

From fear to disorder: A cross-sectional study that meta-analyzed the effect of death anxiety on symptoms of mental disease in Kurnool, Andhra Pradesh.

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Abstract

According to a growing body of research, death fear may be trans diagnostic and play a significant part in the emergence and manifestation of psychopathology. This meta-analysis looked at the connection between symptoms of mental illness and death anxiety. There were 104 articles in all, representing experimental data from 11 research and cross-sectional data from 99 investigations. There was a moderate association ($r = 0.397$) between death anxiety and general symptoms of mental disease, according to meta-analyses of cross-sectional research. One important mediator of this impact was the group's therapeutic orientation. Furthermore, compared to depression, the association between death anxiety and symptoms of mental disease was stronger for clinical samples ($r = 0.580$) and anxiety-related symptoms ($r = 0.506$). Death reminders showed a moderate overall effect on clinical symptoms, according to additional meta-analyses of 11 mortality salience studies ($g = 0.481$). This association was significantly anticipated by the sample's relevance to the symptom being measured; that is, when omitting comparison subgroups for which the authors did not predict the effect, the effect was moderate-to-large ($g = 0.671$). The effect was not considerably mitigated by the clinical nature of the sample. Compared to cross-sectional studies, experimental studies were often of higher quality and had a lower risk of publication bias. These results confirm that death fear has a significant trans diagnostic function in a wide range of illnesses. Clinical ramifications include the possible necessity of directly treating death anxiety in order to optimise the advantages of long-term therapy. Data gathered from participants in Kurnool, Andhra Pradesh, was carefully examined in this study.

Introduction

Humans are genetically inclined to survive, just like all other species. But humans have a special ability to think deeply and are acutely aware of our own mortality, which sets us apart from other creatures. According to cultural anthropologists, this awareness can result in a severe fear of dying, which can influence our actions and pursuits throughout our lives. The knowledge of death can still cause a great deal of distress, even though many people may learn adaptive coping mechanisms to deal with their death anxiety (such as trying to leave a legacy or engaging in meaningful activities despite life's end). In order to comprehend the regional patterns of death fear and its connection to symptoms of mental disease, the current study was conducted in Kurnool, Andhra Pradesh, a culturally varied area. Humans are protected from death fears by two things, according to Terror Management Theory: (1) cultural worldviews (such as shared values or belief systems), which provide a sense of permanence and meaning; and (2) self-esteem, which is attained by living up to the expectations of our cultural worldview, which gives us symbolic immortality and a sense that our lives matter. According to this viewpoint, when these buffers are ineffective because of stressors in life, issues with bonding, or genetic predispositions, psychological vulnerability may result. Furthermore, make the case that certain diseases, like phobias, might arise when a person's fear of dying is directed towards dangers that are easier to manage and prevent than death itself, like spiders or

germs. According to the existential perspective, which is consistent with TMT explanations, people are "forever shadowed by the knowledge that we will grow, blossom, and inevitably, diminish and die," which is why death dread is a factor in many mental health issues. Therefore, it is possible to see the avoidance behaviours that define many common anxiety disorders as maladaptive attempts to ward off death (or reminders of mortality). Social psychology (e.g., TMT), existential psychotherapy, and cultural anthropology all make the case that unresolved death anxiety can lead to psychopathology. Accordingly, it has been suggested that death anxiety is transdiagnostic, possibly underlying a wide range of psychiatric disorders. For instance, make the case that a primary characteristic of health anxiety is dread of death, meaning that people who are afraid of getting a major illness are particularly concerned about the possibility of dying. Similar to how panic disorder frequently involves worries of a heart attack or a fatal collapse, obsessive-compulsive disorder frequently involves fears of serious sickness brought on by contamination, home fires, and unintentionally hurting oneself or others. Additionally, after a horrific, frequently near-death encounter, people with post-traumatic stress disorder (PTSD) have severe concern about their safety (APA, 2022). Several cross-sectional investigations have found a strong correlation between death fear and psychopathological symptoms, confirming the link between mortality concerns and mental disease. For instance, it has been noted that symptoms of OCD, health anxiety, general anxiety, and depression are all substantially connected with a dread of dying. Significant connections have been shown between death anxiety and addictions, personality disorders, and disordered eating, even though the majority of research to far has been on anxiety and mood-related disorders. The impact of death dread on the mental health of those suffering from physical ailments has also drawn attention. For instance, those who suffer from cancer, rheumatoid arthritis, cardiovascular disease, and a variety of other chronic conditions have been linked to worse mental health outcomes when they fear death. Even though a lot of research has shown that death fear is somewhat relevant, experimental research is still needed to establish whether death anxiety actually contributes to mental health issues. Studies have employed a "mortality salience" (MS) design, which arose from TMT, to assess this potential. These studies look at how reminders of death affect a particular conduct by randomly assigning individuals to either a control topic or death priming. According to a meta-analysis of 277 MS studies, death reminders generally have a moderate effect on a variety of non-clinical behaviours. Individual studies have shown that MS causes notable increases in symptoms like compulsive handwashing, social avoidance, and food restriction in the context of clinically relevant behaviours. This suggests that death anxiety plays a causal role in disorders like OCD, social anxiety, and eating disorders. Therefore, there hasn't been any meta-analytic research on death anxiety to date, despite the growing interest in the subject and its connection to psychopathology. Furthermore, this question has not been investigated in the context of mental illness, despite the fact that prior meta-analyses have shown that mortality salience studies have a moderate effect size on a range of human behaviours (such as boosting self-esteem). Examining this subject is especially important for two main reasons. First, the validity of TMT as well as the magnitude and resilience of mortality salience effects have been questioned in light of recent unsuccessful replication attempts. Even if later follow-up research has demonstrated that these specific TMT effects do replicate when studies are adequately powered, it is still crucial to assess the quality, potential risk of bias, and robustness of these clinically relevant studies in particular. Second, it is argued that standard treatments do not usually address death anxiety and may be contributing to the "revolving door" phenomenon in clinical settings. If death anxiety does, in fact, have a significant relationship with many symptoms of mental illness, this would suggest that treatments that specifically target the fear of death are necessary to ensure long-term symptom improvement and prevent the development of new disorders. In other words, after receiving therapy for a clearly distinct condition, it is not unusual for people to develop additional disorders later in life. Meta-analytic empirical evidence supporting the predicted revolving door' effect supports this clinical observation. The possible connection between death anxiety and mental disease must thus be thoroughly investigated meta-analytically, with a focus on findings pertaining to causation. In order to answer the following queries, we carried out the present meta-analysis: 1. How closely do signs of mental illness and death anxiety correlate?

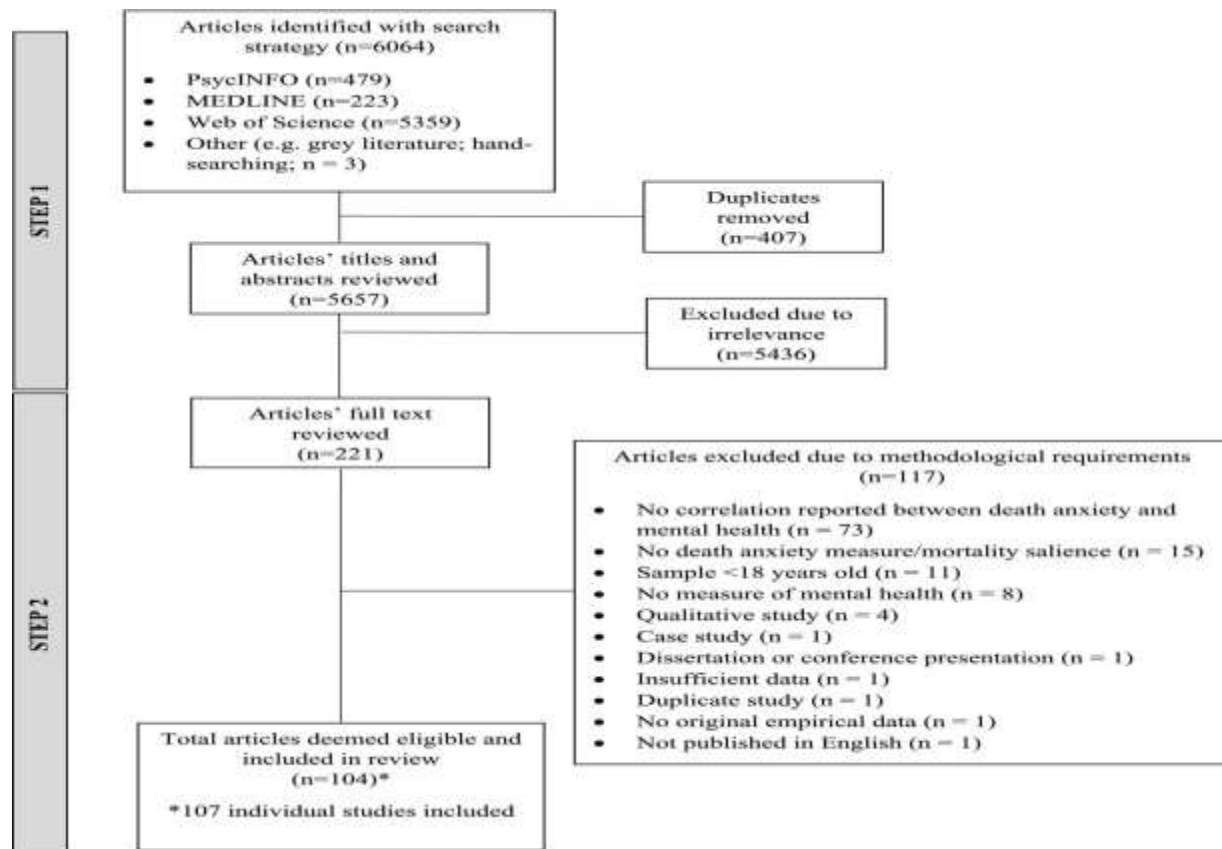
2. How much do death reminders (also known as mortality salience) worsen the symptoms of mental illness?
3. Do clinical and non-clinical samples exhibit different effects?
4. Does the magnitude of this association vary according on the type of symptom or disease (e.g., mood vs. anxiety disorders)?
5. When outcome variables are behavioural measures instead of self-report measures, does MS have a greater impact on symptoms of mental illness?

Registration and literature search

Death anxiety, fear of death and mortality salience, mental illness, mood disorder, affective disorder, anxiety disorder, bipolar disorder, depression, dysthymia, somatoform disorder, conversion disorder, hypochondriasis, illness anxiety, body dysmorphia, social anxiety, panic disorder, agoraphobia, phobia, obsessive compulsive disorder, posttraumatic stress disorder, acute stress disorder, personality disorder, somatic disorder, eating disorder, anorexia nervosa, bulimia, binge eating disorder, substance use disorder, addiction, psychosis, and psychotic disorder were the search terms used. in addition to the insertion of TMT-specific terminology (mortality salience, for example). We searched the Web of Science, PsycINFO, and MEDLINE databases. March 30, 2023, was the date of the first search. On January 9th, 2024, the search was conducted again.

Selection of studies

Kurnool, Andhra Pradesh, served as the study area for data collection, guaranteeing regional representation in the analysis. Studies must: 1) be original empirical peer-reviewed papers; 2) be published in English; 3) use an adult sample (>18 years old); and 4) examine the relationship between death anxiety and mental illness by either using a mortality salience design with a clinically relevant symptom as the dependent variable or by reporting a correlation between measures of death anxiety and a mental illness symptom. Reviews, case studies, dissertations, abstracts, and conference presentations were among the exclusion criteria. No restrictions were placed on the year of publication. The first search yielded 6064 articles in total, 407 of which were duplicates. Because there were so many studies, six authors (KM, MR, SI, GR, BP, and RM) independently assessed the study titles and abstracts in Step 1 to determine which research satisfied the inclusion criteria. Consensus with the initial author (RM) settled all disputes. As a result, papers that were deemed unrelated to the study's objectives were eliminated.



Along with the number of participants in each group, the means for the clinically significant variable for the MS and control groups were taken out for experimental research. In addition to the overall sample size, the association between death anxiety and each symptom of a mental disorder was retrieved for cross-sectional research.

Results

There are features of the 99 cross-sectional studies that were included. Heterogeneity, not chance, accounted for a large amount of variation ($Q_{98} = 1049.73$, $p < .001$, $I^2 = 90.66$). Models of random effects are provided in light of this significant heterogeneity. The average number of participants in the 99 cross-sectional studies was 246.81 (SD = 270.88; $n_{total} = 24,434$), with sample sizes ranging from 13 to 2025. 44.57 years was the average sample age (SD = 17.14 years). On average, women made up 56.32 percent of the sample. Overall, 48 research (48.48%) utilised a community, non-clinical sample (e.g., students); 30 studies (30.30%) used a clinical sample related to a physical condition (e.g., cancer patients); and 12 studies (12.12%) used a clinical sample with mental health issues (e.g., psychiatric outpatients). Because of the use of a mixed sample or a non-representative population, such prisoners, the remaining samples could not be clearly classified as clinical or non-clinical. The United States (25 studies; 25.25 percent), Australia (13 studies; 13.13 percent), and Turkey (11 studies; 11.11 percent) were the most often used research locations. The Templer Death Anxiety Scale was the most widely used death anxiety measure (34 studies; 34.34 percent), followed by the original and revised Collett Lester Fear of Death Scale (seven research each; 7.07 percent), the Death and Dying Distress Scale, and the Death Anxiety Questionnaire. Four studies (4.04 percent) measured personality disorders, three (3.03 percent) measured eating disorders, five (5.05 percent) measured somatic symptom disorders, five (5.05 percent) measured psychosis, eleven (11.11 percent)

measured OCD, 47 (47.47 percent) measured anxiety, and 67 studies (67.68 percent) measured symptoms of depression.

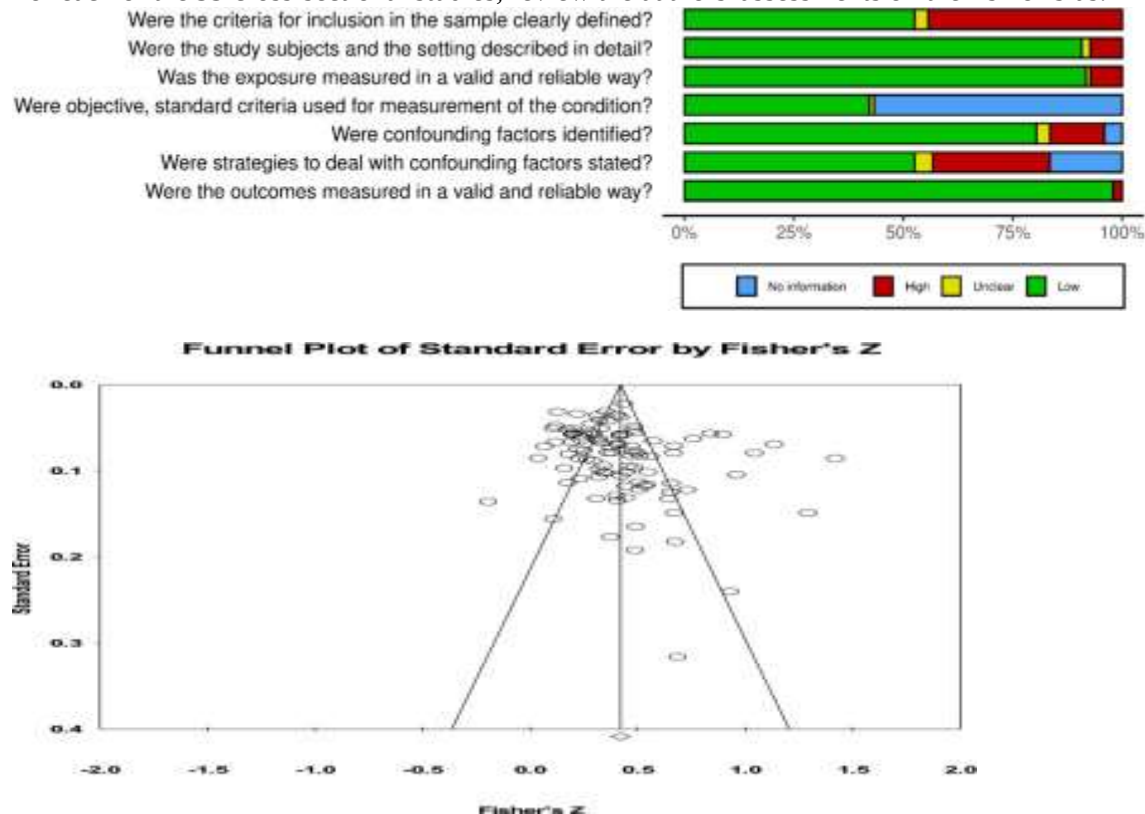
Overall effect

Initially, an assessment of the general relationship between symptoms of mental illness and death anxiety was examined. This analysis comprised all 99 cross-sectional studies. The findings indicated a substantial correlation ($p < .001$) between signs of mental illness and death anxiety. This had a moderate effect size ($r = 0.397$, 95% CI [0.359, 0.433]). Only seven (7.1%) of the 99 examined studies found a non-significant association between psychopathology and death anxiety. These seven research differed in two key ways, which could account for the non-significant associations they found. First, with an average of 125 individuals, their sample size was smaller than that of most research. Second, a larger percentage of these research (five; 71.4%) used a non-clinical sample than the studies that found significant associations.

Moderators

Meta-regression was used to analyse the possible influence of the sample type. The first step was categorising 95 cross-sectional studies as either "clinical" or "non-clinical." Participants with mental or physical problems (such as cancer patients) were included in the clinical sample. Four studies were excluded from this analysis because they used a mixed sample. Heterogeneity remained significant when categorised by sample type ($Q_{93} = 829.38$, $p < .0001$, $I^2 = 88.79$). A meta-regression analysis revealed that the clinical nature of the sample was a significant predictor of the effect magnitude, with a p-value of less than .0001 and a 95% confidence interval [0.164, 0.334]. In other words, the mean correlation for research using a clinical sample was $r = 0.580$, while that of research involving a non-clinical sample was $r = 0.331$. To find out if the effect sizes varied based on the clinical character of the group (i.e., mental vs. physical sickness), a meta-regression was then performed. Heterogeneity remained substantial when 39 studies were pooled by illness type ($Q_{37} = 449.57$, $p < .0001$, $I^2 = 91.77$). There was no discernible variation in effect magnitude according to the kind of clinical sample, according to the meta-regression ($p = .722$, 95% CI [-0.207, 0.298]). In other words, whether the sample was made up of individuals with physical illnesses ($r = 0.573$) or mental illnesses ($r = 0.619$), there was no discernible difference in the magnitude of the association between death anxiety and symptoms of mental illness. To determine if the mental health result was a major modulator of the effect magnitude, other analyses were carried out. The symptom type was classified as belonging to either "anxiety" or "depression" for the 43 research that looked at specific mental health symptoms (like the severity of OCD) rather than overall psychopathology (like the number of diagnoses). This analysis excluded symptoms that did not fall into either group, such as eating disorders or personality disorders. Heterogeneity remained substantial when these 43 trials were categorised by symptom type ($Q_{41} = 533.86$, $p < .0001$, $I^2 = 92.32$). Symptom type was a significant mediator, according to the meta-regression ($p = .032$, 95% CI [0.014, 0.316]). In other words, compared to anxiety ($r = 0.506$), the connection between death anxiety and depression was much less ($r = 0.341$). Symptoms were then categorised according to their diagnostic category in order to investigate whether specific anxiety-related diseases were responsible for this latter significant connection. In particular, the studies were categorised as either trauma-related disorder ($k = 18$), obsessive-compulsive disorder ($k = 20$), somatic symptom-related disorder ($k = 9$), or symptoms of a DSM-5 anxiety disorder ($k = 8$). Heterogeneity remained substantial when these 55 trials were categorised by symptom type ($Q_{54} = 528.68$, $p < .0001$, $I^2 = 89.79$). A meta-regression analysis showed that the association between death anxiety and symptoms was significantly moderated by anxiety type ($p = .002$). In particular, there was a substantially stronger correlation ($r = 0.677$) between death fear and anxiety disorder symptoms than there was for OCD ($r = 0.484$; $p = .018$) and trauma-related symptoms ($r = 0.359$; $p < .001$). However, when compared to illnesses related to somatic symptoms, there was no

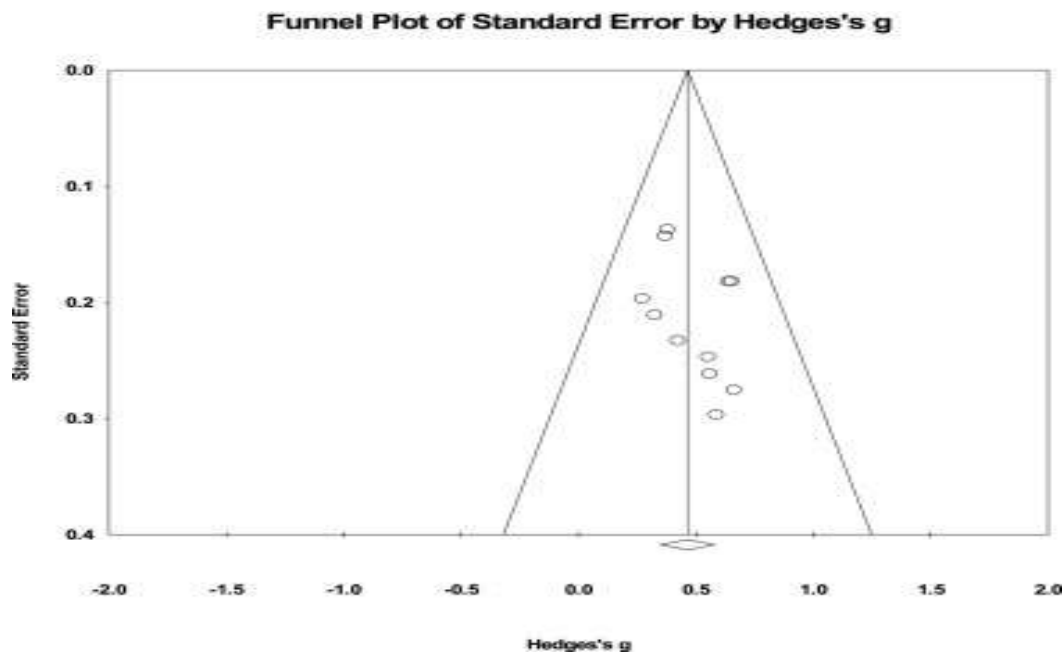
difference in the association between death anxiety and anxiety disorder symptoms ($r = 0.540$, $p = .223$). Additionally, the correlation for OCD was considerably greater than that for trauma symptoms ($p = .047$), but it was not statistically different from that for illnesses linked to somatic symptoms ($p = .416$). For each of the 99 cross-sectional studies, review the authors' assessments on the risk of bias.



The subgroup within the trial was employed as the unit of analysis because the majority of studies had two separate subgroups: one for which an MS effect was anticipated (a clinical group, for example) and another for which no such effect was anticipated (a non-clinical group, for example). Heterogeneity accounted for a moderate amount of variation in these investigations ($Q_{19} = 28.23$, $p = .079$, $I^2 = 32.70$). The average sample size for all experimental investigations was 124.72 participants ($SD = 79.56$; $n_{total} = 1372$), with sample sizes ranging from 46 to 322 participants. The average age of the sample was 27.50 years ($SD = 8.38$ years). On average, women made up 55.24 percent of the samples. Most of the research was carried out in the United States (five studies; 45.5%) or Australia (five studies; 45.5%). A subclinical sample, or one in which participants were selected based on having heightened mental health symptoms (such as high scores on a social anxiety test) but no official diagnosis, was employed in five research (45.5%). A clinical sample was employed in four research (36.4%), and every participant had a mental health diagnosis. A sample of non-clinical people who did not have a recognised mental disorder or heightened symptoms of one was employed in just two research (18.2%). Nine research, or 81.8% of the total, used an anxiety-related measure as the outcome variable. In particular, three research (27.3%) looked at social anxiety-associated behaviours, two looked at OCD-related handwashing (18.2%), and one study looked at outcomes linked to PTSD, specific phobias, general anxiety, panic disorder, and disorders connected to somatic symptoms. The two studies that did not employ an anxiety-related measure both looked at disordered eating behaviours, namely muscular dysmorphic behaviours in males and food restriction in women.

Overall effect

With a medium effect size, Hedge's $g = 0.481$, 95% CI [0.335, 0.627], $p < .0001$, the impact of mortality salience on clinically relevant behaviours was estimated for each of the 11 trials. However, effect sizes were assessed separately between these subgroups because the majority of research looked at the differences between two subgroups and found no significant effect for one group. Subgroups that were clinically relevant to the behaviour of interest (such as the "high social anxiety" group in a study on social avoidance) and those that were not (such as the "low social anxiety" group) were thus compared for their effects. The estimated effect of MS on conduct was small but significant among the nine non-relevant subgroups (Hedge's $g = 0.268$, 95% CI [0.095, 0.441], $p = .002$). In contrast, the effect size was medium-to-large among the 11 pertinent subgroups (Hedge's $g = 0.671$, 95% CI [0.452, 0.890], $p < .0003$).



Clinical implications

When combined, the results of the current meta-analysis demonstrate how important death dread is to psychopathology. Specifically, anxiety-related disorders—particularly those involving physical symptoms and anxiety disorders—seem to be most closely linked to the fear of dying. These results demonstrate the possible advantages of taking death dread into account when conceptualising and treating such disorders. A person who presently fits the criteria for two illnesses is likely to have had two distinct problems earlier in their life, from which they have since recovered. According to meta-analytic data, lifetime disorders are, on average, almost twice as common as current disorders. In order to assure long-term psychological wellness, it is crucial to address transdiagnostic constructs that have been demonstrated to have a causal role in the development of various diseases. Theoretically, death fear might be a major target for treatment in this area given the wide-ranging significance that has been shown for it in a variety of mental diseases and the results of experimental research. Thankfully, there are evidence-based methods for treating death anxiety. A meta-analysis of randomised controlled trials was conducted. It has been demonstrated that cognitive behavioural treatment (CBT) significantly reduces this phobia. According to Menzies et al. (2018), CBT therapies that emphasised exposure therapy to dreaded death-related stimuli—such as cemeteries, death-themed movies, and mental picture of dying—showed the biggest effect sizes when compared to a control condition. The cognitive elements of CBT therapies for death anxiety have been assessed in more recent research. created Overcome Death Anxiety, a self-directed, online cognitive behavioural therapy treatment for death anxiety that incorporates exposure-based and cognitive elements

(e.g., recognising and confronting harmful beliefs about death). 90% of participants showed improved scores in one or more death fear subscales, according to preliminary findings from a small sample of outpatients with mental illness. Given the significant influence of death anxiety on mental illness, the current availability of scalable and internationally accessible online treatments gives some optimism, even though the effectiveness of this program has to be further assessed in an RCT. Other treatment modalities should also be taken into consideration, even though cognitive behavioural therapy (CBT) presently has the strongest evidence for its effectiveness in treating death fear. Specifically, existential therapists have stressed how crucial it is to manage death dread. explains, for instance, a number of cognitive techniques for dealing with the fear of dying, such as addressing the underlying beliefs, refocusing on living each day to the fullest, and incorporating philosophical arguments into therapy (e.g., Epicurean ideas countering the notion that non-existence is unpleasant). To more thoroughly investigate the effectiveness of existential therapy for death anxiety, more RCTs are necessary. Given the core principles of TMT, other possible interventions should be taken into consideration in addition to existential therapy approaches. That is to say, decades of research have demonstrated that enhancing one's sense of self-worth and strengthening one's conviction in one's worldview work together to prevent death fear and give life purpose. In light of this, it is conceivable that therapies that emphasise enhancing one's sense of self-worth and purpose in life could lessen one's fear of dying. Numerous studies have investigated the effect of meaning-based therapies on death fear, but no trials have looked at the effect of self-esteem interventions on this construct. meaning-based treatments, including those derived from Viktor Frankl's research. To find out if these advantages apply to those without life-threatening or fatal conditions, more research is needed. All things considered, the present research supports assertions that treating death anxiety may be crucial for treating mental illnesses. Theoretically, patients who a) score above the clinical threshold for death anxiety and present with a disorder that has been shown to be most strongly associated with death anxiety (such as an anxiety disorder or somatic symptom-related disorder) may benefit most from treatment that targets the fear of death. This is especially true considering that much of the MS research in the current review concentrated on behaviours that are relevant to anxiety-related illnesses (e.g., obsessive washing, body scanning, and social and phobic avoidance). It should be highlighted, therefore, that there are currently insufficient randomised controlled trials for death anxiety therapies in populations with mental health diagnoses. Therefore, it is still unknown if, in comparison to a control situation, the advantages of the treatments mentioned above would be replicated among those pursuing treatment for mental illness. Furthermore, the idea that directly treating death anxiety should result in improvements in more general mental health symptoms has not yet been investigated. There is an urgent need for more RCT research that answers this topic. Therefore, it is still speculative to believe that addressing death anxiety can lessen psychopathology.

Limitations

It is important to acknowledge the limitations of this review and meta-analysis. First, it is impossible to infer causality from the majority of the included research due to their cross-sectional design. Even if these associations were strong, it's still feasible that some of them can be accounted for by a third variable or confounding factor. It should be mentioned, nevertheless, that prior research has shown that even after adjusting for potential confounding factors like stress and neuroticism anxiety, the association between death anxiety and psychopathology is still substantial. Second, there is still a chance that the causal relationship is the opposite of what is being suggested, i.e., that having signs of a mental disease raises the likelihood of death anxiety. Nonetheless, the results of the 11 experimental research included in this review lend credence to the idea that death anxiety is, at least for the symptoms examined experimentally, a contributing factor. Third, although though the MS results in this study might indicate that fear of dying is a major contributing factor to the emergence of mental illnesses, other theories should be investigated

further. An alternate theory, for instance, is that death anxiety only intensifies symptoms that were initially brought on by other structures or mechanisms. Longitudinal studies are necessary to investigate if baseline death anxiety predicts psychopathology later in life, expanding on the experimental designs included in the current review. Such a discovery would lend credence to the idea that this dread is, in fact, a contributing factor to the emergence of mental disorders. Fourth, only 35.4% of the 11 MS studies that were analysed had a sample of people who had been diagnosed with a mental condition. This raises the prospect that the effects currently seen would not apply to clinical samples seeking therapy. This worry should be partially allayed, though, given the clinical nature of the sample did not turn out to be a substantial moderator of MS effects.

Finally, most of the included research looked at death anxiety in connection with depression or anxiety symptoms. There was not enough information to look at eating disorders, personality disorders, or psychotic disorders separately since there were so few research that looked at death anxiety in connection with these conditions. As a result, even while moderation analyses revealed equally substantial connections among the outcome measures, it is unclear if this conclusion will hold true once there are enough research to look at these illnesses separately.

5. Conclusions

According to the latest findings, which are based on data from 25,068 participants, death anxiety has a significant role in a number of mental health issues, especially diseases related to anxiety. Notably, death anxiety may be a contributing factor to these symptoms, as seen by the medium-to-large effect that death reminders had on clinically relevant behaviours in pertinent populations. In line with theoretical expectations, more study is required to determine whether directly treating death fear can reduce clinically significant symptoms and help avert the emergence of subsequent diseases.

REFERENCES:

- Abbas, U. Kanwal, W. Saeed, M.U. Khan, M. Shahzadi, M. Faran Relationship of Muslim religiosity and death anxiety with the mediating effect of optimism and depression among cancer patients in Pakistan
- A.M. Abdel-Khalek 1997 Death, anxiety, and depression OMEGA-Journal of Death and Dying, 35 (2) (1997), pp. 219-229,
- M. Hajrahimian, Z. Taheri-Kharamah Does spirituality predict death anxiety in chronically ill older adults in a religious context?
- American Psychiatric Association 2022 Diagnostic and statistical manual of mental disorders (5th ed., text rev.) (2022).
- A.M. Andrei, R. Webb, V. Enea Health anxiety, death anxiety and corona phobia: Predictors of postpartum depression symptomatology during the COVID-19 pandemic
- P. Barr 2012 , A dyadic analysis of negative emotion personality predisposition effects with psychological distress in neonatal intensive care unit parents
- E. Becker 1973 The denial of death Free Press (1973)

Mavrogiorgou 2023 Death anxiety in obsessive-compulsive disorders OMEGA-Journal of Death and Dying (2023).

B.L. Burke, A. Martens, E.H. Faucher 2010 Two decades of terror management theory: A Meta-analysis of mortality salience research