The Relationship between Death Anxiety and Severity of Mental Illnesses

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Abstract

Objectives: Death anxiety has been implicated theoretically and empirically in mental health, and has been proposed to be a transdiagnostic construct. However, it has largely been investigated in relation to specific disorders, such as obsessive compulsive disorder. Few studies have assessed the relationship between death anxiety and psychopathology using heterogeneous treatment-seeking clinical samples.

Methods: In the present study, the relationships between death anxiety and broad markers of psychopathology were explored in 200 treatment-seeking participants with various diagnosed mental disorders.

Results: Across the sample, death anxiety was a strong predictor of psychopathology, including the number of lifetime diagnoses, medications, hospitalisations, distress/impairment, depression, anxiety, and stress. This relationship was not accounted for by neuroticism. Large to very large correlations were also consistently found between a measure of death anxiety and the symptom severity of 12 disorders. Neither meaning in life nor attachment style moderated the associations between death fears and psychopathology.

Conclusions: The findings reveal a strong relationship between death anxiety and psychopathology across numerous disorders, further supporting the transdiagnostic role of fears of death. As such, clinical implications revolve around the potential need for innovative treatments which address death fears directly, in order to produce long-term improvements in mental health. However, experimental research is needed to ascertain causal relationships.

The Relationship between Death Anxiety and Severity of Mental Illnesses

Throughout human history, death has been featured extensively in art, literature, myth, and cultural and religious practices (Becker, 1973). Fear of death has been shown to shape a myriad of adverse psychological phenomena (Stolorow, 1979). Whereas some individuals may develop adaptive coping mechanisms to deal with such fears (e.g., building meaningful relationships), death anxiety may also drive maladaptive coping strategies, such as avoidance (of reminders of mortality, such as by avoiding hospitals, or of situations with the potential to result in death, such as flying or heights; Yalom, 2008). As such, death anxiety has been considered a transdiagnostic construct, underpinning the development and maintenance of numerous mental disorders (Iverach, Menzies, & Menzies, 2014).

Increasing evidence supports this claim. For example, findings suggest that death reminders increase anxious responding among spider phobics, and social avoidance among participants high in social anxiety (Strachan et al., 2007). Significant correlations have also been found between death anxiety and symptoms of separation anxiety (Caras, 1995), hypochondriasis (Noyes, Stuart, Longley, Langbehn, & Happel, 2002), post-traumatic stress disorder (Martz, 2004), depression (Thorson & Powell, 2000) and disordered eating (Le Marne & Harris, 2016).

However, although the aforementioned studies provide suggestive evidence for the role of death anxiety in a number of disorders, few studies have used clinical, treatment-seeking samples, making generalisations to individuals with diagnoses premature. As a result, the relationship between fears of death and symptomology among those with an actual disorder remains largely unclear, and the relevance of such findings to implications for treatment is premature at best. Recently, Menzies and Dar-Nimrod (2017) examined the responses of 171

treatment-seeking participants diagnosed with obsessive-compulsive disorder (OCD), revealing moderate to large correlations between death anxiety and OCD severity, distress/impairment, and the number of hospitalisations, medications, and diagnoses across the lifespan. Importantly, these relationships all remained significant after controlling for neuroticism, suggesting the unique relationship between fears of death and mental health. In an experimental study, reminders of death significantly increased compulsive cleaning behaviours among OCD washers (Menzies & Dar-Nimrod, 2017). Again, notably, neuroticism did not significantly predict cleaning behaviours, further highlighting the specific role of death anxiety in driving clinically-relevant behaviours, above and beyond trait anxiety. Outside of OCD, the relationship between death anxiety and psychopathology has not been explored using treatment-seeking samples.

Given the dearth of research with clinical populations, the role of moderators of death anxiety among these individuals is also a viable area for exploration. That is, if such moderators can be identified, this may inform future interventions aiming to address death anxiety, by offering new possible treatment targets which may potentially serve to reduce the impact of death fears. Relevant literature hints at such potential moderators, identifying two leading candidates.

Firstly, the attachment system, which drives us to seek security from others or to utilise our self-reliance in order to deal with real or symbolic threats, appears to attenuate existential concerns (Mikulincer, 2018). Reminders of death have been shown to increase various attachment-related behaviours, such as commitment to one's partner (Florian et al., 2002), desire for physical proximity to other participants in a group discussion (Wisman & Koole, 2003), and mental accessibility of words associated with attachment stability (e.g., 'hug'; Mikulincer, Birnbaum, Woddis, & Nachmias, 2000). Further, a secure attachment style (i.e., feeling

comfortable in intimate relationships and with both acting independently and relying on others) appears to be associated with lower fears of death, relative to an ambivalent (seeking high intimacy with others while fearing that others may not wish for closeness) or avoidant (feeling uncomfortable with others' desires for intimacy) attachment style (Florian & Mikulincer, 1998; Mikulincer, Florian, & Tolmacz, 1990). In addition, there is evidence for the role of attachment style as a moderator of death anxiety and another variable, 'symbolic immortality' (i.e., one's belief in a sense of personal continuity after death, which has been argued to be adaptive and reduce distress), among non-clinical participants (Florian & Mikulincer, 1998).

Secondly, there is preliminary evidence for the relationship between death anxiety and meaning in life, defined as one's sense that their life has a satisfying or clear purpose (Steger, Frazier, Oishi, & Kaler, 2006). Routledge and Juhl (2010) found that reminders of death selectively increased death anxiety among individuals with lower meaning in life, while such reminders did not produce exacerbated death fears among participants who reported higher meaning in life. Additionally, when mildly depressed participants were given the opportunity to bolster their buffers against death anxiety, they reported an increased belief that life is meaningful (Simon, Arndt, Greenberg, Solomon, & Pyszczynski, 1998). Further, one recent systematic review of psychological interventions among patients with advanced cancer concluded that treatments which focused on creating meaning appeared to have a beneficial effect on death attitudes or general wellbeing, building further support for the idea that meaning in life may protect individuals from existential dread (Grossman, Brooker, Michael, & Kissane, 2018).

Thus, the present study aimed to explore whether, consistent with Iverach et al.'s (2014) proposal that fears of death underpin numerous mental health conditions, death anxiety is

associated with psychopathology across various disorders. It further aimed to examine whether attachment style and meaning in life moderate the relationship between death anxiety and psychopathology within clinical samples. As such, it was hypothesised that (a) death anxiety is positively correlated with broad markers of psychopathology and disorder severity; and (b) meaning in life and attachment style moderate these relationships, such that greater sense of meaning and a secure attachment style reduce the size of the relationship between death anxiety and psychopathology.

Method

Participants

At a large psychology practice in Sydney, Australia, 242 patients identified with a non-psychotic diagnosis were invited to participate in the study by assessing clinicians not involved in the study; 200 agreed to participate (126 women). This sample size was determined by power analysis, which revealed that in order to detect a small to moderate correlation (r = .20) across the sample, 200 participants would be necessary to obtain power to the level of 0.8. The sample consisted of Caucasian (92.5%), Asian (6.5%), and Indigenous Australian (0.5%) participants. The mean age was 33.76 years (SD = 11.51; Range: 18-65 years), and mean years of education were 15.70 (SD = 1.99; Range: 11-21 years). The *Anxiety and Related Disorders Interview Schedule for DSM-5, Lifetime Version* (ADIS-5L; Brown & Barlow, 2014) was administered to these participants, and all participants satisfied criteria for a current diagnosis on the ADIS-5L. The study was approved by the University of Sydney Human Research Ethics Committee.

Materials and Procedure

Apart from the ADIS-5L, which was administered by a clinical psychologist with postgraduate training, specific ADIS training, and 33 years of clinical and research experience, the measures were completed in a single testing session on an iPad Air 2, using the Qualtrics survey software. Participants completed a core set of questionnaires, as well as disorder-specific questionnaires, as detailed below. The following core measures were administered to all participants:

Measure of Death Anxiety:

Multidimensional Fear of Death Scale (MFODS; Hoelter, 1979): A 42-item measure of death anxiety with eight 7-item subscales. Each item is rated on a 5-point scale. A higher score on any subscale indicates **lower** death anxiety. The MFODS subscales have shown good psychometric properties (Walkey, 1982), and the internal consistency of the overall scale in the current sample was high ($\alpha = 0.97$). Internal consistency was high for seven of eight subscales (Fear of the Dying Process: $\alpha = 0.94$; Fear of the Dead: $\alpha = 0.90$; Fear of Being Destroyed: $\alpha = 0.87$; Fear for Significant Others: $\alpha = 0.85$; Fear of Conscious Death: $\alpha = 0.89$; Fear for Body After Death: $\alpha = 0.91$; and Fear of Premature Death: $\alpha = 0.89$). Internal consistency was poor for one subscale, Fear of the Unknown ($\alpha = 0.31$), due to one item: "I am afraid of meeting my creator". When this item was deleted, Cronbach's alpha for this subscale rose to $\alpha = 0.81$. As such, this item was deleted before conducting all analyses reported below.

Clinically Relevant Measures:

The ADIS-5L (Brown & Barlow, 2014): The ADIS-5L is a structured clinical interview designed to establish both lifetime and current diagnoses for mood, anxiety and related disorders.

It uses the criteria of *The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5; APA, 2013). It was used in the present study to determine participant eligibility and to establish number and severity of diagnoses, and overall distress/impairment.

Depression Anxiety Stress Scales-21 (DASS-21; Lovibond & Lovibond, 1995): A 21-item measure with three 7-item subscales measuring: Depression (e.g., hopelessness), Anxiety (e.g., autonomic arousal) and Stress (e.g., difficulty relaxing). Each item is rated on a four-point scale, with higher scores indicating greater distress. The DASS-21 has shown good internal consistency among clinical samples (Page, Hooke, & Morrison, 2007), and internal consistency of the overall scale was high in the present sample ($\alpha = 0.96$). The internal consistency of the subscales was also high ($\alpha = 0.93$ to 0.95).

Potential Moderators:

Adult Attachment Styles (AAS; Hazan & Shaver, 1987): This questionnaire assesses attachment styles by asking participants to select one of three paragraphs, based on which is most descriptive of their own feelings in relationships (e.g., "I find it relatively easy to get close to others and am comfortable depending on them, and having them depend on me", "I am somewhat uncomfortable being close to others…I am nervous when anyone gets too close" and "I find that others are reluctant to get as close as I would like", to reflect secure, avoidant, or anxious/ambivalent styles, respectively). The AAS has shown acceptable test-rest reliability (Kirkpatrick & Hazan, 1994).

The Meaning in Life Questionnaire (MLQ; Steger et al., 2006): A 10-item measure with two subscales, each with five items: Presence of Meaning, which assesses one's sense that one's

life is meaningful (e.g., “My life has a clear sense of purpose”), and Search for Meaning, which measures one’s drive to find meaning (e.g., “I am looking for something that makes my life feel meaningful”). Items are rated on 7-point response scales, with a higher score indicating a greater sense of (or strive for) meaning. The MLQ has shown good internal consistency and validity (Steger et al., 2006), and internal consistency was excellent for both subscales ($\alpha = 0.93$ and 0.90, respectively).

The Big Five Aspects Scales (BFAS; DeYoung, Quilty, & Peterson, 2007): A 20-item Neuroticism subscale of the BFAS was administered, in order to assess the possibility that neuroticism may be a potential confound. This is consistent with previous research methodology, and previous findings that death anxiety predicts psychopathology even after controlling for neuroticism (Menzies & Dar-Nimrod, 2017). The BFAS has shown good psychometric properties (DeYoung et al.), and the internal consistency in the current study was good ($\alpha = 0.82$).

Self-Report Measures of Disorder Severity:

In addition, self-report questionnaires developed for specific disorders were administered to relevant participants. Each participant completed one measure for each of their current diagnoses. For example, a participant with both OCD and social anxiety disorder would complete the core measures reported above, in addition to two questionnaires specific to these two disorders. Across the sample, 49.5% of participants had more than one current diagnosis, and thus completed more than one disorder-specific measure. Only disorder-specific measures that were completed by 10 or more participants have been reported below:

Agoraphobia Scale (AS; Öst, 1990): A 20-item self-report measure of agoraphobia severity. A score for 'anxiety' and 'avoidance' is calculated separately, with anxiety for each item being rated on a five-point scale, and avoidance rated on a three-point scale. There is evidence that the AS is valid, reliable, and sensitive to treatment effects (Öst). Internal consistency in the current sample was excellent for both the overall measure (α = .99), and the two subscales (α = .97 and .99).

Beck Depression Inventory (BDI-II; Beck, Steer & Brown, 1996): A widely-used 21-item self-report measure assessing severity of depressive symptoms. Each item is rated on a four-point scale. The BDI-II has shown strong psychometric properties (Segal, Coolidge, Cahill, & O'Riley, 2008), and internal consistency was excellent in the current sample (α = .98).

Claustrophobia Questionnaire (CLQ; Radomsky, Rachman, Thordarson, McIsaac, & Teachman, 2001): A 26-item self-report measure of anxiety towards commonly feared situations in claustrophobia. Each item is rated on a five-point scale. There is evidence for its reliability and validity (Radomksy et al.), and the internal consistency of both subscales (α = .98) and the overall measure (α = .99) for the current sample was excellent.

The Dysmorphic Concern Questionnaire (DCQ; Oosthuizen, Castle, & Lambert, 1998): A seven-item self-report measure of symptoms of body dysmorphic disorder (BDD). The DCQ has been shown to have good reliability, validity, and internal consistency among a clinical sample (Jorgensen, Castle, Roberts & Groth-Marnat, 2001). In the current sample, the internal consistency was excellent (α = .92).

Generalised Anxiety Disorder-7 (GAD-7; Spitzer, Kroenke, Williams & Löwe, 2006): A seven-item measure assessing symptom severity in GAD on a four-point scale. There is evidence for its reliability and validity (Löwe et al., 2008), and internal consistency was excellent in the current study (α = .94).

Health Anxiety Inventory (HAI; Salkovskis, Rimes, Warwick, & Clark; 2002): An 18-item measure which assesses symptoms of illness anxiety disorder. Items are rated on a four-point scale. There is evidence for its reliability, internal consistency, and sensitivity to treatment effects (Salkovskis et al.), with excellent internal consistency in the current sample (α = .97).

Panic Disorder Severity Scale – Self Report Form (PDSS; Shear et al., 1997): A seven-item measure of panic disorder severity, with items rated on a five-point scale. The PDSS-SR has shown good test-retest reliability, internal consistency, and sensitivity to treatment effects (Houck, Spiegel, Shear, Rucci, & Stat, 2002), and internal consistency in the present study was excellent (α = .94).

Severity of Alcohol Dependence Questionnaire (SADQ; Stockwell, Murphy, & Hodgson, 1983): A 20-item self-report measure of alcohol dependence. Each item is rated on a four-point scale. There is evidence for its high internal reliability (Stockwell et al., 1994), as well as for its construct validity and test-retest reliability (Stockwell et al.). Internal consistency in the current sample was excellent (α = .98).

Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998): A 20-item measure assessing cognitive, behavioral and affective symptoms of social anxiety disorder. Each item is rated on a five-point scale. There is evidence for its reliability and validity (Heimberg, Mueller,

Holt, Hope, & Leibowitz, 1992), and excellent internal consistency was found in the present sample (α = .94).

The Somatic Symptom Scale-8 (SSS-8; Gierk et al., 2014): An eight-item measure of somatic symptom burden, used to assess those with somatic symptom disorder (Kurlansik & Maffei, 2016). Each item is rated on a five-point scale. The validity and reliability of the SSS-8 has been demonstrated previously (Gierk et al., 2014), and internal consistency in the current sample was good (α = .89).

The Vancouver Obsessive Compulsive Inventory (VOCI; Thordarson et al., 2004): A self-report measure of obsessive compulsive behavior using six subscales: Contamination (12 items), Checking (6 items), Obsessions (12 items), Hoarding (7 items), Just Right (12 items), and Indecisiveness (6 items). Each item is rated on a five-point scale. The VOCI has shown good psychometric properties (Thordarson et al.). Internal consistency in the current study was excellent for both the overall measure (α = .97) and the individual subscales (ranging from α = .92 to .98).

Statistical Analyses

In order to test the first hypothesis, severity of psychopathology was operationalised using a composite score created from the seven broad markers of mental health: number of lifetime diagnoses, current medications, prior hospitalisations, the clinician's ADIS-5L judgement of overall distress/impairment, and DASS-21 depression, anxiety and stress scores. These variables were collapsed into a composite score in order to reduce the number of statistical tests and, consequently, the risk of type I error. When these seven variables were combined into a composite score, with a higher composite score indicating more severe psychopathology (e.g.,

higher number of lifetime diagnoses and hospitalisations), the internal consistency was excellent ($\alpha = 0.91$). Similarly, in order to examine the severity of specific disorders, a composite severity score was created for each disorder. As above, this decision was made with the aim of reducing capitalisation on chance. This composite disorder severity score was created using an average of the clinician's ADIS-5L severity rating and the score on the self-report measure for each disorder, both of which were standardised. Notably, the correlations between the self-report and clinician estimates of severity for each disorder were large, with the exception of body dysmorphic disorder, which was medium-to-large (see Table 3).

For the six specific disorders for which there were 20 or more participants, the Bonferroni procedure was used to control the family-wise error rate at .05 ($p_{critical} < .008$) for the associations between MFODS scores and psychopathology. For the six correlations for which there were less than 20 participants, given the small sample size, these correlations are reported to allow the effect size to be displayed. We caution the reader against using the significance indications in such small samples.

In order to test the second hypothesis exploring potential moderators, the relevant continuous variables (e.g., MFODS, search for meaning and presence of meaning) were standardised, and an interaction term was created (e.g., between mean-centred search for meaning and MFODS scores). In the first step, the relevant moderator and MFODS scores were entered. Moderation was then examined when the interaction term was entered in the second block. This method was used to produce all betas and changes in R^2 reported below for the moderation analyses. For the three stepwise hierarchical regressions conducted to examine moderation, the error rate was controlled at .05 ($p_{critical} < .017$).

Results

Characteristics of the sample are reported in Tables 1 and 2. The MFODS scores of the sample were significantly lower than community norms (e.g., M = 150.20, Sharma, Monsen, & Gary, 1997), indicating higher death anxiety among the present sample relative to normative data. The mean MFODS scores for each disorder are reported in Table 3.

INSERT TABLES 1 AND 2 ABOUT HERE

Primary Analyses

As hypothesised, across the sample, a significant and very large bivariate correlation was found between total MFODS and the composite measure of psychopathology (r = -.79). Further, when the seven individual markers of broad mental health were examined, all relationships with MFODS were large and significant, ranging from r = -.55 to r = -.75 (all p's < .0001).

Additional analyses were conducted to assess whether these correlations could in fact be explained by a third variable: Neuroticism. A stepwise hierarchical regression analysis revealed that MFODS scores significantly predicted psychopathology, after controlling for neuroticism, β = -.686, $t(193)$ = -15.12, p < .001, ΔR^2 = .05. Further, as previous findings reported relationships between death anxiety and psychopathology in patients with OCD (Menzies & Dar-Nimrod, 2017), a sensitivity analysis was conducted on the same correlations using only participants who had never been diagnosed with OCD. This analysis was conducted in order to ensure that the significant findings were not solely due to the large proportion of individuals in the sample with OCD, given that a previous study had already found large correlations within this population. The correlations between total MFODS and all of the aforementioned markers of psychopathology remained significant (all p's < .001).

Similar results were obtained when examining the relationship between fear of death and the severity of specific disorders. As hypothesised, for all six disorders with more than 20

participants (i.e., OCD, GAD, Major Depressive Disorder, Social Anxiety Disorder, Panic Disorder and Illness Anxiety Disorder), significant and large correlations were found between composite severity scores and death anxiety. Further, for the remaining six disorders for which there were 20 or fewer participants (i.e., Alcohol Use Disorder, Somatic Symptom Disorder, Persistent Depressive Disorder, Agoraphobia, Claustrophobia, and Body Dysmorphic Disorder) the size of the correlations between composite disorder severity scores and death anxiety appeared consistent with the aforementioned disorders with more participants, with the possible exception of Body Dysmorphic Disorder (see Table 3).

INSERT TABLE 3 ABOUT HERE

Secondary Analyses

Meaning in life.

Two stepwise hierarchical regressions were used to explore the potential role of meaning in life in moderating the relationship between death anxiety and psychopathology. Presence of meaning significantly predicted the psychopathology composite, β = -.143, $t(193) = -3.59$, $p < .001$, $R^2 = .649$, while search for meaning did not, $\beta = .016$, $p = .719$, $R^2 = 626$. The interactions between presence of meaning and MFODS in the first analysis and search for meaning and MFODS in the second analysis, entered in the second step of the analyses, were non-significant, $\beta = .054$, $p = .238$, $\Delta R^2 = .003$, and $\beta = .062$, $p = .156$, $\Delta R^2 = .004$ (respectively).

Attachment Style.

The results of the AAS indicated a roughly even distribution of attachment styles across the sample, with 65 (32.5%) participants reporting a secure attachment style, 71 reporting an avoidant attachment style (35.5%), and 64 (32%) reporting an anxious/ambivalent attachment

style. Attachment style was dummy coded and dichotomised as 'secure' or 'insecure', the latter of which included both avoidant and anxious/ambivalent styles. In order to examine the second hypothesis, a stepwise hierarchical regression analysis was used to explore whether attachment style moderated the relationship between death fears and any markers of psychopathology. First, attachment style did not significantly predict the psychopathology composite, $\beta = .081$, $p = .068$, $R^2 = .632$. Also, the interaction between attachment style and MFODS, entered in the second step of the analyses, was non-significant, $\beta = -.047$, $p = .596$, $\Delta R^2 = .001$.

Discussion

Consistent with the first hypothesis, large positive correlations were found between death anxiety and a composite measure of psychopathology as well as each of its specific markers: the number of lifetime diagnoses, medication usage, prior hospitalisations, clinician ratings of distress/impairment, depression, anxiety, and stress. Importantly, these relationships remained significant after controlling for neuroticism, consistent with prior research (Menzies & Dar-Nimrod, 2017). Moreover, for all six disorders with more than 20 participants, significant and large correlations were found between death anxiety and severity of disorder symptoms. Further, for the remaining six disorders for which there were 20 or fewer participants, the correlations between severity and death fears appeared to be equally substantial, although moderate caution should be used when extrapolating from these latter findings due to the small samples. Taken together, these findings support the assertion that death anxiety is a transdiagnostic construct (Iverach et al., 2014), and are consistent with previous findings supporting the relationships between death fears and the severity of specific disorders (e.g., OCD; Menzies & Dar-Nimrod, 2017).

However, contrary to predictions, although presence of meaning in life predicted psychopathology, neither attachment style nor meaning in life moderated the relationship between death anxiety and psychopathology. This is inconsistent with previous findings that attachment style moderates death anxiety among non-clinical participants (Florian & Mikulincer, 1998), and preliminary evidence of a relationship between death fears and perceived meaning in life among non-clinical (Routledge & Juhl, 2010) and mildly depressed participants (Simon et al., 1998). One potential explanation for the failure to observe either moderating relationship in the present study is the high levels of death fear in the current sample. While adequate meaning in life and a secure attachment style may protect the average individual from fears of death, it is possible that these may prove insufficient in the face of clinical levels of death anxiety. It is also possible that among people with mental health problems, the attenuating effects of meaning in life and attachment styles may be reduced, consistent with the view that psychopathology may be a result of ineffective "buffers" which would ordinarily protect an individual from the dread of death (e.g., Pyszczynski & Taylor, 2016). Further, the absence of clinical samples in the aforementioned studies, may also explain this difference in findings. Although Simon et al. (1998) used a mildly depressed sample of undergraduate students, the present sample was not only treatment-seeking, but in addition, scored in the 'moderate' range on the depression subscale on the DASS-21 across the sample. Further, among the quarter of the current sample with a diagnosis of a depressive disorder, their mean depression score on the BDI-II was almost double the mean of the sample in Simon et al.'s study. Thus, it is possible that for individuals with high levels of death fears or moderate to severe levels of psychopathology, as found in the present sample, attachment style and meaning in life are insufficient in influencing the relationship between death anxiety and mental health. In addition, the stark differences in

methodological design between the current correlational study and the experimental manipulations employed by previous studies, which measured attachment-related behaviours (e.g., Mikulincer et al., 2000; Wisman & Koole, 2003) and meaning in life (Simon et al., 1998) only after priming participants with reminders of death (or a control topic), could further explain the non-significant findings regarding meaning in life and attachment style in the present study. Although these two variables did not appear to be significant moderators in the present study, future research may benefit from examining other potential moderators among a clinical population. For instance, self-esteem has been implicated in previous relevant studies, with findings demonstrating that reminders of death selectively reduce hope (Wisman & Heflick, 2016) and increase negative affect (Routledge et al., 2010) among individuals with low self-esteem, but not those with high self-esteem. As such, self-esteem could prove a viable direction for future research.

Before considering the findings, the limitations of the current study should be considered. Notably, the correlational design limits the drawing of conclusions regarding causality. As such, the direction of causality is not clear, and it is possible that an additional variable is the primary driver of both death anxiety and psychopathology. Second, the use of the AAS, a categorical and single-item measure of attachment, may also explain the lack of significant findings related to attachment style as a moderator. Future research may benefit from utilising more dimensional measures, such as the Revised Adult Attachment Scale (Collins, 1996) which may capture the nature of attachment style more effectively. Third, the small number of participants recruited for some disorders may limit the ability to draw conclusions regarding the relevance of death anxiety on the specific symptomology of these particular conditions. However, the striking similarities in the pattern and size of the associations between symptom severity and death fears suggest that,

at present, there is no indication that death fears predict severity differently across different disorders. Further research may aim to delve into some of these specific disorders further, exploring whether the correlations remain with larger samples.

Having acknowledged these limitations, the strengths of the present study are notable. Despite their correlational nature, these results are consistent with the claim that death anxiety is a transdiagnostic construct (Iverach et al., 2014). In addition, while one could argue that a third variable may in fact be driving both death anxiety and psychopathology, the measurement of neuroticism in the present study served to rule out one obvious potential candidate. Importantly, the findings that the correlation between death anxiety and psychopathology remained significant after controlling for neuroticism may add some weight to the importance of the unique relationship between death fears and mental health. Further, the associations found appear more consistent, and at least as strong, as those found for some other proposed transdiagnostic constructs, such as perfectionism (Limburg, Watson, Hagger, & Egan, 2017), and rumination (de Jong-Meyer, Beck, & Riede, 2009; McLaughlin, Wisco, Aldao, & Hilt, 2014). Unlike previous studies, the present study used a large, treatment-seeking, clinical sample, made up of individuals with many different diagnoses, extending upon previous studies which have typically focused on individual disorders. Lastly, to the best of our knowledge, this is the first study to assess the role of attachment style and meaning in life as potential moderators of the relationship between death anxiety and psychopathology among a treatment-seeking sample.

The results of the present study offer some support for Iverach et al.'s (2014) claim that death anxiety is transdiagnostic. As such, in line with this argument, it is possible that innovative treatments targeting death anxiety are needed to produce long-term improvements in mental health. Standard treatments which fail to address the patient's deep-rooted existential

fears, may in fact contribute to the "revolving door" of mental health conditions (p. 590). That is, it is common for patients to receive treatment for one anxiety-related disorder yet return with a different condition later in life. Although few intervention studies have specifically addressed death anxiety in the context of mental health problems, death fears have been treated in other contexts. One recent meta-analysis (Menzies, Zuccala, Sharpe, & Dar-Nimrod, 2018) explored the effects of psychosocial interventions on death anxiety across 15 randomised controlled trials. The findings revealed that Cognitive Behaviour Therapy (CBT) was particularly effective, producing significant reductions in death anxiety relative to control conditions and other therapies. Despite the absence of clinical samples, this result suggests that CBT may be useful in addressing death fears and their resulting psychopathology. Of course, further research is needed to establish the efficacy of treatments targeting death anxiety in improving symptomology among clinical samples, above and beyond the effects of standard treatments.

Concluding Comments

Despite theoretical accounts arguing that death anxiety is a transdiagnostic construct, few empirical studies have explored this claim using clinical samples. The present study included 200 treatment-seeking individuals with a diagnosed mental illness revealing large correlations between death anxiety and psychopathology. In addition, for 12 disorders, large correlations were found between death anxiety and ratings of disorder severity. Notably, neither meaning in life nor attachment style moderated the effect of death fears on psychopathology. These findings support the notion that death anxiety is a transdiagnostic construct, associated with various mental health conditions. Given the correlational design of the present study, future

experimental research is needed to explore whether reminders of death impact disorder-relevant behaviours (e.g., avoidance, checking) among participants diagnosed with a mental illness.

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Table 1
*Summary of Sample Characteristics (*N = *200)*

Measure	*M*	*SD*
ADIS-5L severity of principle diagnosis	5.90	1.61
ADIS-5L distress/impairment	6.09	1.61
Current no. of medications	1.15	1.18
Total no. of medications	1.98	1.98
No. of hospitalisations	0.61	0.94
Current ADIS-5L diagnoses	1.74	0.96
Total ADIS-5L diagnoses	3.14	2.03
DASS-21 Depression	7.58	6.03
DASS-21 Anxiety	8.10	5.59
DASS-21 Stress	9.52	5.74
MLQ Search for Meaning	20.85	5.45
MLQ Presence of Meaning	20.41	6.55
MFODS total score	113.89	39.90

Note. ADIS-5L = Anxiety and Related Disorders Interview Schedule for DSM-5 – Lifetime Version; DASS-21 = Depression Anxiety and Stress Scales; MFODS = Multidimensional Fear of Death Scale; A higher score on this measure indicates less death anxiety, while a lower score indicates higher death anxiety; MLQ = Meaning in Life Questionnaire.

Table 2
Summary of Sample Characteristics: Prior and Current Diagnoses

	Diagnostic criteria met (ADIS-5L)					
	Currently		Previously		Never	
DSM-5 Diagnosis	*n*	%	*n*	%	*n*	%
Agoraphobia	13	6.5%	7	3.5%	180	90.0%
Alcohol Use Disorder	18	9.0%	8	4.0%	174	87.0%
Anorexia Nervosa	1	0.5%	12	6.0%	187	93.5%
Bipolar Disorder	7	3.5%	0	0%	193	96.5%
Body Dysmorphic Disorder	11	5.5%	5	2.5%	184	92.0%
Bulimia Nervosa	1	0.5%	4	2.0%	195	97.5%
Excoriation Disorder	1	0.5%	0	0.0%	199	99.5%
Generalised Anxiety Disorder	43	21.5%	3	1.5%	154	77.0%
Hoarding Disorder	1	0.5%	0	0.0%	199	99.5%
Illness Anxiety Disorder	19	9.5%	26	13.0%	155	77.5%
Major Depressive Disorder	39	19.5%	30	15.0%	131	65.5%
Obsessive-Compulsive Disorder	79	39.5%	19	9.5%	102	51.0%
Panic Disorder	24	12.0%	31	15.5%	145	72.5%
Persistent Depressive Disorder	15	7.5%	1	0.5%	184	92.0%
Posttraumatic Stress Disorder	3	1.5%	0	0.0%	197	98.5%
Separation Anxiety Disorder	1	0.5%	39	19.5%	160	80.0%
Social Anxiety Disorder	33	16.5%	4	2.0%	163	81.5%
Somatic Symptom Disorder	17	8.5%	16	8.0%	167	83.5%
Specific Phobia	20	10.0%	73	36.5%	107	53.5%
Substance Use Disorder	0	0.0%	2	1.0%	198	99.0%
Trichotillomania	1	0.5%	0	0.0%	199	99.5%

Note. ADIS-5L = Anxiety and Related Disorders Interview Schedule for DSM-5 – Lifetime Version; DSM-5 = Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition.

Table 3

Summary of Pearson Correlations Between MFODS and Disorder Severity, and Mean MFODS of the Disorders (n=*200)*

Disorder	OCD	GAD	MDD	SAD	PD	IAD	AUD	SSD	PDD	Agor.	Claus.	BDD
n	(77)	(43)	(38)	(34)	(23)	(20)	(16)	(17)	(15)	(13)	(10)	(10)
	-.80	-.73	-.66	-.77	-.80	-.75	-.70	-.62	-.66	-.73	-.66	-.82
p	<.001	<.001	<.001	<.001	<.001	<.001	.003	.008	.008	.004	.034	.004
Correlation between self-report measures and ADIS-5L severity ratings	.62	.73	.82	.70	.69	.84	.77	.85	.80	.73	.72	.41
Mean MFODS	108.90	96.26	97.65	113.18	103.21	99.85	104.89	94.06	104.35	99.77	105.40	121.93
(*SD*)	(41.41)	(40.36)	(33.37)	(47.41)	(39.94)	(35.14)	(38.29)	(33.47)	(28.76)	(40.88)	(49.54)	(29.72)

Note. ADIS-5L = Anxiety and Related Disorders Interview Schedule for DSM-5 – Lifetime Version; Agor. = Agoraphobia; AUD = Alcohol Use Disorder; BDD = Body Dysmorphic Disorder; Claus. = Claustrophobia; GAD = Generalised Anxiety Disorder; IAD = Illness Anxiety Disorder; MDD = Major Depressive Disorder; MFODS = Multidimensional Fear of Death Scale (a higher score on this measure indicates less death anxiety, while a lower score indicates higher death anxiety); OCD = Obsessive-Compulsive Disorder; PD = Panic Disorder; PDD = Persistent Depressive Disorder; SAD = Social Anxiety Disorder; SSD = Somatic Symptom Disorder.