population to be excluded, thus yielding less representative results (Jager *et al.*, 2017). This was considered and efforts were made to recruit participants

from the local Essex community as socio-economic factors have been shown to influence death attitudes (Depaola *et al.,* 2003; Gire, 2014). These efforts were also made to improve the representativeness of the sample. However, including local community participation was a challenge. Engaging certain participants beyond the start of the study was also challenging, possibly due to attrition due to length of study, the emotionally intense nature of the intervention, and typical other reasons for attrition from studies in this topic area (Lunney *et al.*, 2003). Advertising the study early meant there was initially a lot of interest although when screening began some weeks later there appeared to be a relatively lower interest in participation.

Upon inspection of the gender data, a potential limitation is that the majority of the participants within the analysis were female (68% in the quantitative sample, 75% in the qualitative sample). It has been evidenced that women respond more to questionnaires than men (Becker, 2022) however this could have implications for the generalisability to a community sample as women have been found that females report higher levels of death anxiety compared to males (Abdel-Khalek, 2007; Gedik & Bahadır, 2014; Khoshi *et al.*, 2017; Atmaca, 2021; Spitzenstätter & Schnell, 2022).

Small sample sizes are among the methodological issues in mortality awareness research (Lunney *et al.*, 2003). Unfortunately, because of the elaborate study design, issues with participant engagement, a lack of further time resources, our initial sample size could not be increased. Thus, further studies are needed to replicate the current findings. As discussed, statistical power was too low in the current study to detect small effects of the intervention. A larger sample in the current study would increase statistical power, likely allowing for more decisive conclusions related to differences in selected outcomes between groups related to death reflection.

Another methodological issue related to sampling in this area of research is the limited amount of comparative, cross-cultural research in death studies more broadly (Walter, 2005). Existing death reflection studies reported having not accounted for specific cultural contexts (Cozzolino *et al.*, 2004), non-Western cultural contexts (Frias *et al.*, 2011; Blackie *et al.*, 2016), or cross-cultural comparisons (Cozzolino *et al.*, 2014). Given the cultural variations in how death is conceptualised (Depaola *et al.,* 2003; Burke *et al.*, 2010), this has left questions about the generalisability or results to non-Western populations unanswered. Amongst the strengths of the current study was the diversity of the sample, capturing individuals with a range of characteristics relevant to death attitudes including participants who were exposed to a range of cultural influences. The age range was also wide enough to explore trends based on age such as the impact of loss and bereavement on death attitudes.

4.7.2 Design

The design of the current study was both inspired by recommendations from previous research within the paradigms of social psychology (Blackie *et al.*, 2016) and developed to be most relevant within the paradigms of clinical psychology research. As a preliminary study exploring the potential benefits of a novel intervention, the design was intended to strike a balance between targeted evaluation against outcomes and a more exploratory approach. A mixed methods approach allowed the quantitative data to be explored qualitatively in greater detail and supplemented with the rich participant accounts of death reflection collected at interviews.

The design of the current study was intended to facilitate participants' death reflection. It is important to understand the similarities and differences that DR has to other interventions for death anxiety. Similar to meaning-centred interventions delivered for death

anxiety such as existential psychotherapy and logotherapy, death reflection acknowledges the motivational influence of death, seeing how the awareness of death can help people to prioritise their values and life goals to make the most of their time. While meaning-centred psychotherapeutic approaches tend to take a top-down approach (i.e. exploring themes related to death anxiety through talking therapy), death reflection takes a direct, raw, and experiential (bottom-up) approach to facilitating change by confronting us with the finiteness of life. Based on lived experience accounts of NDEs and post-traumatic growth, the *death scenario* simulates a compelling, distressing experience of unavoidable death. Having been appropriately (experientially) affected by the death scenario, participants are prompted to (cognitively) reflect on their lives and relationships to induce post-traumatic growth-like effects. This bottom-up, experiential approach bypasses the *abstract existential system* (responsible for defending us intellectually from death) (Cozzolino, 2006) and allows us to process death in a specific and personalised way.

While CBT for death anxiety typically involves cognitive restructuring (exploring alternative ways of thinking about death) and exposure (facing one's death-related fears in a gradual and prolonged way), these techniques are practiced separately. DR acknowledges how the experiential ad cognitive components of our relationship with death are interlinked. In contract to the principle of gradual desensitisation in exposure, DR deliberately induces a fear response necessary to create a growthful response. However, to have the best chance at inducing a growthful as opposed to a fearful or avoidant response requires that the intervention be delivered in a specific way. Death reflection has been shown to lead to defence-oriented motivational states and self-regulatory processes (Cozzolino, 2006). This kind of response was evident in Callum whose reflections on death seemed to increase his adherence to extrinsic values such as career success. This finding calls for more research on who may be more likely to benefit from death reflection.

Amongst the strengths of the current study was the use of structured and semi-structured data collection which both promoted appropriate engagement with the intervention and increased understanding of how participants experienced death reflection; through reflective journals, psychometric measures, qualitative interviews, keeping in touch emails and phone calls, and at debrief. Quantitative data collection, alongside the remote delivery and self-directed nature of the intervention, allowed for the measurement of how participant behave naturalistically. This also allowed us to track changes in outcomes via psychometrics.

One limitation of the design was the lack of effort to be as inclusive as possible by ensuring paper copies of the information sheet, consent form, and psychometric questionnaires. This left the study vulnerable to possible cohort effects that can influence results in case-control designs (Song & Chun, 2010). It is possible that the study's online methodology may have excluded individuals. The results indicated that, while a good range of ages within the working age adult population was achieved (Median = 25, Range = 35) with the youngest participant aged 20 and the oldest aged 55, we cannot rule out the possibility that including participants of 18 and 19 years old and participants between 55 and 65 years old would have changed our findings.

As this was a preliminary study exploring the potential effects of a novel psychological intervention, the researcher is aware that the methodology (online and telephone) could exclude those with physical disabilities such as movement disorders or blindness. While an online methodology provided sufficient benefit to be chosen for the present research, it also admits of a number of limitations (e.g. self-selecting and convenience bias, internet access issues).

A further limitation was the unavailability of a face-to-face meeting with a researcher. This was considered and led to the contact details of the researcher being available to

prospective participants prior to study participation so that questions could be asked even before the screening telephone call. Individuals were informed about the self-directed nature of the intervention. However, individuals may not have felt able to contact the researcher, possibly contributing to attrition and possible self-selecting bias. The online methodology relies upon an individual's introspective ability, without the researcher to ask questions of. Whilst this was a limitation it also reduces the impact of researcher bias (Barker *et al.*, 2015).

4.7.3 Measures

A number of limitations regarding measurement present fruitful opportunities for future research. Firstly, we cannot rule out alternative causal explanations for increases in wellbeing and reductions in fear of death and death avoidance. Secondly, predominantly self-report measurement, while allowing for convenience and breadth of information, may have introduced common method variance concerns, i.e. systematic error variance due to the response styles of the rater, item characteristics, and aspects of measurement that can threaten the validity of study findings when measures are collected using the same or similar methods (Podsakoff *et al.*, 2003; Podsakoff *et al.*, 2012). Lack of follow up data collection failed to test for long term effects, indicated by the statistical analysis but not statistically significant due, in part, to a small sample and lack of follow up. In addition, the design was not double-blinded (i.e., the researcher was aware of the rationale behind the study), which opens the possibility of various experimenter biases (Innes & Fraser, 1971).

Considering the diversity of the sample, it was possible to investigate individual differences in overall patterns of death attitudes, recommended by previous research in this area (Wong *et al.*, 1994), but it was only possible to do this broadly through descriptive statistics and qualitative analysis (e.g. age, gender, religious faith, occupation, etc.). While

theory (Erikson, 1963) and previous research (Blackie *et al.*, 2016) highlighted identity integration as a relevant variable for the current study, the lack of accessible and reliable identity integration measures prevented their inclusion.

Related to this, investigating the notion of 'worldview clusters' (Czerniawska & Szydło, 2020) that individuals endorse and that dictate their behaviour in relation to the *symbolic self* (as contrasted with the inherent self) (Sedikides and Skowronski, 1997) was also beyond the scope of this research. This investigation would introduce the reader to the tension inherent in Cozzolino's (2006) model by asking whether death is pushing us to engage too much with the symbolic self or whether it is allowing us to balance our intrinsic self with the symbolic self in a healthier, more authentic manner.

Whilst all measures in the study presented strengths in their ability to gain a respondent's opinion, appropriateness for online research and good psychometric properties, there were a number of limitations pertaining to measurement. Self-report responses are vulnerable to validity issues given that some individuals may experience difficulties in being introspective or self-aware (Barker *et al.*, 2015). Furthermore, motivation towards social desirability (Teh *et al.*, 2023) may limit the truthfulness of participant responses. Given the social stigma that still exists around mental health, participant may have been less likely to truthfully report their levels of wellbeing, fear and avoidance of death, depression, anxiety, and stress. The results presented here are therefore considered with above possible biases in mind.

4.8 Conceptual Strengths and Limitations

Amongst the conceptual strengths, existential theory provided an integrating and consistent conceptual framework used throughout the study. This framework was chosen for

two reasons, firstly because the philosophical background of death reflection is partly existential (Cozzolino & Blackie, 2013). Secondly, existential thought provides a unique insight into the direct link from our awareness of death and the subsequent fear this causes in us to the development of psychopathology (Yalom, 2011; Hoelterhoff, 2015). This framework was suitably employed alongside a phenomenological methodology in forming an *existential phenomenological* perspective that informed the intervention, the choice of outcomes, the qualitative data analysis, and the discussion of the results.

Aside from the merits of existential theory for this area of research, it is important to recognise the limitations and cultural specificity of conceptual frameworks about death developed mostly in European contexts (Cann & Troyer, 2017; Evans *et al.*, 2017). Critics have argued that existentialism is overly focused on taking a philosophical perspective towards the individual's subjective experience and neglects the importance of social structures and institutions that shape our lives (Raskin, 2001). Proponents of existentialism have responded that existentialism's individualistic focus is necessary to emphasize the unique experiences and perspectives of each person, essential for personal growth and development. Furthermore, the emphasis on personal responsibility and choice may be viewed as an important corrective to the deterministic and mechanistic views of human nature that dominate other philosophical traditions. With these points in mind, more comparative and culturally diverse accounts of death-related experiences will only help to evaluate the cultural validity of existential theory. The current research adds to the appeal for more cross-cultural research while acknowledging the methodological challenges that addressing this gap has presented for previous studies.

Amongst the challenges faced by the current research, while the intervention was found at qualitative interviews to promote life reflection as much as death reflection, the

emphasis on death may have overshadowed the life reflection for other participants. This may have misrepresented the nature of the research and under-emphasised the benefits of death reflection, which are well-established (see *Introduction*). Elsewhere, despite emphasising the multidimensional nature of death attitudes in the introduction, it was beyond the scope of this study to explore any more than two death attitudes subscales in the statistical analysis. That said, fear of death and death avoidance may be the most associated with psychopathology (Wong *et al.,* 1994). As such, they may be most important death attitudes to target in a death awareness intervention such as death reflection.

As this study was completed as part of a professional doctorate in clinical psychology, the clinical and research expertise of the researcher, including in existential theory and philosophy, was relevant both to the topic and to designing, delivering, and evaluating the DRM-based intervention as a psychological intervention. These are skills within the scope of practice of a clinical psychologist according to The Health and Care Professionals Council (HCPC, 2013).

4.9 Theoretical Implications of the Study

In mortality awareness research, two approaches for investigating the effects mortality awareness, categorised for argument's sake as TMT and death reflection, have produced divergent findings. As the prevailing theory within social psychology, TMT (Solomon *et al.*, 1991) emphasises the anxiety-provoking nature of death-related cognitions following mortality cues that lead to self-protective actions and intergroup conflict via worldview defence (Greenberg *et al.*, 1990; Solomon *et al.*, 1991; Curşeu *et al.*, 2021). As an alternative to this approach, researchers have demonstrated that death reflection fosters positive, growth-orientated outcomes such as prosocial behaviour (Cozzolino *et al.*, 2004; Cozzolino,

2006; Lykins *et al.*, 2007; Grant and Wade-Benzoni, 2009; Yuan *et al.*, 2019), similar to the post-traumatic growth observed after near death experience (Tedeschi & Calhoun, 2004).

It is argued that, while both approaches offer theoretically justified ways of seeing mortality awareness, death refection allows for a more comprehensive and holistic processing of mortality. Support for this argument is in both the individual benefits (gratitude: Frias *et al.*, 2011; a greater desire to pursue meaning: Cozzolino *et al.*, 2004; identity integration: Blackie *et al.*, 2016) and social benefits (prosocial behaviour: Cozzolino & Blackie, 2011, relationship-oriented behaviour: Tedeschi & Calhoun, 1996) of death reflection. As an approach to understanding mortality awareness, death reflection is historically more recent and therefore its theoretical implications for research in clinical psychology are less well understood than those of TMT. Considering the mechanisms by which death reflection may lead to psychological benefit over time, life review and perspective taking (similar to mentalising; Bateman and Fonagy, 2010) were two aspects of NDEs that seemed to facilitate change in death attitudes in the current study; supporting viewing the effects of death reflection as parallel to those of post-traumatic growth (Cozzolino *et al.*, 2004).

Death reflection is theoretically based on Cozzolino's (2006) *dual-existential-systems model*. Cozzolino's model critiques TMT in that mortality salience (MS) manipulations activate only abstract as opposed to specific, individuated mortality awareness. Current findings observed that mortality awareness activated both *abstract existential system* and the *specific existential system*, originally thought of as mutually exclusive systems (Cozzolino, 2006). Indeed, while individuals showed more or less sustained fearful responses to their own imagined deaths, death reflection also provided a contemplative space for participants to review their responses to mortality awareness over time. Furthermore, depending on the

mortality cue and the system activated, participants experienced different emotional, cognitive, and behavioural outcomes. While Sarah and Callum both had fearful responses to the *death scenario*, Sarah's previous near-death experience contributed to a re-orientation towards values during the intervention whereas Callum's image of a ("deathbed") at a distant point in the future strengthened worldview defence and arguably strengthened extrinsic values related to achievement and success.

This finding was supported by evidence, albeit from a clinical population, that individuals with advanced and terminal disease could sustain a 'double awareness' of a foreshortened life, or even of imminent death, co-existing with a strong will to live and a tendency to find life meaningful (Rodin & Zimmermann, 2008). Similarly, death reflection participants' experiences of death acceptance appeared ambivalent in that they wanted to accept their own mortality while feeling held back by the defences deployed against their fear of death, ("it's not that easy") (Laura). This finding questioned the mutual exclusivity of systems in Cozzolino's (2006) model, suggesting the relationship between the *abstract existential system* and the *specific existential system* may be better described as oscillating or simultaneous. Support for this suggestion is based in the models of mind in contemporary psychoanalysis in which levels of awareness and diverse aspects of self–experience, including the death of the self, may shift and fluctuate (Rodin & Zimmerman, 2008).

4.10 Clinical Implications of the Study

Fear of death is an extremely common human experience, and the dread of death may, in certain cases, result in immense distress and maladaptive defence mechanisms. Empirical research provides support for death anxiety as a trans-diagnostic construct (Iverach *et al.,* 2014). Despite the central role death anxiety appears to play in multiple psychological

presentations (Menzies *et al.*, 2019; Menzies & Whittle, 2022), standard treatments do not typically address the underlying fears of death (Iverach *et al.,* 2014). This may contribute to the “revolving door” phenomenon in clinical settings, with a client experiencing a successful treatment for one problem, only to return to treatment later with an apparently different disorder (Iverach *et al.,* 2014, p. 590). On this basis, Menzies and Whittle (2022) called for the development of novel treatments which specifically target death anxiety. Stepping back, we can agree that, sooner or later, all individuals must, in their own ways, come to terms with their personal mortality. This study hopes to add to the exploration of the benefits of mortality awareness while investigating the different routes individuals take towards death acceptance (Wong *et al.*, 1994).

Regarding specific clinical applications, death reflection may be particularly relevant for specific working populations such as those in health care, end of life care, and law enforcement. Individuals in these occupations may experience death and death-related issues as salient stressors at work (Yuan *et al.*, 2019). Mortality cues may contribute to occupational stress in a way that often falls outside of employees' control (Yuan *et al.*, 2019). Mindfulness training (Jamieson & Tuckey, 2017) has been proposed as a suitable intervention with its focus on concrete processing of the present (Brown & Ryan, 2003) and social connectedness (Van Doesum *et al.*, 2013). These are also some of the defining features of death reflection which offers the added benefit of promoting individual and social benefits (see *Theoretical Implications* above). Death reflection has also been shown to foster ways of coping associated with burnout prevention for those who work in palliative care (Kearney *et al.*, 2009; Maslach *et al.*, 2001; Slocum-Gori *et al.*, 2011; Vachon, 2016). Related to this, there was concern that participants going through experiences of loss during the study which may have confounded results. On the contrary, there was anecdotal evidence that their experiences, as reminders of the inevitability of death, appear to have strengthened

both engagement with death reflection and strengthened the effects of death reflection. This may be pertinent for evaluating the feasibility of death reflection for working populations encountering frequent reminders of death.

Regarding delivering death reflection as an intervention, it may be important for researchers/clinicians to help participants to manage their levels of fear and anxiety as some increase in fear of death appears to be a necessary part of the benefit, as observed in the discussion of quantitative analysis. This study has shown that a remote death reflection intervention can be delivered effectively, which favours accessibility and affordability. Meanwhile, it was beyond the reach of this study to account for how death reflection may be delivered most effectively. It failed to account for whether some individuals saw significant improvement and others did not.

4.11 Future Research Recommendations

On the basis of the current literature review and the multiple important theoretical and clinical applications of the current study, future research in clinical psychology/applied psychology would benefit from exploring the findings from social psychology related to the effects of death awareness. Broadly speaking, more studies are needed in this area with larger samples investigating the effects of death reflection in relation to wellbeing, death attitudes, and a range of common mental health problems whose relationship with death anxiety may be overlooked (Iverach *et al.*, 2014). Research highlighting the duration of 'death processing' suggests that encountering death over a longer period may lead individuals to transcend defensiveness and maintain intrinsic goals or become more intrinsically oriented (Lykins *et al.*, 2007). On this basis, future research would benefit from longitudinal designs with follow ups to ascertain the sustainability of death reflection effects over time. For

example, this would allow us to measure the potential differential impact of Time on Wellbeing that varied between treatment and control groups in the current study.

The accuracy of the generalisability of findings can be improved via replication (Barker *et al.*, 2015). Continuing to explore the potential benefits of death reflection as a psychological intervention will help to evaluate the reliability of findings in the extant research. For instance, given that the current sample was predominantly female, and the impact of gender on death anxiety (Abdel-Khalek, 2007; Gedik & Bahadır, 2014; Khoshi *et al.*, 2017; Atmaca, 2021; Spitzenstätter & Schnell, 2022), future samples should also aim to better represent males. The generalisability of findings from future studies may also benefit from including more diverse settings and populations as there is a greater amount of research on mortality awareness for individuals with terminal illness (Rodin & Zimmerman, 2008) than individuals who face no immanent risk to life.

Due to the small sample size, it was decided to exclude authenticity as an outcome in the statistical analysis. Qualitative analysis revealed that participants found authenticity made intuitive sense to them and it was helpful to make sense of perceived changes during and after the intervention. Including this in future research may allow for a better understanding of whether and to what extent authenticity is associated to changes in wellbeing and death attitudes. Related to authenticity, further studies may benefit from assessing for the possible mediating or moderating effect of ego integrity (Erikson, 1963) on wellbeing and death attitudes.

Existing studies have suggested that death reflection was associated with a range of positive, seemingly related outcomes, e.g. enhanced meaning, identity integration, gratitude, values, identity and self-concept, motivation, well-being, body image, gratitude, death

acceptance, and prosocial behaviour. However, this is a fairly recently established area of research and further research is needed to explore the individual differences, cultural variations, long-term effects, and underlying mechanisms behind these outcomes. Additionally, qualitative studies like this one can provide valuable insights into the subjective experiences and effects of death reflection on individuals' lives.

Future research using the data set in the current study could analyse individual level change to identify whether some individuals saw significant improvement and others not. This research could consider whether there were any patterns in terms of who did and did not benefit from death reflection and whether/how these outcomes mapped onto their interview data. Exploring the links between patterns in the data and 'worldview clusters' (Czerniawska & Szydło, 2020) may be a fruitful approach for future studies. Based on a review of the literature, integrating findings from diverse methodologies and exploring interdisciplinary perspectives may help advance our understanding of the complex relationship between mortality awareness and human psychology.

4.12 Conclusion

In summary, the current preliminary study adds to the existing literature in suggesting that positive changes in attitudes towards one's mortality and other outcomes relevant to mental health can be stimulated by mortality awareness interventions. While quantitative findings provided just modest support for this suggestion, more convincing support was provided by descriptive statistics and qualitative findings. This is the very first stage in developing a novel intervention from an important area of emerging theory in social and existential psychology. Based on the results, there is preliminary evidence that the death reflection manipulation can bring about psychological benefit. Thus, there is a rationale for the DRM to be developed into a form of psychological therapy in the future, pending further research. It is hoped that the

results will aid our understanding of the psychological benefits of existential contemplation more generally and support the application of this novel approach to a range of psychological presentations where there is clinical need.

4.13 Chapter Summary

This chapter began by summarising the aims and methods used to explore the potential psychological benefits of death reflection over time. Having presented the results of quantitative and qualitative analysis, findings were discussed, outcome by outcome, to match the structure of the results chapter, before the qualitative findings were discussed, subordinate theme by subordinate theme. A synthesis of quantitative and qualitative findings was then set out and these findings were considered in the context of previous research and in relation to the research hypotheses of the current study. Turning to the methodological strengths and limitations of the research, these were discussed before the conceptual strengths and limitations were considered. The theoretical and clinical implications of the findings were important to consider before recommendations for future research were made.

4.14 Account of Self-Reflexivity

While my academic interest led me to this topic, my personal investment in it has increased as the study progressed. Researching mortality awareness, particularly as it involved designing an intervention and conducting qualitatively research, inevitably shone a light on my personal experiences related to death and mortality. This process revealed my blind spots, my tacit subscription to assumptions and norms, and brought some of my unrecognised feelings about death to the fore. I believed I was more in touch with my own mortality than I in fact was. On reflection, through my indecisiveness and assumption of a long life I was more like how Schopenhauer (1891, p.23) put it: “In early youth, as we

contemplate our coming life, we are like children in a theatre before the curtain is raised, sitting there in high spirits and eagerly waiting for the play to begin". Participating in a death-themed group reflective session at a *death café* was a wonderful opportunity for experiential learning about how I have made meaning of death and for learning about how others make meaning of it.

In running the study, my learning continued as I noticed how individuals who were genuinely interested in participating stopped engaging, leaving me to wonder whether death felt too raw or intense to consider at that time. Designing a recruitment strategy led me to examine my biases (e.g., in deciding inclusion and exclusion criteria, thinking about risks vs benefits of the intervention). Referring to the aforementioned assumptions and norms, I was careful for these not to obstruct my view of the major cultural differences in how death is positioned and conceptualised.

I was continually drawn to reflect, alongside the study participants, on the changing relationship with my mortality. I come away from this experience more open to opportunities for closeness and alignment of values amongst those who have experienced loss and have come with the understanding that "life continues in a different way" (Laura). More of a place for spirituality has developed in me as a source of connection to all living things and humility in the face of mortality. If my relationship to my mortality happens to be representative of that of others, I would urge them to consider that death may be life's most challenging but most rewarding inevitabilities.

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Appendices

4.15 **Appendix A** – Death Scenario

Death Scenario

Imagine that you are visiting a friend who lives on the 20th floor of an old, downtown apartment building. It's the middle of the night when you are suddenly awakened from a deep sleep by the sound of screams and the choking smell of smoke. You reach over to the nightstand and turn on the light. You are shocked to find the room filling fast with thick clouds of smoke. You run to the door and reach for the handle. You pull back in pain as the intense heat of the knob scalds you violently. Grabbing a blanket off the bed and using it as protection, you manage to turn the handle and open the door. Almost immediately, a huge wave of flame and smoke roars into the room, knocking you back and literally off your feet. There is no way to leave the room. It is getting very hard to breathe and the heat from the flames is almost unbearable. Panicked, you scramble to the only window in the room and try to open it. As you struggle, you realize the old window is virtually painted shut around all the edges. It doesn't budge. Your eyes are barely open now, filled with tears from the smoke. You try calling out for help but the air to form the words is not there. You drop to the floor hoping to escape the rising smoke, but it is too late. The room is filled top to bottom with thick fumes and nearly entirely in flames. With your heart pounding, it suddenly hits you, as time seems to stand still, that you are literally moments away from dying. The inevitable unknown that was always waiting for you has finally arrived. Out of breath and weak, you shut your eyes and wait for the end.

4.16 **Appendix B** – Participant Information Sheet

Participant Information Sheet

Project title
Exploring the Potential Psychological Benefits of Death Reflection over Time.

Invitation paragraph

Our names are Mike Fitzpatrick and Sarika Sharma. We are Trainee Clinical Psychologists undertaking a Doctorate in Clinical Psychology at the University of Essex. We would like to invite you to take part in a research study. Before you decide whether to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

What is the purpose of the study?

Research shows that working age adults consistently exhibit higher levels of anxiety about death when compared with younger and older adults. This may be due to the presence of 'extrinsic' motivators amongst this age group such as social approval, status, wealth, and power. These ends may function as a way for working age adults to avoid their own mortality. Death anxiety has been shown to be a common and essential feature across a range of mental health difficulties. Perhaps counter-intuitively, interventions using mortality awareness (including death reflection, as in the current study) have been shown to be effective across a range of outcomes including reduced death anxiety, increased well-being, and pro-social behaviour. The purpose of the current study is to explore the psychological benefits of reflecting on death and life for working age adults, who may stand to gain the most from this intervention. The current study is hoped to demonstrate whether, how, and for how long a death reflection intervention leads to psychological benefits. This study is being undertaken as part of the principle researchers' doctoral training.

Why have I been invited to participate?

You have been invited to participate as you are a working age adult. We hope to recruit 50-60 participants for this study.

Do I have to take part?

No, taking part in the research is entirely voluntary. If you agree to take part, you will be asked to sign a consent form. Throughout the study, you will be free to withdraw at any time, without giving a reason. Both participation and withdrawal would have no impact on your current or future employment as all data collected will be anonymised. There are limitations on your right to withdraw. The data will be anonymised within a certain timeframe so withdrawal of data will only be possible up to the point of anonymization. If you are a student, your decision will have no impact on your marks, assessments, or future studies. To withdraw from the study, participants can contact the principle researchers by email: (epunft.reflectionsonlife@nhs.net), stating their wish to withdraw. If any information has already been collected from you, in the event of your withdrawal from the study, it will be destroyed.

What will happen to me if I take part?

After you have signed the consent form, one of the principles researcher's will contact you to arrange a mutually convenient time to meet over the telephone or by video call. The researcher will have already requested via email that you complete a brief questionnaire asking general demographic questions, such as about your age and gender. By telephone or video call, you will be thanked for your interest in the study and asked a number of 'screening' questions to gauge whether you are a suitable candidate for the study. If you are suitable for the study, you will be informed shortly thereafter. Suitable candidates will be invited to participate in the intervention which will be delivered remotely via Microsoft Teams and one other platform. The intervention will be four weeks in duration. Participants will be required to read and engage with content on the platform and complete a set of questionnaires once per week. To benefit most from the intervention, it is recommended that participants spend a brief time each day reflecting on the content. Researchers will be in contact with participants throughout the four weeks. However, participants should be aware that the intervention has been designed to be *self-directed* and participation will not involve ongoing contact with the researchers. After the four weeks participants may or may not be contacted by researchers to take part in further research activities. The further research will involve, firstly individual interviews with a researcher, conducted remotely over Microsoft Teams and audio recorded. Secondly, further research will involve a focus group with other participants, also conducted remotely over Microsoft Teams. During the interviews and focus group you will be asked about your experience of the intervention. The recorded audio will then be transcribed into text by the researcher and the audio recording destroyed. The transcribed data will then be used to identify themes that arose from participant experiences of the intervention. A few months later the researchers will be in contact with you to let you know the themes that arose.

What are the possible disadvantages and risks of taking part?

Taking part in this research requires your time. It is possible that you may find it emotionally upsetting to reflect on the themes of life and death. The researchers will support you if this were to occur and will signpost you to services that may be able to provide support.

What are the possible benefits of taking part?

Participants will be offered a £15-25 incentive for taking part in the study. The amount will depend on the length of participation. Participants will be compensated after their participation in the study. Whilst we cannot guarantee any additional direct benefits from taking part in this research, having the space to talk openly about your experiences may bring about the same psychological benefits as participants in previous similar studies have experienced. By participating in the research, you will be helping to provide valuable information and helping researchers to better understand this under-researched area. It is hoped that the results of this research will have meaningful clinical implications and may be used to inform future research studies.

What information will be collected?

You will be 'screened' by one of the researchers to ensure your safety throughout the intervention and that you are a suitable candidate for the study. Information on previous mental health difficulties, treatments, medications, and referrals to mental health services will be collected. Demographic information will be collected from you, such as your age, gender and job title. This data will be anonymised for a period after the start of the study in case participants wish to withdraw from the study. You will be asked to provide your name and contact details so we are in a position to support your safety and wellbeing during the course of the study.

Will my information be kept confidential?

Yes, your participation in the study and all information that you provide will remain confidential. Individuals who agree to participate will be given a unique participant number to protect their anonymity. Data will be stored on an encrypted file on a password protected computer. Any hard data copies will be scanned onto a computer and then shredded. All data will be stored securely for the next 10 years and will destroyed securely after this time. Only the researcher and the research supervisor will have access to the data. Whilst unlikely, if, during the research you disclose information that leads the researcher to believe that you or others are at risk of harm, the researcher may have a duty of care to inform an appropriate authority.

What is the legal basis for using the data and who is the Data Controller?

As this research is being undertaken by doctoral students, the legal basis for processing your data is through your consent. Consent must be freely given. Participants can direct queries regarding data use and data control to (dpo@essex.ac.uk)

What should I do if I want to take part?

Should you wish to take part in this research, please inform the researchers, Mike Fitzpatrick and Sarika Sharma, by sending an email stating your desire to participate to (epunft.reflectionsonlife@nhs.net).

What will happen to the results of the research study?

The results of the research will be written up as part of the researchers' doctoral theses. The thesis may be submitted for publication in an academic journal or presented at conferences. Some direct quotes for the participants may be used in the write up, but all information is anonymous and no identifiable information will be included. The researcher will provide participants with an electronic copy of the final thesis, should they wish to receive it.

Who is funding the research?

This research is being undertaken as part of a doctoral research project in Clinical Psychology. The research is funded by the University of Essex.

Who has reviewed the study?

This study has gained ethical approval by the University of Essex Human Research Ethics Subcommittee 2. It has also been reviewed by Essex Partnership University Trust's Research and Development Authority.

Concerns and Complaints

If you have any concerns about any aspect of the study or have a complaint, in the first instance please contact the principal researchers of the project, using the contact details below. If you are either still concerned, if you think your complaint has not been addressed to your satisfaction or you feel that you cannot approach the principal researchers, please contact the Departmental Director of Research in the department responsible for this project (Professor Camille Cronin camille.cronin@essex.ac.uk). If you are still not satisfied, please contact the University's Research Governance and Planning Manager, Sarah Manning-Press (sarahm@essex.ac.uk). Please include the ERAMS reference ETH2122-1432.

Name of the Researcher/Research Team Members

Principal Researcher:
- Mr Mike Fitzpatrick, Trainee Clinical Psychologist and Doctoral Student epunft.reflectionsonlife@nhs.net

Principal Researcher:
- Ms Sarika Sharma, Trainee Clinical Psychologist and Doctoral Student epunft.reflectionsonlife@nhs.net

Research Supervisors:
- Dr Hugo Senra, Honorary Lecturer at University of Essex School of Health and Social Care hrsenra@gmail.com
- Professor Susan McPherson, Senior Lecturer at University of Essex School of Health and Social Care smcpher@essex.ac.uk

4.17 **Appendix C** – Participant Consent Form

Consent Form

Title of the Project: Exploring the Potential Psychological Benefits of Death Reflection over Time.

Research Team:

Principal Researchers:

Mr Mike Fitzpatrick
Trainee Clinical Psychologist
Doctoral Student
epunft.reflectionsonlife@nhs.net

Ms Sarika Sharma
Trainee Clinical Psychologist
Doctoral Student
epunft.reflectionsonlife@nhs.net

Research Supervisors:

Professor Susan McPherson
Senior Lecturer at University of Essex School of Health and Social Care
smcpher@essex.ac.uk

Dr Hugo Senra
Honorary Lecturer at University of Essex School of Health and Social Care
hrsenra@gmail.com

Dr Philip Cozzolino
Lecturer at University of Essex School Department of Psychology
pjcozz@essex.ac.uk

Please initial box

1. I confirm that I have read and understand the Information Sheet dated 03/03/2023 for the above study. I have had an opportunity to consider the information, ask questions and have had these questions answered satisfactorily. ☐

2. I understand that my participation is voluntary and that I am free to withdraw from the project at any time without giving any reason and without penalty. I understand that any data collected up to the point of my withdrawal e.g. will be destroyed; cannot be withdrawn because it cannot be identified. ☐

3. I understand that, due to the nature of the intervention used in this research, it may find it emotionally upsetting to reflect on the themes around life and death.

4. I understand that the identifiable data provided will be securely stored and accessible only to the members of the research team directly involved in the project, and that confidentiality will be maintained.

5. I understand that my fully anonymised data may be used for academic publications, reports, web pages, and other research outputs such as being presented at research conferences.

6. I understand that the data collected about me will be used to support other research in the future, and may be shared anonymously with other researchers.

7. I give permission for data about me to be collected via interviews and audio/visual recordings and for that data to be deposited in a research data repository so that they will be available for future research and learning activities by other individuals.

8. I agree to take part in the above study.

Participant Name [PRINTED]	Date	Participant Signature
___________________________	__________	___________________________
Researcher Name [PRINTED]	Date	Researcher Signature
_____________________	__________	___________________________

4.18 **Appendix D** – Participant Demographic Information Form

DEMOGRAPHIC INFORMATION

Name:

MALE / FEMALE / TRANSGENDER / GENDER-NEUTRAL / NON-BINARY**:**

Age:

Ethnicity:

Employment status:

EMPLOYED FULL-TIME / EMPLOYED PART-TIME / SELF-EMPLOYED / ON MATERNITY LEAVE / ON SICK LEAVE / UNEMPLOYED / RECEIVING BENEFITS /

If employed, what is your occupation?

Please circle your relationship status:

SINGLE / CIVIL PARTNERSHIP / MARRIED / SEPARATED / DIVORCED

If anyone lives with you, please state who they are:

WIFE / HUSBAND / SON / DAUGHTER / OTHER:

Who is currently in your support network?

Please circle which of the following describes you best:

RELIGIOUS / NO RELIGION (ATHEIST) / SPIRITUAL

If you are religious, what religion do you practice?

Please indicate the highest level of education you have reached:

PRIMARY SCHOOL / GCSE / A-LEVELS / NVQ / COLLEGE / UNIVERSITY

How many years have you spent in education in total?

Have you ever been diagnosed with a mental health problem or condition? YES / NO

If yes, please name the problem/condition:

Are you currently taking medication for a mental health problem or condition? YES / NO

Are you using alcohol/drugs/non-prescription medication to self-medicate? YES / NO

Do you have reliable access to the internet and access to a private/confidential space from which to participate in remote sessions? YES / NO

4.19 **Appendix E** – Clinical Outcomes in Routine Evaluation - 10 Version 1.1 Scale

Clinical Outcomes in Routine Evaluation - 10 Version 1.1 (*CORE-10 v1.1*)
(Barkham *et al.*, 2013)

CORE-10 v1.1 items

1. I have felt tense, anxious or nervous
2. I have felt I have someone to turn to for support when needed
3. I have felt able to cope when things go wrong
4. Talking to people has felt too much for me
5. I have felt panic or terror
6. I made plans to end my life
7. I have had difficulty getting to sleep or staying asleep
8. I have felt despairing or hopeless
9. I have felt unhappy
10. Unwanted images or memories have been distressing me

CORE-10 v1.1 response categories and scores

- Not at all (0)
- Only occasionally (1)
- Sometimes (2)
- Often (3)
- Most or all of the time (4)

Table 4
CORE-10 v1.1 Clinical scores and interpretations

Clinical Score	Interpretation
0 - 5	Healthy (non-clinical range)
6 - 10	Low level distress (non-clinical range)
11 - 14	Mild psychological distress

15 - 19	Moderate psychological distress
20 - 24	Moderate to severe psychological distress
25 - 40	Severe psychological distress

*These scores are taken from Connell & Barkham (2007).

4.20 **Appendix F** – Facilitating Research Fund Approval Form

<table>
<tr><td colspan="2">School of Health and Social Care

Application for support from Facilitating Research Fund (FRF)

(Please use this form)

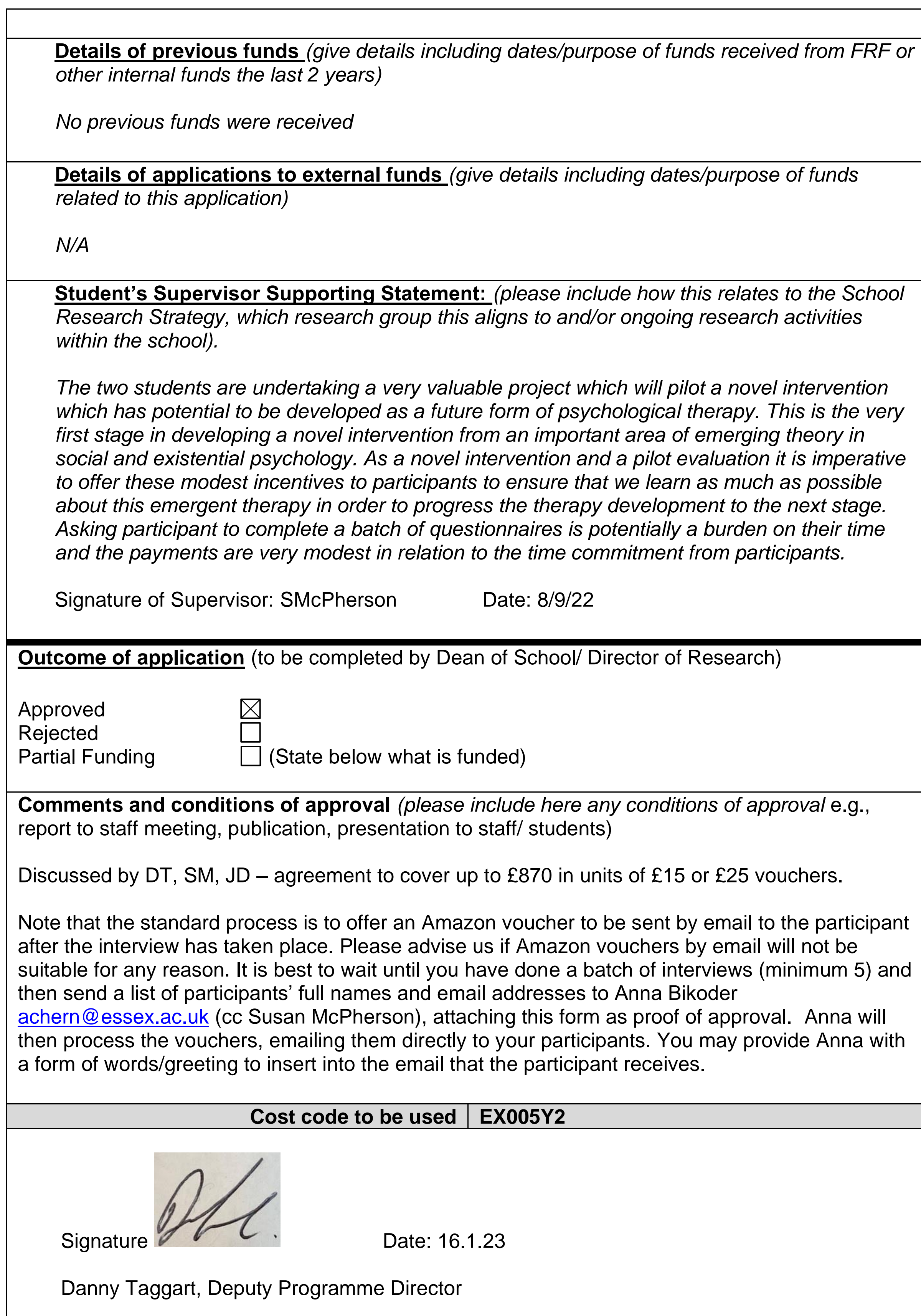
FOR DCP STUDENTS ONLY in School of Health and Social Care</td></tr>
<tr><td>NAME: Mike Fitzpatrick, Sarika Sharma</td><td>SUPERVISOR: Prof Susan McPherson, Dr Hugo Senra</td></tr>
<tr><td>PROGRAMME: Doctorate in Clinical Psychology</td><td>YEAR OF STUDY (e.g., 1st year): 2nd year</td></tr>
<tr><td colspan="2">SCHOOL RESEARCH GROUP: Research module: HS763-8-FY Clinical Research</td></tr>
<tr><td>AMOUNT REQUESTED: £870.00</td><td>DATE OF APPLICATION: 08/09/2022</td></tr>
<tr><td>ETHICAL APPROVAL:
Has approval been submitted? If so, please include your ethical approval confirmation and reference number.</td><td>If not, please explain why:
We have submitted our research proposal for ethical approval having made changes suggested by our supervisors to increase the likelihood of ethical approval.</td></tr>
<tr><td colspan="2"><u>Request for Conference Support</u> (give FULL details of Conference, whether you are giving a paper or not, and cheapest available costings)

No conference support is being requested.</td></tr>
<tr><td colspan="2"><u>Request for other support</u> (give FULL details)

We are requesting £870 to fund providing incentives for participants to take part in our study. Data collection will be carried out over the course of 3.5 months. Participants will need to commit time and energy to being part of our study. We plan to offer each of our target sample of 50 participants:

£15 for completing pre post questionnaires only (n=38) – total £570
£25 for completing pre-post questionnaires and a follow up qualitative interview (n=12) – total £300

Payments would be made at the end of the individual's participation if they complete both time points in order to incentivise study completion at both time points</td></tr>
</table>



Details of previous funds *(give details including dates/purpose of funds received from FRF or other internal funds the last 2 years)*

No previous funds were received

Details of applications to external funds *(give details including dates/purpose of funds related to this application)*

N/A

Student's Supervisor Supporting Statement: *(please include how this relates to the School Research Strategy, which research group this aligns to and/or ongoing research activities within the school).*

The two students are undertaking a very valuable project which will pilot a novel intervention which has potential to be developed as a future form of psychological therapy. This is the very first stage in developing a novel intervention from an important area of emerging theory in social and existential psychology. As a novel intervention and a pilot evaluation it is imperative to offer these modest incentives to participants to ensure that we learn as much as possible about this emergent therapy in order to progress the therapy development to the next stage. Asking participant to complete a batch of questionnaires is potentially a burden on their time and the payments are very modest in relation to the time commitment from participants.

Signature of Supervisor: SMcPherson Date: 8/9/22

Outcome of application (to be completed by Dean of School/ Director of Research)

Approved ☒
Rejected ☐
Partial Funding ☐ (State below what is funded)

Comments and conditions of approval *(please include here any conditions of approval* e.g., report to staff meeting, publication, presentation to staff/ students)

Discussed by DT, SM, JD – agreement to cover up to £870 in units of £15 or £25 vouchers.

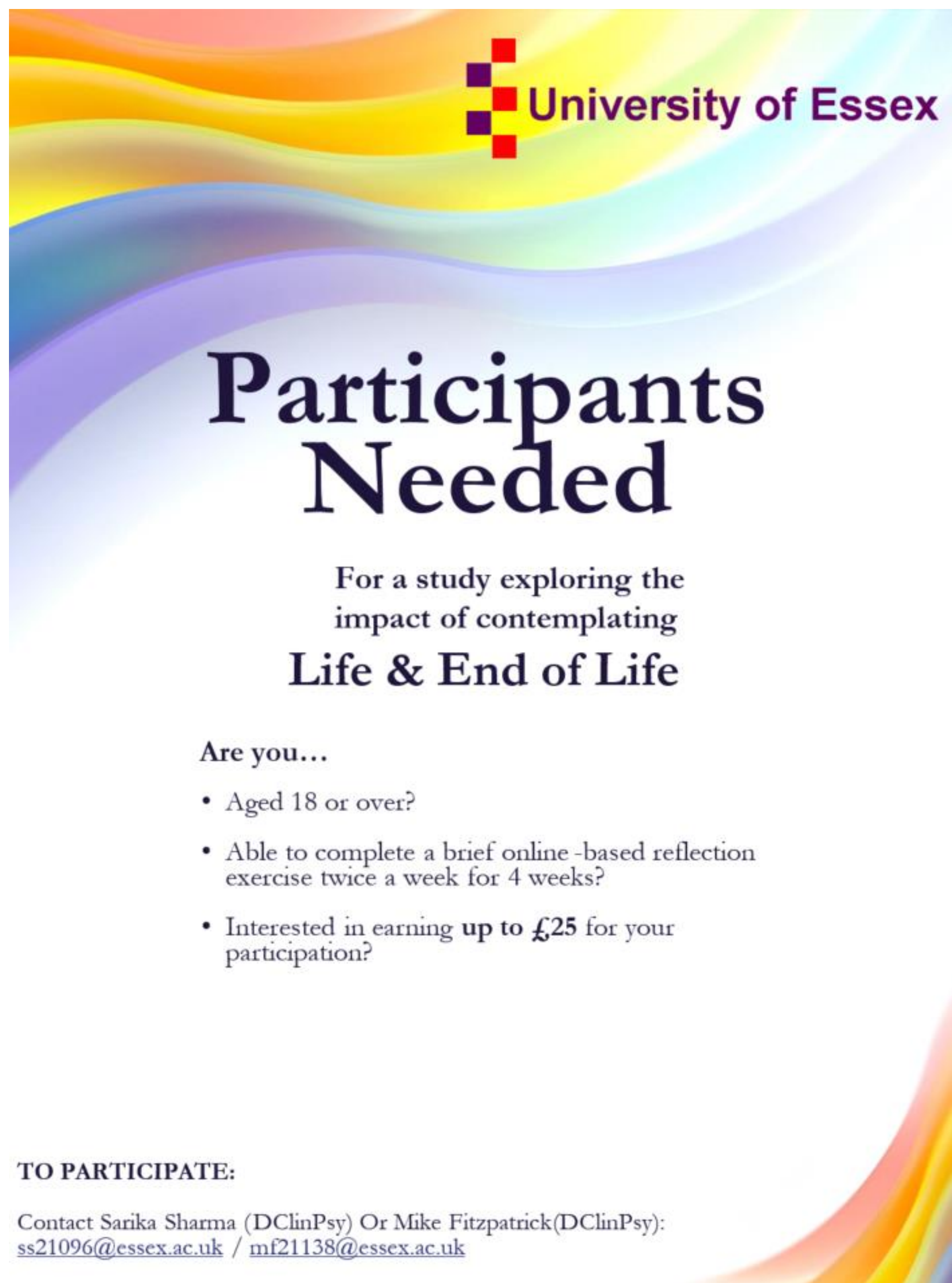
Note that the standard process is to offer an Amazon voucher to be sent by email to the participant after the interview has taken place. Please advise us if Amazon vouchers by email will not be suitable for any reason. It is best to wait until you have done a batch of interviews (minimum 5) and then send a list of participants' full names and email addresses to Anna Bikoder achern@essex.ac.uk (cc Susan McPherson), attaching this form as proof of approval. Anna will then process the vouchers, emailing them directly to your participants. You may provide Anna with a form of words/greeting to insert into the email that the participant receives.

Cost code to be used	EX005Y2

Signature Date: 16.1.23

Danny Taggart, Deputy Programme Director

4.21 **Appendix G** – Study Advert



4.22 **Appendix H** – Death Reflection Script

Death Reflection Script

Preparation

Sit in a comfortable position with your back straight and let your body relax. Spend some time letting your mind settle down until you find yourself in the present moment. Notice your breathing and where you are holding the breath in your body. Notice where any tension in

your body might be. Feel the ground beneath your feet. Notice the sounds around you. Let go of thoughts of the past or the future. Consciously bring awareness to your here-and-now experience, with openness, interest and receptiveness.

Recollection of the Death Scenario

Bring to mind the scenario that you read in week 1. Allow your mind to pause and reflect on the nature of life, openly and honestly, acknowledging that life ends, for all of us. You're alive today. One day, you will die. It is possible that you will have strong emotions thinking about this, like fear, sadness, a sense of loss. Although we don't want to cause you distress, experiencing these feelings shows that you're taking the ideas seriously and really contemplating them. Do your best to sit with and accept these feelings allowing them to happen rather than pushing them away or avoiding thoughts of death. Try to experience these feelings and this awareness of your mortality with your entire being, whatever that means to you.

Prompts to Encourage Acceptance of Difficult Content

- Observe; Breathe; Expand; Allow
- Pick the strongest sensation; observe it like a scientist - non-judgmentally, without trying to interfere; accept it; then repeat with next sensation…
- Visualise feelings as objects: shape, colour, weight, temperature, texture, etc.

Another way to get a sense of your life moving continuously towards death is to imagine being on a train which is always traveling at a steady speed - it never slows down or stops, and there is no way that you can get off. This train is continuously bringing you closer and closer to its destination: the end of your life. Try to really get a sense of this, and check what thoughts and feelings arise in your mind.

Additional Prompts on the Inevitability and Uncertainty of Death

There are several billion people on the planet right now, but one hundred years from now, all of these people - with the exception of a few who are now very young - will be gone. You yourself will be dead. Try to experience this fact with your entire being.

Time never stands still - it is continuously passing. Seconds become minutes, minutes become hours, hours become days, days become years, and as time is passing in this way, you are travelling closer and closer towards death. Imagine an hourglass, with the sand running into the bottom. The time you have to live is like these grains of sand, continuously running out…Hold your awareness for a while on the experience of this uninterrupted flow of time carrying you to the end of your life.

If human beings died at a specific age, say eighty-eight, we would have plenty of time and space to prepare for death. But there is no such certainty, and death catches most of us by surprise.

We can hope to live until we are seventy or eighty, but we cannot be certain of doing so. We cannot be certain that we will not die later today.

It is very difficult to feel convinced that death could happen at any moment. We tend to feel that since we have survived so far, our continuation is secure. But thousands of people die every day, and few of them expected to.

Our human body is very vulnerable; it can be injured or struck down by illness so easily. Within minutes it can change from being strong and active to being helplessly weak and full of pain.

4.23 **Appendix I** - Short Warwick–Edinburgh Mental Wellbeing Scale

Short Warwick–Edinburgh Mental Well-being Scale (SWEMWBS)
Tennant *et al.* (2007)

SWEMWBS items

1. I've been feeling optimistic about the future
2. I've been feeling useful
3. I've been feeling relaxed
4. I've been dealing with problems well
5. I've been thinking clearly
6. I've been feeling close to other people
7. I've been able to make up my own mind about things

Response categories and scores

- None of the time (1)
- Rarely (2)
- Some of the time (3)
- Often (4)
- All of the time (5)

Interpretation

Scores range from 7 to 35 and higher scores indicate higher positive mental wellbeing.

4.24 **Appendix J** - Death Attitude Profile – Revised Scale

Death Attitude Profile - Revised (*DAP-R*)
Wong *et al.* (1994)

DAP-R items and dimensions

1. Death is no doubt a grim experience (FD)
2. The prospect of my own death arouses anxiety in me (FD)
3. I avoid death thoughts at all costs (DA)
4. I believe that I will be in heaven after I die (AA)
5. Death will bring an end to all my troubles (EA)
6. Death should be viewed as a natural, undeniable, and unavoidable event (NA)

7. I am disturbed by the finality of death (FD)
8. Death is an entrance to a place of ultimate satisfaction (AA)
9. Death provides an escape from this terrible world (EA)
10. Whenever the thought of death enters my mind, I try to push it away (DA)
11. Death is deliverance from pain and suffering (EA)
12. I always try not to think about death (DA)
13. I believe that heaven will be a much better place than this world (AA)
14. Death is a natural aspect of life (NA)
15. Death is a union with God and eternal bliss (AA)
16. Death brings a promise of a new and glorious life (AA)
17. I would neither fear death nor welcome it (NA)
18. I have an intense fear of death (FD)
19. I avoid thinking about death altogether (DA)
20. The subject of life after death troubles me greatly (FD)
21. The fact that death will mean the end of everything as I know it frightens me (FD)
22. I look forward to a reunion with my loved ones after I die (AA)
23. I view death as a relief from earthly suffering (EA)
24. Death is simply a part of the process of life (NA)
25. I see death as a passage to an eternal and blessed place (AA)
26. I try to have nothing to do with the subject of death (DA)
27. Death offers a wonderful release of the soul (AA)
28. One thing that gives me comfort in facing death is my belief in the afterlife (AA)
29. I see death as a relief from the burden of this life (EA)
30. Death is neither good nor bad (NA)
31. I look forward to life after death (AA)
32. The uncertainty of not knowing what happens after death worries me (FD)

*Many of the statements seem alike but all are necessary to show slight differences in attitudes (Wong *et al.*, 1994).

DAP-R dimensions

- AA: Approach Acceptance (death is viewed as a passageway to a happy afterlife)
- FD: Fear of Death (negative thoughts and feelings about the state of death)
- DA: Death Avoidance (negative thoughts and feelings about the process of dying)
- EA: Escape Acceptance (death is viewed as an escape from a painful existence)
- NA: Neutral Acceptance (death is neither welcomed nor feared, but simply accepted as reality)

Response categories

- SA = strongly agree
- A = agree
- MA = moderately agree
- U = undecided
- MD = moderately disagree
- D = disagree
- SD = strongly disagree

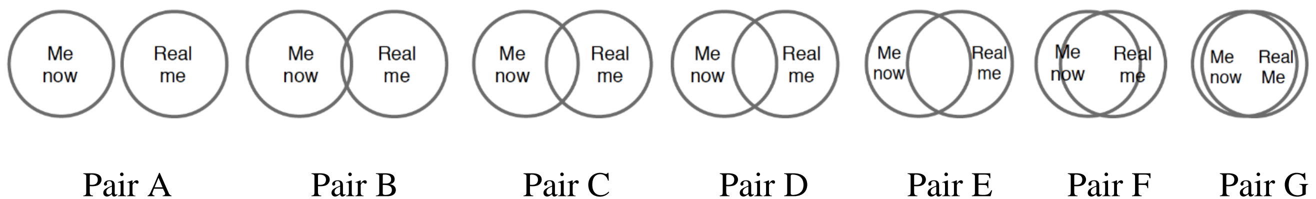
4.25 **Appendix K** - Real Self Overlap Scale

Real Self Overlap Scale (*RSOS*) (State authenticity measure)
Lenton *et al.* (2013)

The *RSOS* was designed to measure the extent to which participants, at a particular moment, feel close to their real, true self (Lenton *et al.*, 2013).

Instructions

*Please look at the pairs of circles below. In each pair, the circle on the left represents who you feel yourself to be **RIGHT NOW** and the circle on the right represents your **REAL SELF**. Your real self is who you truly are (which may not necessarily be the same as who you would like to be).* Which pair of circles best represents how close you feel at this moment to your real self? (Circle one of the labels below the circles).



Pair A Pair B Pair C Pair D Pair E Pair F Pair G

RSOS items

1. Right now, I feel it is better to be myself than to be popular.
2. Right now, I'm unsure how I'm really feeling inside.
3. Right now, I'm being influenced by the opinions of others.
4. Right now, I feel willing to defend my beliefs if need be.
5. Right now, the expectations of others are guiding my behaviour.
6. Right now, I feel out of touch with the "real me".
7. Right now, I feel as if I don't know myself very well.
8. Right now, I am willing to follow instructions from others.
9. Right now, I feel true to myself.
10. Right now, I'm feeling greatly influenced by other people.
11. Right now, I'm behaving in accordance with my values and beliefs.
12. Right now, I feel distant from myself.

RSOS response categories and scores

- Strongly disagree (1)
- Disagree (2)
- Moderately disagree (3)
- Undecided (4)
- Moderately agree (5)
- Agree (6)
- Strongly agree (7)

4.26 **Appendix L** - Depression, Anxiety and Stress Scale

Depression, Anxiety and Stress Scale (*DASS-21*)
Lovibond & Lovibond (1995).

DASS-21 items and subscales

(d) = depression, (a) = anxiety, (s) = stress

1. (s) I found it hard to wind down
2. (a) I was aware of dryness of my mouth
3. (d) I couldn't seem to experience any positive feeling at all
4. (a) I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)
5. (d) I found it difficult to work up the initiative to do things
6. (s) I tended to over-react to situations
7. (a) I experienced trembling (e.g. in the hands)
8. (s) I felt that I was using a lot of nervous energy
9. (a) I was worried about situations in which I might panic and make a fool of myself
10. (d) I felt that I had nothing to look forward to
11. (s) I found myself getting agitated
12. (s) I found it difficult to relax
13. (d) I felt downhearted and blue
14. (s) I was intolerant of anything that kept me from getting on with what I was doing
15. (a) I felt I was close to panic
16. (d) I was unable to become enthusiastic about anything
17. (d) I felt I wasn't worth much as a person
18. (s) I felt that I was rather touchy
19. (a) I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)
20. (a) I felt scared without any good reason
21. (d) I felt that life was meaningless

DASS-21 response categories and scores

- Did not apply to me at all (1)
- Applied to me to some degree, or some of the time (2)
- Applied to me to a considerable degree or a good part of time (3)
- Applied to me very much or most of the time (4)

4.27 **Appendix M** – Qualitative Interview Schedule

Qualitative Interview Schedule (Semi-Structured)

1. What was your experience overall of the death reflection intervention?
2. What came up for you during the intervention?
3. Were there any specific topics that death reflection brought your attention to?
4. Can you tell me about your experiences of death and dying?
5. How did these experiences inform your experience of death reflection?

6. Is there a difference between how you think and feel about your own death as opposed to the death of your loved ones?
7. What is one thing that you will take away from the intervention?

4.28 **Appendix N** – Guidelines for Key Stages of Conducting IPA

Guidelines for Key Stages of Conducting Interpretative Phenomenological Analysis (IPA)

Step 1: Reading and re-reading
Step 2: Initial noting
Step 3: Developing emerging themes
Step 4: Searching for connection across themes
Step 5: Moving to the next case
Step 6: Looking for patterns across cases
Step 7: Taking it deeper: Influences on interpretation

4.29 **Appendix O** – Table of Superordinate and Subordinate Themes

Table 5
Table of Superordinate and Subordinate Themes

Superordinate Theme 1: Multifaceted Mortality

Subtheme 1.1: Death and Religion
Laura: "Questioning the things I always just believed and was told".

Sheila: "Crying when someone died was not religiously compliant, not socially acceptable".

Sarah: "In my family, there was this history of keeping death really taboo".

Callum: "Although life is finite, my hope doesn't rest with myself but with God, so I have nothing to worry about".

Subtheme 1.2: Death and Relationships
Laura: "It's about living life with those I love, whose company I treasure".

Sheila: "Praying for courage and strength for the closest ones that I leave behind, hardest hit by my going".

Sarah: "My father wouldn't know how to deal with the sadness".

Callum: "If I were to go, I would feel bad because it's like you're losing a son, you're losing a brother, losing a friend".

Subtheme 1.3: Death and the Individual
Laura: "Fear of serious illness more than death because of the loss of control and dignity".

Sheila: "I was not very accepting to myself; I was always pushing myself harder and harder. I cannot change it, I'm always this ambitious lady".

Sarah: "If I die now, it would be okay, I've had a nice life, I've enjoyed, and I've achieved things".

Callum: "In the end your solutions and your first-class degree are not going with you anywhere on your deathbed".

Superordinate Theme 2: Dynamics of Death Reflection

Subtheme 2.1: Responses to Death Reflection
Laura: "I fear losing loved ones but it's not as overwhelming now".

Sheila: "It was not the idea of dying but the idea of dying suffocated and burning is the worst that I am afraid of".

Sarah: "There is a lot of smoke, what do I do? I'm not able to breathe".

Callum: "I would handle it with a calm certainty after my panic has died down and be content in what I have accomplished with my life".

Subtheme 2.2: Ways of Coping with Death
Laura: "My need to be self-reliant and rationalise the process of dying, to think more than I feel about death".

Sheila: "Humbling to be part of something bigger".

Sarah: "Delayed responses to anxiety".

Callum: "Avoid regrets on my deathbed so I can feel content and at peace".

Subtheme 2.3: Experiences of Loss
Laura: "Hopefully that disconnect didn't cause me any further harm because I was quite inauthentic when I went back to work or was, I really coping fine?".

Sheila: "Losing my mom was a huge blow for me, I was crying every day, and I didn't know how to get through".

Sarah: "Appreciate life, find peace and support other people".

Callum: "I could have done more for other people; I could have made people smile more often".

4.30 **Appendix P** – Ethics Application

Ethics ETH2122-1432: Mr Michael Fitzpatrick

Date Created	30 May 2022
Date Submitted	13 Sep 2022
Date of last resubmission	04 Mar 2023
Date forwarded to committee	10 Jan 2023
Date of committee meeting	08 Feb 2023
Academic Staff	Mr Michael Fitzpatrick
	Miss Sarika Sharma
Category	Postgraduate Research Student
	Postgraduate Research Student
Supervisor	Prof Susan Mcpherson
Project	Exploring the Potential Psychological Benefits of Death Reflection
Faculty	Science and Health
Department	Health and Social Care
Current status	Approved after revisions made

Ethics application

Project overview

Title of project
Exploring the Potential Psychological Benefits of Death Reflection

Do you object to the title of your project being published?
No

Applicant(s)
Mr Michael Fitzpatrick

Miss Sarika Sharma

Supervisor(s)
Prof Susan Mcpherson

Dr Hugo Senra

Dr Philip Cozzolino

Proposed start date of research
20 Mar 2023

Expected end date
03 Apr 2024

Will this project be externally funded?
No

Will the research involve human participants?
Yes

Will the research use collected or generated personal data?
Yes

Will the research involve the use of animals?
No

Will any of the research take place outside the UK?
No

Project details

Summary of the project
This study aims to explore the potential psychological benefits of mortality reflection over time for working-age adults. This study will employ quantitative methods to assess the effectiveness of death reflection against a set of standardised outcome measures (well-being, psychological stress, attitudes toward death, authenticity, and ego integrity). The study will also employ qualitative methods in the form of semi-structured interviews to explore the potential mechanisms behind the psychological benefits that participants experience by reflecting on their own death. Participants will be recruited from the student and staff population at the University of Essex, other universities, and the local community in Essex. Having met inclusion criteria and been through screening, participants will be asked to participate in a researcher-facilitated, self-directed intervention of four weeks in duration with a 2-month follow-up. Ethical approval will be sought from the university research committee.

Research project proposal
Will the participants, either the subjects or the investigators, be involved in any activities that could be considered to be unlawful in the UK?
No

If the project is being undertaken outside the UK, will the participants, either the subjects or the investigators, be involved in any activities that could be considered to be unlawful in the country overseas?

Participant details

Who are the potential participants?
Participants will be recruited from the staff and student population of the University of Essex and community groups in the Essex area.

How will they be recruited?

Participants will be recruited using a variety of sampling methods. Community sampling will be used to recruit from the staff and student population of the University of Essex via recruitment notices on social media below (permissions have been granted for these platforms to be used).

University of Essex's Department of Psychology Facebook page: https://en-gb.facebook.com/psychologyatessex

University of Essex's Research Twitter profile:

https://twitter.com/ResearchEssex

Participants will also be recruited through the University of Essex's Department of Psychology mailing list:

psy-vol@majordomo.essex.ac.uk

Recruitment notices (see attached) will be posted in shopping centres, cafes, and community centres to recruit participants from the local community and allow for a more diverse sample. Individual participants will be asked to share our study advertisement to reach a wider audience (Snowball sampling).

Prospective participants will be asked to register their interest on a survey created through SurveyMonkey (https://www.surveymonkey.co.uk/). Prospective participants will be sent an information sheet, broadly summarising the study's aims, potential benefits, and harmful effects.

At screening, individuals will be excluded if they currently/have previously been diagnosed with/treated for/experienced moderate to severe/severe/enduring mental health difficulties. Individuals will also be excluded if they are using alcohol/drugs/non-prescription to self-medicate. Individuals with mild to moderate mental health difficulties will be allowed to take part in the study. Individuals need to be above the age of 18, with reliable access to a computer with internet access, a phone, and a private space where they can attend remote sessions.

Recruiting materials

Will participants be paid or reimbursed?

Yes

If yes, please provide details and justification for this payment.

As data collection will be carried out over the course of 3.5 months, participants will need to commit time and energy to be part of our study. Providing incentives also mitigates participant attrition. We plan to offer each of our target sample of 50 participants £15 for completing pre-post questionnaires only (n=38) – total £570.

Participants will be offered £25 for completing pre-post questionnaires and a follow-up qualitative interview (n=12) – total £300. Payments would be made at the end of the individual's participation if they complete both time points in order to incentivise study completion at both time points. Participants will either be paid £15 OR £25 depending on level of participation (as above).

How much will the participants be paid?

£ 15

Could potential participants be considered vulnerable?

No

If yes, please explain how the participants could be considered vulnerable and why vulnerable participants are necessary for the research.

Could potential participants be considered to feel obliged to take part in the research?
No

If yes, please explain how the participants could feel obliged and how any possibility for coercion will be addressed.

Will the research involve individuals below the age of 18 or individuals of 18 years and over with a limited capacity to give informed consent?
No

Is a Disclosure and Barring Service (DBS) Check required?
No

If yes, has the DBS check been completed?

If your project involves children or vulnerable adults but does not require a DBS check, please explain why.
The research does not involve children or vulnerable adults.

Informed consent

How will consent be obtained?
Written

If consent will be obtained in writing, please upload the written consent form for review and approval.
If consent will be obtained orally, please explain why.

Please upload a copy of the script that will be used to obtain oral consent.

If no script is available to upload please explain why.

Who will be obtaining and recording consent?
Mike Fitzpatrick and Sarika Sharma, principle investigators for the research project.

Please indicate at what stage in the data collection process consent will be obtained.
Consent will be obtained after the stage of contacting interested participants and before the screening stage.

If informed consent will not be obtained, explain why.

Please upload a participant information sheet.

Have you reviewed the information provided by the REO on participant information and consent?
Yes

Confidentiality and anonymity

Will you be maintaining the confidentiality and anonymity of participants whose personal data will be used in your research?
Yes

If yes, describe the arrangements for maintaining anonymity and confidentiality.
Participants will be allocated a Study ID number and this number will be used to store information for research purposes - names of participants will not be stored alongside any of their personal data or research data. In writing up study findings individual participants will not be identifiable.

Researchers will take steps to maintain the confidentiality and anonymity of participants. However, there may be an instance (e.g. taking part in a focus group) where participants may not remain anonymous to each other. In this case, we can still maintain anonymity by asking participants to use only their first names or give themselves a pseudonym if they wish not to share their first names.

If you are not maintaining anonymity and confidentially, please explain your reasons for not doing so.

Data access, storage and security

Describe the arrangements for storing and maintaining the security of any personal data collected as part of the project.
Any personal data collected as part of the project will be stored in a password-protected document on a secure server. All personal data will be destroyed once data analysis is completed.

Please provide details of all those who will have access to the data.
Mike Fitzpatrick (Trainee Clinical Psychologist) mf21138@essex.ac.uk

Sarika Sharma (Trainee Clinical Psychologist) ss21096@essex.ac.uk

Dr Hugo Senra (Clinical Psychologist) hrsenra@gmail.com

Philip Cozzolino (Researcher and Lecturer at Department of Psychology) pjcozz@essex.ac.uk

Dr Susan McPherson (Professor

School of Health and Social Care)

smcpher@essex.ac.uk

Other authenticated researchers will have access to this data only if they agree to preserve the confidentiality of the information as requested in the form participants will sign. Other authenticated researchers may use participants' words in publications, reports, web pages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.

Risk and risk management

Risk Assessment documents

Are there any potential risks (e.g. physical, psychological, social, legal or economic) to participants or subjects associated with the proposed research?
Yes

If yes, please provide full details and explain what risk management procedures will be put in place to minimise the risks.
Due to its subject matter, the current study is potentially emotionally distressing and therefore poses a risk to participant welfare. There is also a risk of emotional fatigue for the researchers. That said, studies of this kind have managed risk safely using a number of steps that we intend to follow.

Current controls for these risks are as follows:

-Screening: Exclusion of participants with a current or previous diagnosis of any severe and enduring mental health conditions.

Exclusion of participants who are known to members of the research team.

-Briefing: Participants will be informed as much as possible of the risks of taking part.

-During Intervention: Once weekly calls to check-in with each participant (i.e. on their well-being, their ability to maintain engagement, and risk assessment if necessary).

Additional controls:

-As clinical psychology trainees, the members of the research team are able to conduct a thorough risk assessment should any issues concerning the mental health of participants arise.

-The research team will report to clinically trained research supervisors (Susan McPherson and Hugo Senra) and/or personal tutor if additional support to manage risk is required.

-The research team will signpost participants to GP, helplines, crisis line, Samaritans, or NHS 111 if necessary.

-Participants will be reminded that they are able to discontinue their participation at any point if needed.

-Participants will be debriefed at the end of the intervention and all participants will be contacted at 2-month follow up.

Are there any potential risks (e.g. physical, psychological, social, legal or economic) to the researchers working on the proposed research?
Yes

If yes, please provide full details and explain what risk management procedures will be put in place to minimise the risks.
Due to its subject matter, the current study is potentially emotionally distressing and therefore poses a potential psychological risk to researchers. To avoid any physical risk to researchers, we will avoid lone working and work in pairs when meeting participants in person. Researchers have professional experience in risk assessment and management.

Are there any potential reputational risks to the University as a consequence of undertaking the proposed research?
No

If yes, please provide full details and explain what risk management procedures will be put in place to minimise the risks.

Are there any other ethical issues that have not been addressed which you would wish to bring to the attention of the reviewer(s) of your application?

Other documents

4.31 **Appendix Q** – Risk Assessment

File name:	Research Risk Assessment		
Risk assessment reference:		**Version number:**	

Risk assessment

Description of activity / area being assessed	'*Reflections on Life*' Doctorate in Clinical Psychology Research Project		**Location**	University of Essex
Manager responsible	Susan McPherson	**Signature & date**	[signature] 7/9/22	
Assessed by (name & role)	Sarika Sharma & Mike Fitzpatrick (DClinPsy Trainees)	**Signature & assessment date**	06/09/2022 *S.Sharma; M. Fitzpatrick*	

Hazard (H) hazardous event (HE) consequence (C)	**Who might be harmed**	**Current controls**	**Current risk LxC=R**	**Additional controls needed to reduce risk**	**Residual risk LxC=R**	**Target Date**	**Date achieved**
H: Participant welfare **HE:** '*Death-Reflection Exercise*' (stimuli to be used in project) & 'Death Attitudes Profile' measure causing emotional	- Participants - Members of the research team	**Screening:** Exclusion of participants with a current or previous diagnosis of any severe and enduring mental health conditions. Exclusion of participants who are known to	**LOW RISK** (Moderate x Unlikely)	As clinical psychology trainees, the members of the research team are able to conduct a thorough risk assessment should any issues	**LOW RISK** (Minor x Unlikely)		

Consequence					
Catastrophic	Medium	High	Very High	Very high	Very High
Major	Low	Medium	High	High	Very High
Moderate	Very low	Low	Medium	Medium	High
Minor	Very low	Low	Low	Medium	Medium
Insignificant	Very low	Very low	Low	Low	Low
R = LxC	Very unlikely	Unlikely	Fairly likely	Likely	Very likely
	Likelihood of hazardous event				

Hazard (H) hazardous event (HE) consequence (C)	Who might be harmed	Current controls	Current risk LxC=R	Additional controls needed to reduce risk	Residual risk LxC=R	Target Date	Date achieved
distress; confidentiality breach. **C:** Deterioration in participant welfare; attrition; subsequent emotional fatigue to members of the research team.		members of the research team. **Briefing:** Participants will be informed as much as possible of the risks of taking part. **During Intervention:** Once weekly calls to check-in with each participant (i.e. on their well-being and their ability to maintain engagement)		concerning the mental health of participants arise. Research team will report to clinically trained research supervisor (Hugo Senra) and/or personal tutor if additional support to manage risk is required. Research team will signpost participants to GP, helplines, crisis line, Samaritans or NHS 111 if necessary. Participants will be reminded that they are able to discontinue their participation if needed.			
H: Fire First Aid & Local Emergency Arrangements	Participants, research team members and others.	Research team briefed on emergency arrangements by the university contact before research starts.	(Major x Very Unlikely) **LOW RISK**	No further controls.	(Major x Very Unlikely) **LOW RISK**		

Hazard (H) hazardous event (HE) consequence (C)	Who might be harmed	Current controls	Current risk LxC=R	Additional controls needed to reduce risk	Residual risk LxC=R	Target Date	Date achieved
HE: Research team not familiar with arrangements. **C:** Harm escalates due to the delayed response or incorrect emergency action.		Research team identified their local exit routes and follow local emergency arrangements. All members of the research team are fire safety trained.					

Add more rows if needed

Periodic Review

Review date:					
Review by:					
Signed:					

If there are changes, please save assessment as a new version and archive previous version.

4.32 **Appendix R** – Notice of Ethical Approval

University of Essex ERAMS

06/03/2023

Mr Michael Fitzpatrick, Miss Sarika Sharma

Health and Social Care, Health and Social Care

University of Essex

Dear Michael,

Ethics Committee Decision

Application: ETH2122-1432

We are pleased to inform you that the research proposal entitled "Exploring the Potential Psychological Benefits of Death Reflection" has been reviewed by the Ethics Sub Committee 2, and, based on the information provided, it has been awarded a favourable opinion.

The application was awarded a favourable opinion subject to the following **conditions**:

Extensions and Amendments:

If you propose to introduce an amendment to the research after approval or extend the duration of the study, an amendment should be submitted in ERAMS for further approval in advance of the expiry date listed in the ethics application form. Please note that it is not possible to make any amendments, including extending the duration of the study, once the expiry date has passed.

Covid-19:

Please note that the current Government guidelines in relation to Covid-19 must be adhered to and are subject to change and it is your responsibility to keep yourself informed and bear in mind the possibility of change when planning your research. You will be kept informed if there are any changes in the University guidelines.

Yours sincerely,

REO Research Governance Team

reo-governance@essex.ac.uk

Ethics ETH2122-1432: Mr Michael Fitzpatrick

4.33 **Appendix S** - Descriptive Statistics for Week 1/Baseline

Table 6

Descriptive Statistics for Week 1/Baseline (All Measures)

Outcome	N	Missing	Mean	Median	Std. Dev.
Wellbeing	23	2	14.00	14	3.451
Fear of Death	23	2	20.43	21	4.230
Death Avoidance	23	2	13.43	14	3.342
Neutral Acceptance	23	2	22.61	22	4.098
Approach Acceptance	23	3	28.95	29	3.786
Escape Acceptance	23	2	15.83	16	2.691
Authen-ticity	23	2	41.61	40	7.500
DASS-21 Total	23	2	29.04	28	20.890
Depression	23	2	8.52	8	7.769
Anxiety	23	2	7.13	4	8.198
Stress	23	2	13.39	14	8.100

4.34 **Appendix T** - Descriptive Statistics for Week 2

Table 7

Descriptive Statistics for Week 2 (All Measures)

Outcome	N	Missing	Mean	Median	Std. Dev.
Wellbeing	24	1	14.13	14	4.347
Fear of Death	23	2	20.17	20	4.549
Death Avoidance	23	2	15.48	16	2.826
Neutral Acceptance	23	2	21.52	23	5.892
Approach Acceptance	23	2	29.52	28	6.200
Escape Acceptance	23	2	15.87	15	5.303
Authen-ticity	23	2	41.52	41	8.201
DASS-21 Total	23	2	28.52	20	23.773
Depression	23	2	8.43	4	9.999
Anxiety	23	2	6.70	6	6.399
Stress	23	2	13.39	12	9.505

4.35 **Appendix U** – Descriptive Statistics for Week 3

Table 8

Descriptive Statistics for Week 3 (All Measures)

Outcome	N	Missing	Mean	Median	Std. Dev.
Wellbeing	24	1	13.83	14	4.320
Fear of Death	23	2	22.57	23	3.231
Death Avoidance	23	2	15.74	16	2.200
Neutral Acceptance	23	2	20.17	23	7.542
Approach Acceptance	23	2	31.22	29	4.582
Escape Acceptance	23	2	15.09	15	2.983
Authen-ticity	23	2	38.57	38	6.584
DASS-21 Total	23	2	25.74	20	24.719
Depression	23	2	8.61	4	10.811
Anxiety	23	2	5.13	2	6.203
Stress	23	2	12.00	12	10.018

4.36 **Appendix V** – Descriptive Statistics for Week 4

Table 9

Descriptive Statistics for Week 4 (All Measures)

Outcome	N	Missing	Mean	Median	Std. Dev.
Wellbeing	22	3	13.95	14.50	2.984
Fear of Death	21	4	21.00	22.00	2.933
Death Avoidance	21	4	15.71	16.00	2.952
Neutral Acceptance	21	4	23.90	24.00	3.330
Approach Acceptance	21	4	30.19	28.00	5.645
Escape Acceptance	21	4	15.57	16.00	4.202
Authen-ticity	21	4	42.14	44.00	5.859
DASS-21 Total	21	4	22.00	14.00	21.071
Depression	20	5	6.20	2.00	8.532
Anxiety	20	5	5.70	3.00	7.205
Stress	20	5	9.80	7.00	9.556

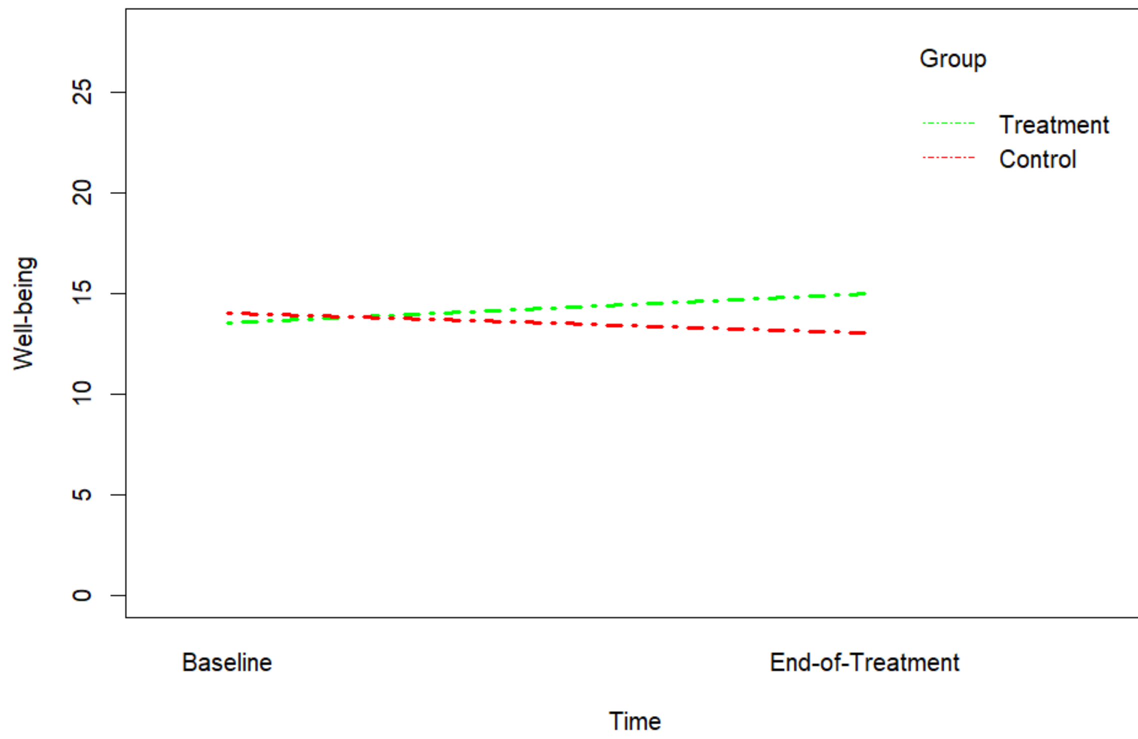
4.37 **Appendix W** – Descriptive Statistics for Week 5/End of Treatment

Table 10

Descriptive Statistics for Week 5/End of Treatment (All Measures)

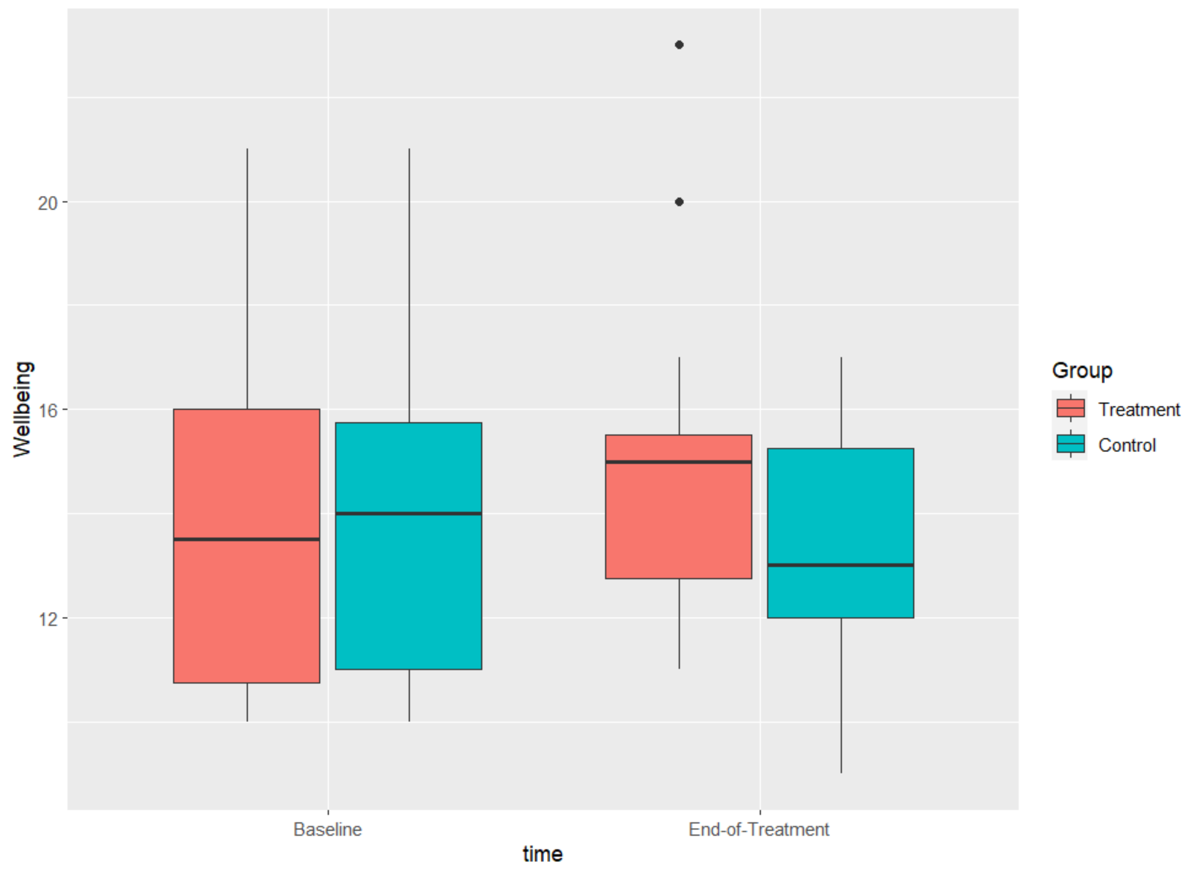
Outcome	N	Missing	Mean	Median	Std. Dev.
Wellbeing	21	4	14.52	15	3.140
Fear of Death	20	5	23.30	23	2.003
Death Avoidance	20	5	15.35	16	3.200
Neutral Acceptance	20	5	21.15	23	7.520
Approach Acceptance	20	5	29.85	30	3.249
Escape Acceptance	20	5	15.30	15	2.155
Authen-ticity	20	5	39.20	40	7.978
DASS-21 Total	20	5	20.90	16	19.910
Depression	20	5	5.70	3	7.658
Anxiety	20	5	4.30	2	6.400
Stress	20	5	11.90	12	9.657

4.38 **Appendix Y** – Interaction Plot for Wellbeing

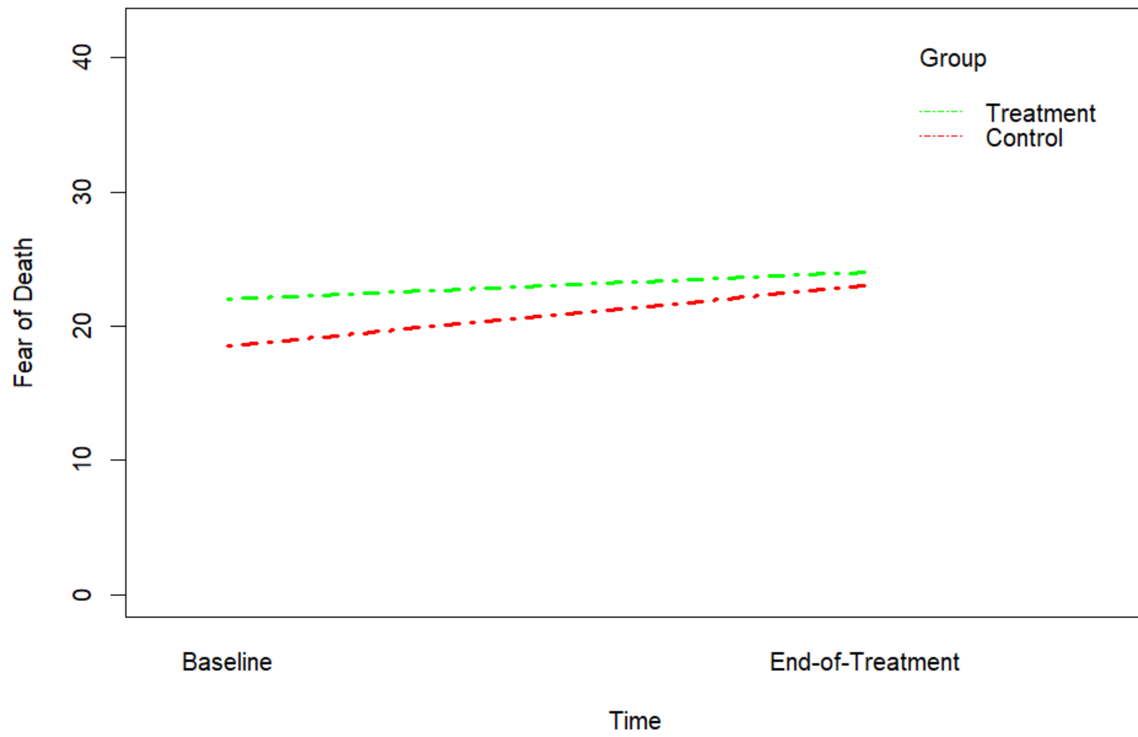


*Scales on all plots adjusted to reflect minimum and maximum scores of each outcome measure.

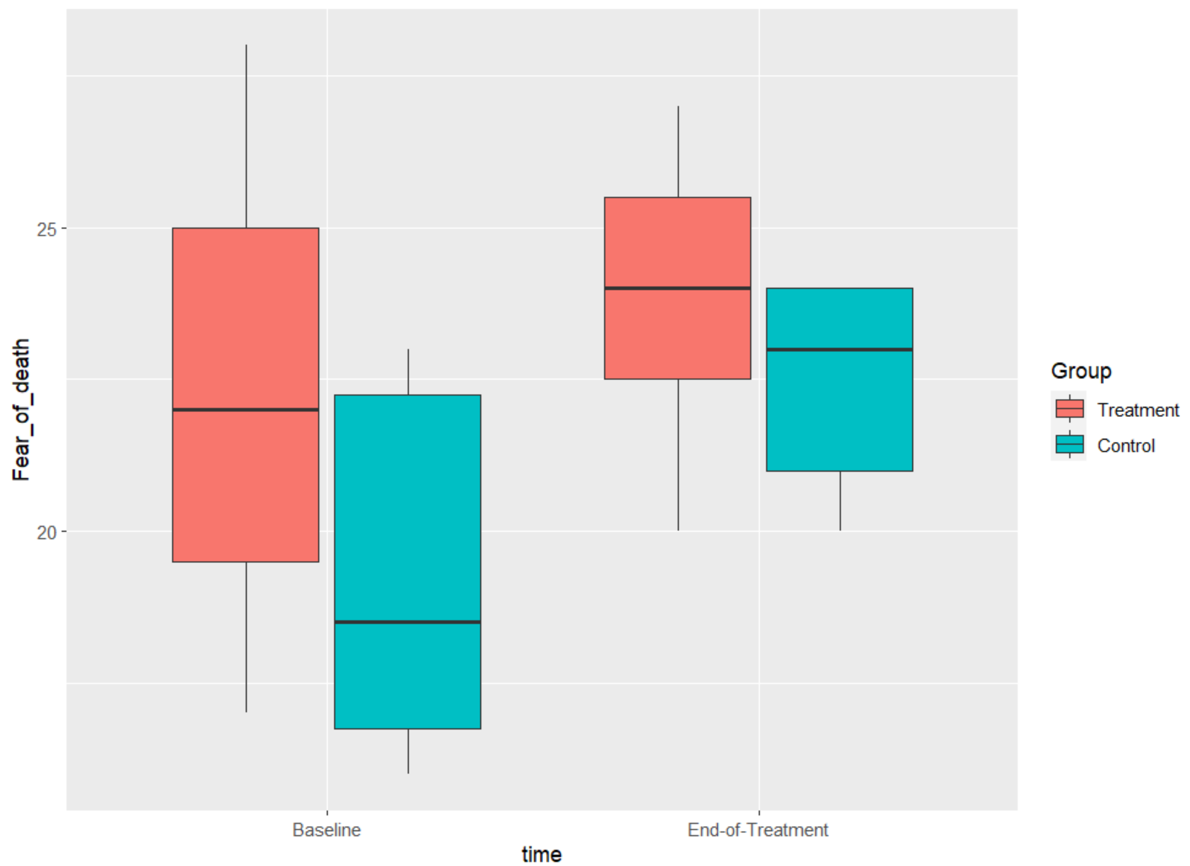
4.39 **Appendix X** – Box and Whisker plot for Wellbeing



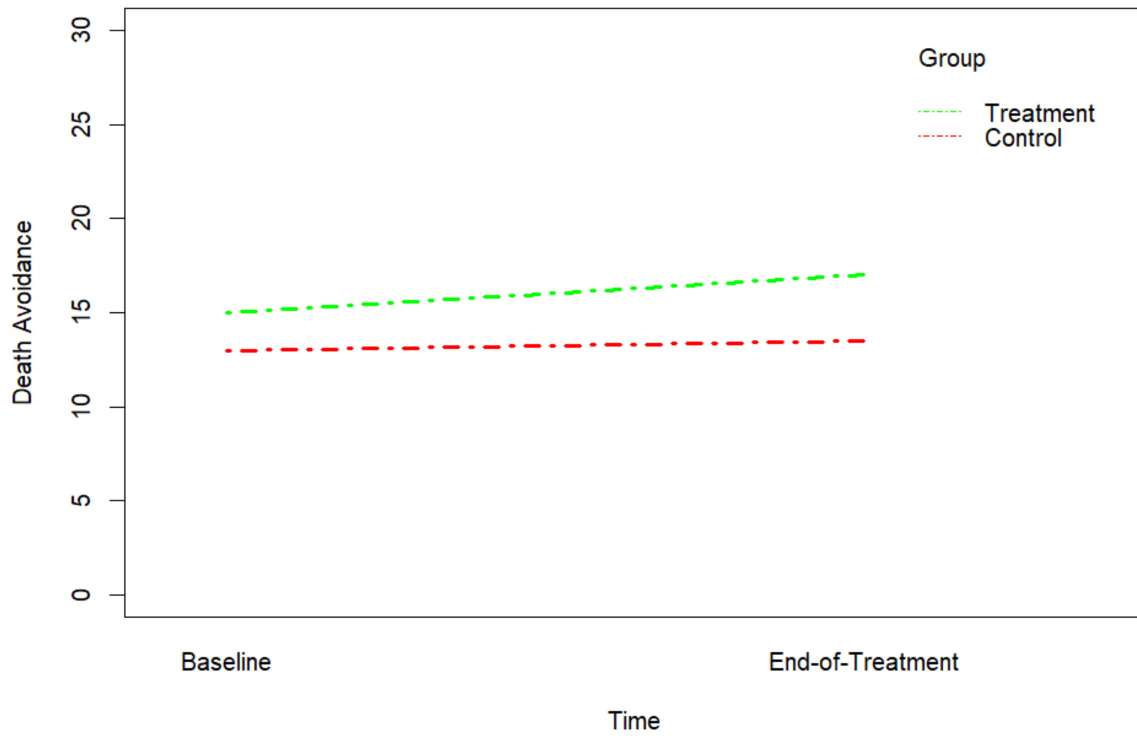
4.40 **Appendix Z** – Interaction Plot for Fear of Death



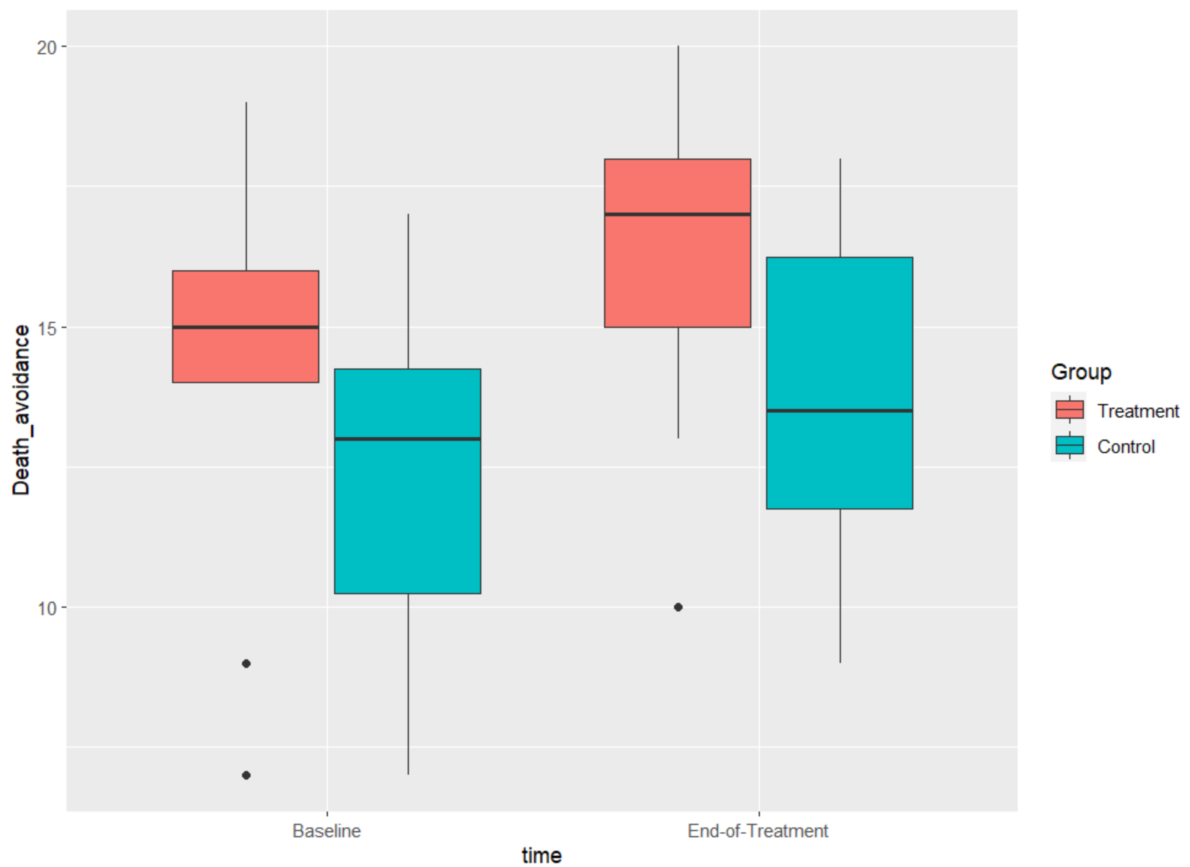
4.41 **Appendix AA** – Box and Whisker Plot for Fear of Death



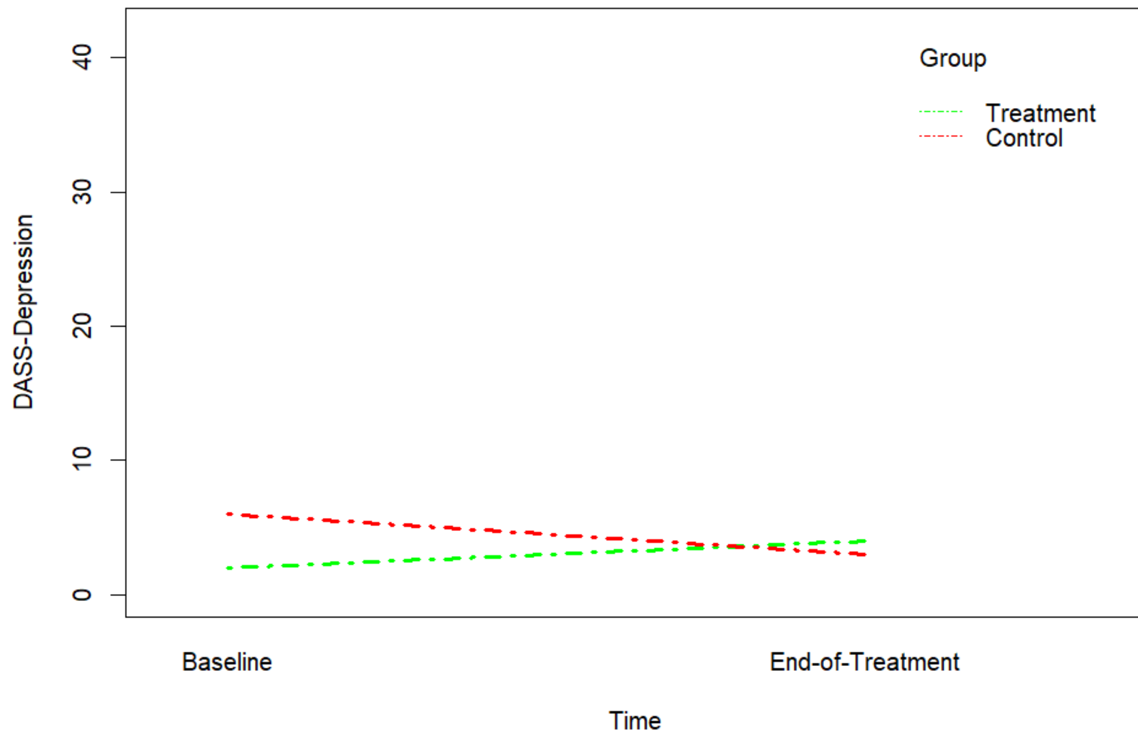
4.42 **Appendix AB** – Interaction Plot for Death Avoidance



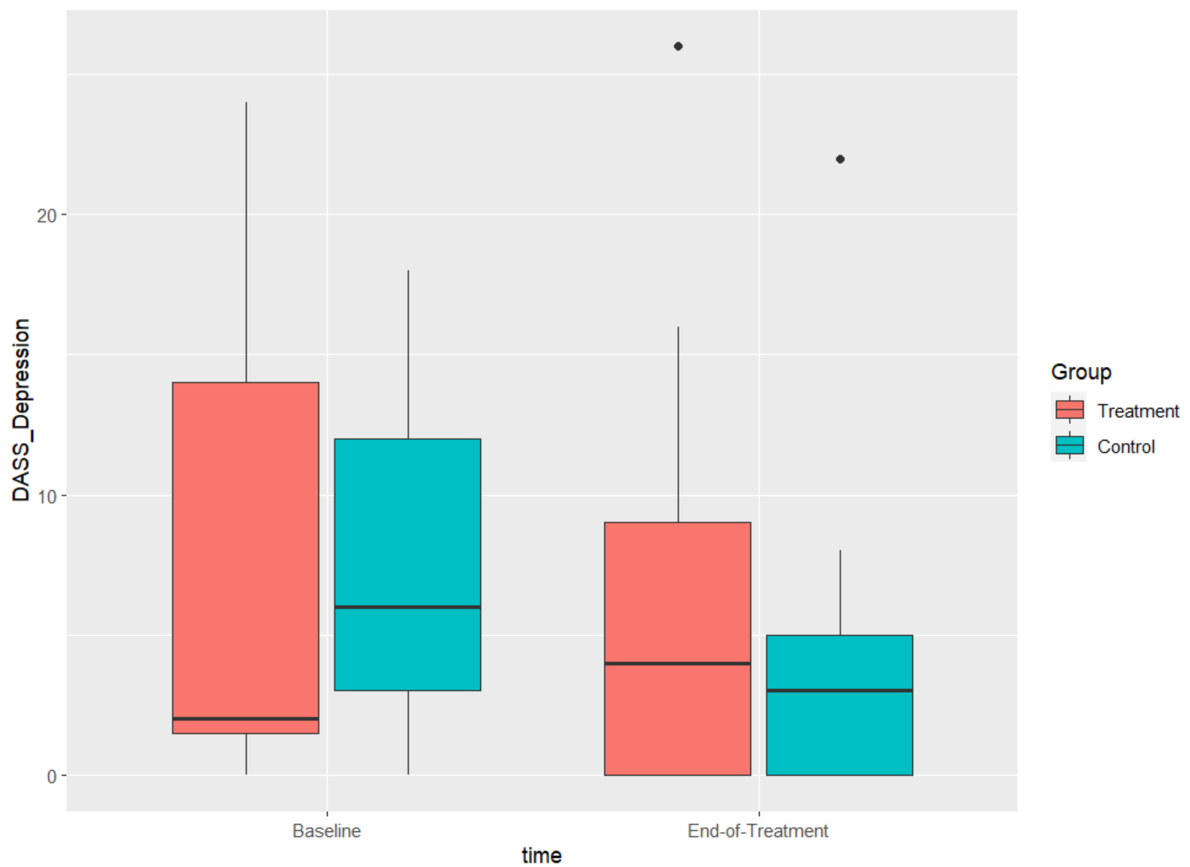
4.43 **Appendix AC** – Box and Whisker Plot for Death Avoidance



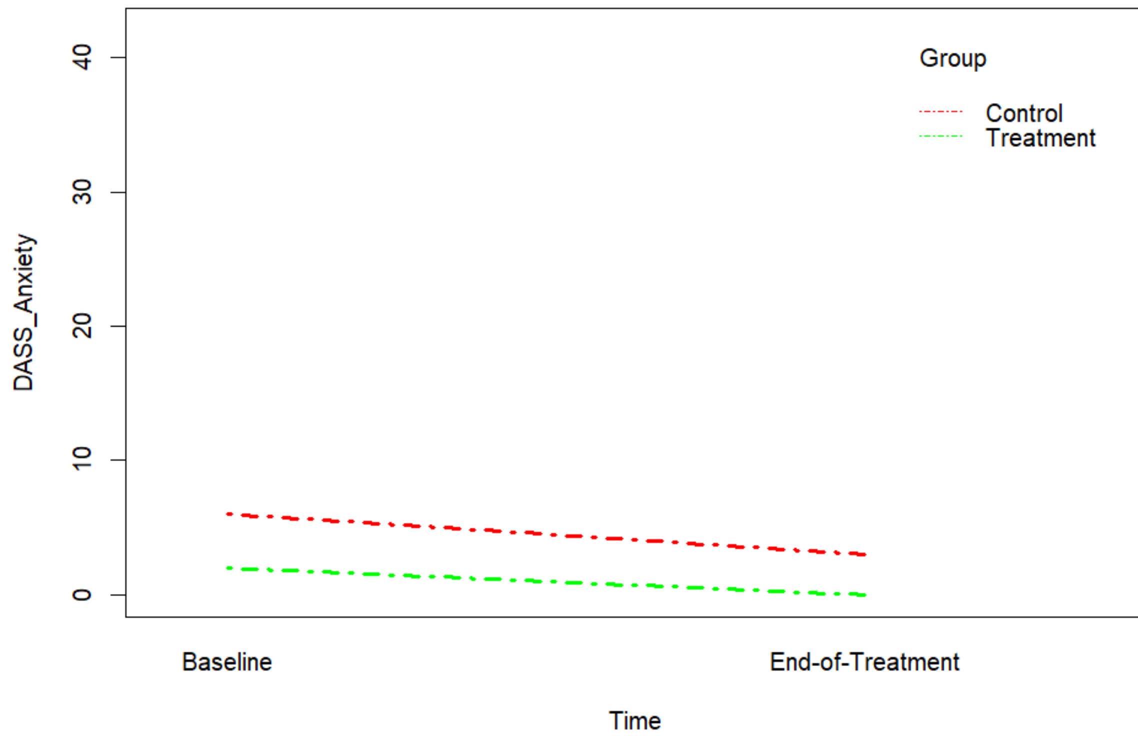
4.44 **Appendix AD** - Interaction Plot for Depression



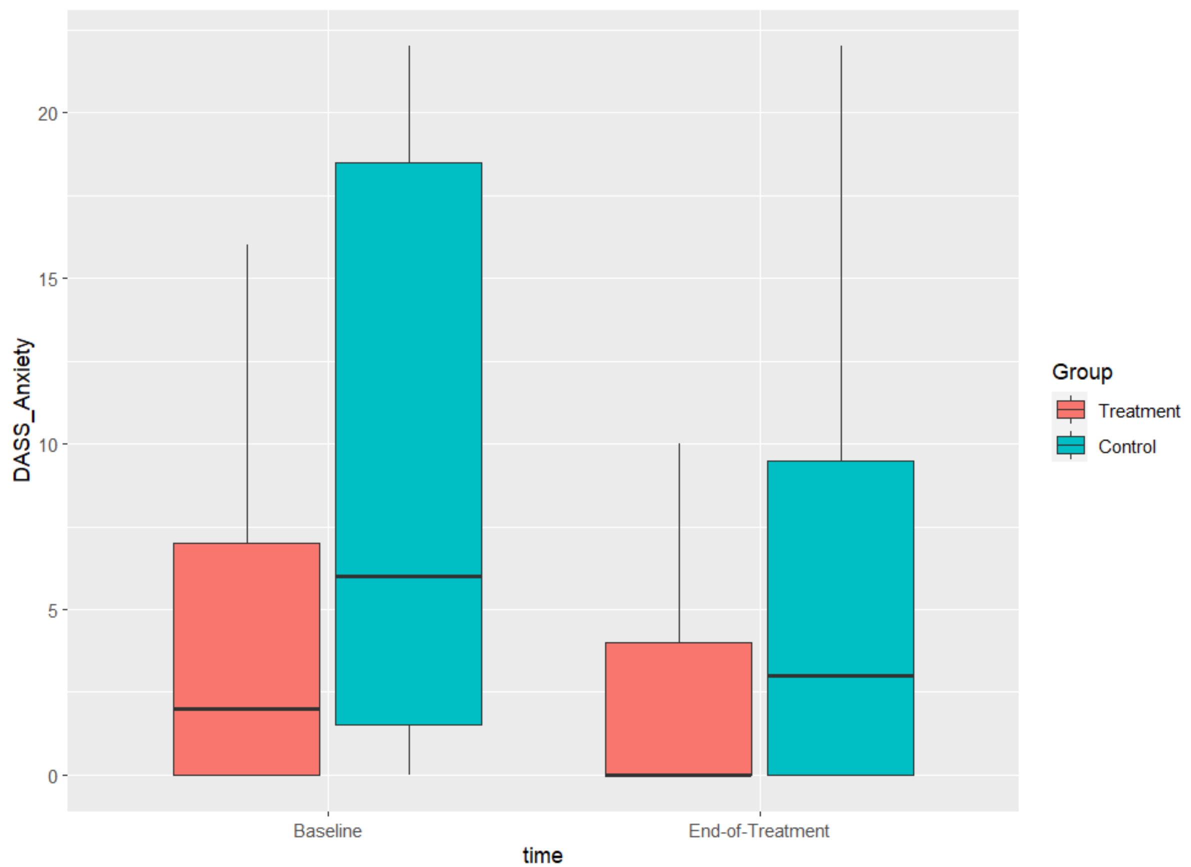
4.45 **Appendix AE** – Box and Whisker Plot for Depression



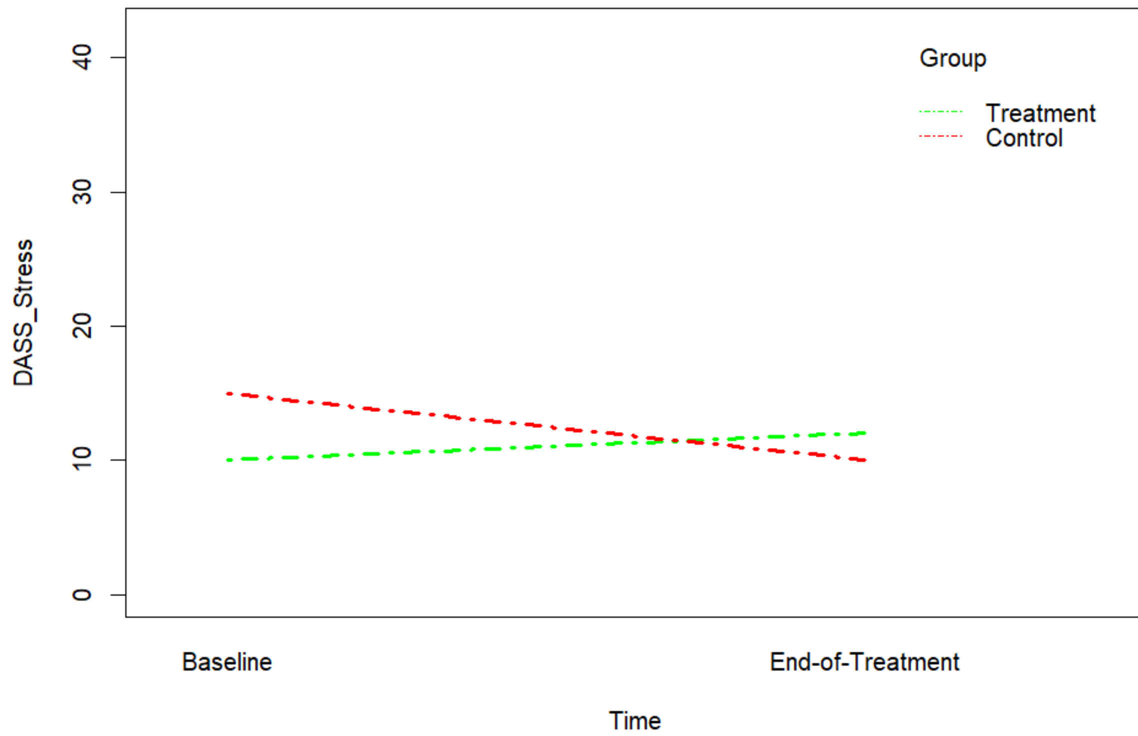
4.46 **Appendix AF** – Interaction Plot for Anxiety



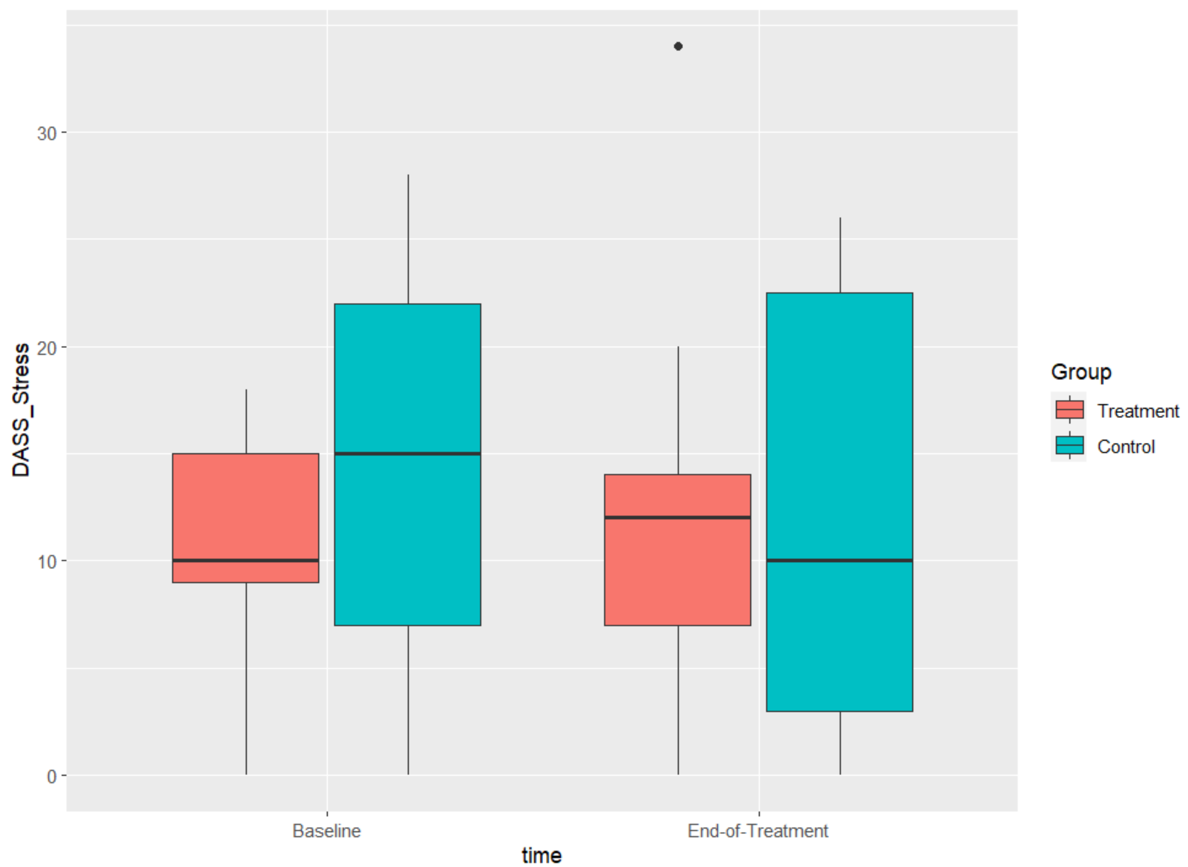
4.47 **Appendix AG** – Box and Whisker Plot for Anxiety



4.48 **Appendix AH** – Interaction Plot for Stress



4.49 **Appendix AI** – Box and Whisker Plot for Stress



4.50 **Appendix AJ –** Table of Results of Non-Parametric Rank-Based Analysis

Table

Results of Non-Parametric Rank-Based Analysis

Condition	Rank Means*	Nobs*	RTE*
GroupControl	15.3	16	0.389
GroupTreatment	22.6	22	0.581
TimeBasline	14.8	19	0.377
TimeEnd-of-Treatme nt	23.0	19	0.593
GroupControl: TimeBaseline	10.1	8	0.253
GroupControl:Time End-of-Treatment	20.4	8	0.525
GroupTreatment: timeBaseline	19.5	11	0.500
GroupTreatment: Time End-of-Treatment	25.6	11	0.661

Note
*Rank Means = Ranked means for different combinations of Group and Time.
*Nobs = Number of Observations.
*RTE = Relative Treatment Effect