

Potential Mediators of the Relationship Between Gender and Death Anxiety

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ABSTRACT - Previous research in thanatology (the study of death and dying) has identified a gender difference in death anxiety. However, research focusing on possible variables that may mediate the relationship between gender and death anxiety is lacking. The purpose of this study was to address this literature gap by investigating gender differences in death anxiety and possible variables (i.e., mastery, depression, social desirability) that mediate the relationships between gender and self-reporting of death anxiety in college students. Students ($N = 443$) from a regional Midwest university were surveyed on their feeling of death anxiety, level of mastery, depressive symptoms, and social desirability. Females reported a greater level of death anxiety than males. A linear regression revealed females reported a greater level of death anxiety than males after controlling for mastery, depression, and social desirability. Implications, limitations, and future research possibilities are discussed.

Death anxiety is the level to which a person experiences negative stress in reference to death and dying (Fortner & Neimeyer, 1999). Unique to humans, it describes the apprehension created by awareness of one's own death. To an extent, death anxiety is normal, and it typically is experienced by people at some time in their lives. In fact, some (e.g., Becker, 1973) suggest that *all* humans experience fear when confronted with the inevitability of death and dying. Death anxiety may have a somewhat positive effect in influencing individuals to make healthy choices and avoid risk-taking behaviors in an attempt to avoid death. Yet, extreme and excessive death anxiety can debilitate individuals and limit their personal growth (Niemic & Schulenberg, 2011). Although an increasing number of studies have examined concerns about death (Cicirelli, 2002; Cicirelli, 2009; Ens & Bond, 2007; Fortner & Neimeyer, 1999), many questions remain about factors that influence and explain death anxiety in individuals.

Gender and Death Anxiety

Dattel and Neimeyer (1990) suggest that gender differences in death anxiety are not well-understood in thanatology. Although not a new area of research, gender differences in death anxiety have not been entirely consistent. Whereas some research reports that women have greater death anxiety than men (Dattel & Neimeyer, 1990; Ens & Bond, 2007; Rose & O'Sullivan, 2002; Russac, Gatliff, Reece, & Spottswood, 2007), other

research suggests no such gender differences exist (Fortner & Neimeyer, 1999; Neimeyer, 1986).

Studies that have found a gender difference in death anxiety span the lifecourse. Research using the revised Death Anxiety Scale (Templer, 1970) suggests that adolescent females have higher levels of death anxiety than adolescent males (Ens & Bond, 2007). Some research suggests that college women have greater fear of death in general when compared to college men (Cicirelli, 1998). Rose and O'Sullivan (2002) found a similar gender difference among college students in California. Furthermore, a meta-analysis of cross-cultural college students suggests that college women have a greater death anxiety than college men (Lester, Templer, & Abdel-Khalek, 2007). Adult women ages 18 to 87 years also show higher levels of death anxiety than their male counterparts (Russac et al., 2007). Cicirelli (1999) suggests increased death anxiety among older adult women (60 to 100 years) compared to older adult men. The majority of research that suggests a gender difference in death anxiety has used Templer's Death Anxiety Scale (Templer, 1970).

Potential Mediators of the Relationship Between Gender and Death Anxiety

Social Desirability

It has been suggested that gender differences in death anxiety scores are a result of women's greater tendency to share troubling thoughts (Stillion, 1985). Women's levels of death anxiety may reflect their tendency to express negative emotions and may not be limited to issues that relate to dying (Fortner & Neimeyer, 1999). Perhaps women are more likely to admit that they are struggling with issues. In other words, women may not actually have a greater anxiety regarding dying but a greater willingness to express any anxieties. Men may feel a need to present a socially desirable response of death anxiety scales, whereas women might be more likely to express negative thoughts about death (Dattel & Neimeyer, 1990). Although it was suggested that there might not be gender differences in death anxiety when social desirability was statistically controlled, this was not the case when the hypothesis was tested (Dattel & Neimeyer, 1990). However, more research is needed to determine if social desirability may be partially responsible for the gender differences. In fact, Templer's Death Anxiety Scale has been shown to be correlated with social desirability (Dattel & Neimeyer, 1990).

Depression

Not surprisingly, research suggests a relationship between depressive symptoms and fear of death (Cicirella, 2009; McCoy, Pyszczynski, Solomon, & Greenberg, 2000). Obviously, this may be a reciprocal relationship. Individuals who fear death would likely be depressed as a result, but depressed individuals might come to fear death by ruminating on thoughts of the end of their life. Fortner and Neimeyer (1999) discovered greater death anxiety among those older adults who had a greater history of psychological distress and lesser resilience. Research overwhelmingly suggests that women experience greater levels of depression than men through the life span (Leach, Christensen, Mackinnon, Windsor, & Butterworth, 2008; Sigmon et al., 2005; Sprock & Yoder, 1997). Much like death anxiety, some researchers suggest that this disparity is possibly due to the role social desirability plays in men's unwillingness to disclose their depressive symptoms (Sigmon et al., 2005). In addition, research suggests that multiple factors (e.g.,

division of household labor, personality differences, and economic disparities) may play a role in the difference in depression between genders (Leach et al., 2008). The overwhelming evidence identifying a greater likelihood of women experiencing depression than men suggests that the link between gender and death anxiety could be mediated by women's heightened depression.

Mastery

Mastery is "the extent to which one regards one's life chances as being under one's control in contrast to being fatalistically ruled" (Pearlin & Schooler, 1978). This sense of control may be used as a coping mechanism in negotiating difficult life circumstances and is related to greater psychological functioning (Eshbaugh, 2006; Pearlin & Schooler, 1978). An explanation for gender differences found in death anxiety involves the concept of mastery or, a similar concept, locus of control. Greater external locus of control has been shown to be related to greater death anxiety (Cicirelli, 2002; Hunt, Lester, & Ashton, 1988), whereas greater internal locus of control has been related to a lower level of fear of death (Vargo & Black, 1984). Research specifically examining health locus of control suggests that external health locus of control and death anxiety are positively related among Chinese college students (So-Kum Tang, Wu, & Yan, 2002). Research has suggested that women have both a greater level of death anxiety and a more external locus of control (Benton, Christopher, & Walter, 2007; Cicirelli, 1999; Sadowski, Davis, & Loftus-Vergari, 1979). The research on locus of control and death anxiety has been summarized by the notion that death anxiety is associated with a lack of control of one's fate (Neimeyer, 1988). Perhaps people have lower levels of death anxiety if they believe that they are not simply the victim of a force of nature, and this belief is more common to men than to women (Sadowski et al., 1979).

Death Anxiety Among Young Adults

Older adults are typically chronologically closer to the end of their lives, and it seems that death processes and attitudes would be more relevant to elders than to younger individuals. However, it is also important to study death anxiety among younger adults. For instance, younger people who have a significant fear of death may be less likely to pursue careers in aging related fields (Eshbaugh, Gross, & Satrom, 2010). This reluctance deserves attention because of labor force shortage predicted in the field of gerontology (Bial, 2005). In order address this shortage, we must examine the reasons younger individuals avoid working with our aging population. Some research has suggested that death fear is linked to reluctance to pursue occupations where one has to interact with older persons (Eshbaugh et al., 2010).

Furthermore, death anxiety among professionals who work with older adults may limit one's ability to do a job effectively. For example, nursing home employees with greater death anxiety have more negative attitudes toward elders and are reluctant to discuss dying (Vickio & Cavanaugh, 1985). Research also suggests that death anxiety plays a role in how physicians interact with patients. Greater fear of death among doctors is related to more difficulty revealing terminal diagnoses and more negative attitudes toward dying persons (Cochran, Levy, & Fryer, 1990-91; Kvale, Berg, Groff, & Lange, 1999).

Method

Participants

After IRB approval was obtained, college students ($N = 443$) in several undergraduate courses at a mid-sized Midwestern university were sent an email by their instructor asking them to complete an online survey through SurveyMonkey.com. Classes included were liberal arts core courses and introductory family services courses taken by students from diverse majors. Data for this study were collected over two consecutive semesters.

Fifty-six percent ($n = 249$) participants were female. Participants ranged in age from 18 to 44 years ($M = 20.11$, $SD = 2.71$). Thirty-one percent ($n = 138$) of students were freshman, 26% ($n = 115$) sophomores, 19% ($n = 86$) juniors, and 23% ($n = 102$) seniors. Two students did not indicate their classification. More than 95% ($n = 421$) of participants identified themselves as European-American. In general, these demographics are similar to those of the university population.

Measures

Death Anxiety. Participants completed Templer's Death Anxiety Scale (Templer, 1970). Because it is the most popular measure of death anxiety, we chose to use this scale because we would be able to compare our findings to findings in previous studies. The measure consists of 15 true-false items. Example items are "I am very much afraid to die," and "I fear dying a painful death." Items are scored 0 or 1 such that a high score indicates a higher degree of death anxiety. Possible scores range from 0 to 15. Cronbach's alpha in the present study was .73.

Social Desirability. Social Desirability was assessed using the Crowne-Marlowe Social Desirability Scale (Crowne & Marlowe, 1960). The scale is 33-item measure used to assess a participant's likelihood of acting in accordance with social norms. Items include, "I have almost never felt the urge to tell someone off," "I never resent being asked to return a favor," and "I always practice what I preach." Higher scores indicate a greater desire to report behaviors in accordance with social norms. Test-retest reliability has been reported at .89 (Crowne & Marlowe, 1960). Cronbach's alpha in the present study was .71.

Depression. Depression was assessed using The Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). The CES-D is a 20-item self-report measure designed to assess depressive symptoms for the general population. Each item is a statement describing how the assessment taker has felt over the last week. Participants respond to each question by rating how often in the last week their feelings have corresponded with each item [e.g., Rarely or none of the time (less than one day); Most or all of the time (5-7 days)]. Items include "I felt lonely," "People were unfriendly," and "I had crying spells." Scores can range from 0-60, with greater scores signifying higher rates of depressive symptoms. A score of 16 or greater is considered a high rate of depressive symptoms (Radloff, 1977). Cronbach's alpha has been reported at .90 (Radloff, 1977). Cronbach's alpha in the present study was .84.

Mastery. Mastery was assessed with the commonly-used 7-item Pearlin Mastery scale (Pearlin & Schooler, 1978). Items include "Sometimes I feel I am being pushed around in life," and "I have little control over things that happen to me." Participants rate items on a

scale of 1 (*strongly disagree*) to 4 (*strongly agree*). Possible scores range from 7 to 28. Higher scores indicate greater mastery. Cronbach's alpha was .71.

Purpose and Plan of Analysis

The purpose of the current study was to determine whether or not gender differences in death anxiety are present when controlling variables that are likely to be correlated with both gender and death anxiety (social desirability, depression, and mastery). First, independent sample *t*-tests were conducted by gender for death anxiety, social desirability, depression, and mastery. Next zero-order correlations were conducted to determine the relationships among death anxiety, social desirability, depression, and mastery. Then regression analysis was performed to explore whether or not gender was predictive of death anxiety while controlling for social desirability, depression, and mastery. Special consideration was taken to ensure that multicollinearity was not problematic in this analysis.

Results

Gender Differences

Male and female participants were compared on death anxiety, social desirability, depression, and mastery using independent samples *t*-tests (see Table 1). Females had significantly greater death anxiety than males $t(441) = 9.53, p < .001$. While there was not a statistically significant gender difference on social desirability, $t(441) = 1.78, p = .075$, females showed a tendency toward higher social desirability when compared to men. Women had significantly higher levels of depression than men $t(441) = 1.98, p < .05$, and men had significantly higher levels of mastery than women $t(441) = 2.34, p = .02$.

Table 1
Means and Standard Deviations and Independent Samples T-tests by Gender for Variables

Variable	Male ($n = 194$)	Female ($n = 249$)	<i>t</i>	<i>p</i>
Death Anxiety	5.13 (3.03)	7.89 (2.99)	9.53	.000
Social Desirability	14.89 (7.47)	16.15 (7.30)	1.78	.075
Depression	13.27 (8.02)	14.97 (9.60)	1.98	.049
Mastery	28.22 (4.08)	27.31 (3.98)	2.34	.020

Zero-Order Correlations

Zero-order correlations are displayed on Table 2. Death anxiety was positively correlated with depression, $r(441) = .12, p < .05$, and negatively correlated with mastery, $r(441) = -.15, p < .001$. In other words, participants higher in depression and lower mastery were more likely to have greater levels of death anxiety than participants lower in depression and higher in mastery. Surprisingly, death anxiety and social desirability were not significantly correlated, $r(441) = -.08, p = .09$, although participants with higher scores on social desirability showed a tendency to have less death anxiety. Social desirability was also not significantly related to depression, $r(441) = -.08, p = .09$, or

mastery, $r(441) = .00, p = .93$. Mastery was negatively related to depression, $r(441) = -.23, p < .001$.

Table 2
Correlations for Death Anxiety, Social Desirability, Depression, and Mastery (N = 443)

	Death Anxiety	Social Desirability	Depression
Death Anxiety			
Social Desirability	-.08		
Depression	.12*	-.08	
Mastery	-.15**	.00	-.23**

Note. * $p < .05$ ** $p < .01$

Regression Analysis

Because there was a significant gender difference in death anxiety, a regression was conducted to determine if controlling for social desirability, depression, and mastery would still yield significant results for gender (see Table 3). The regression model predicted 18.6% of the variance in death anxiety and was statistically significant, $F(4, 438) = 25.01, p < .001$. Gender remained a significant predictor of death anxiety in the model when the other variables were included, $t = 9.15, p < .001$. In addition, individuals higher in mastery showed lower levels of death anxiety, $t = -2.19, p = .03$. Social desirability and depression did not significantly predict death anxiety in this model. Variance inflation factors (VIFs) were examined to determine the extent to which multicollinearity was present. Values of VIF exceeding 5 are considered evidence of problematic collinearity, and no values exceeded 1.2 (Montgomery, Peck, & Vining, 2001). Centered interaction terms (gender x social desirability, gender x depression, and gender x mastery) added to the model did not account for a significantly increased amount of variance (not shown).

Table 3
Predictors of Death Anxiety (N = 443)

Variable	Unstandardized B	Standardized B	t	P
Constant	7.26		6.35	.00
Gender	2.66	.40	9.15	.00
Social Desirability	-.01	-.02	-.51	.61
Depression	.02	.06	1.23	.22
Mastery	-.08	-.10	-2.19	.03

Discussion

Our results suggest that women have greater death anxiety than men. This difference was still present when controlling for social desirability, depression, and mastery. Therefore, the gender difference in death anxiety cannot be attributed to any of these extraneous variables. These results, like those of previous research (Dattel & Neimeyer, 1990), posit that gender differences are not easily explained away. Gender differences in death anxiety deserve further study. However, our results differ from those of Dattel and Neimeyer (1990) in several ways. Although we also found that men tended to score

higher than women on social desirability scale, this difference did not reach significance. Furthermore, we did not find that social desirability was significantly related to death anxiety in zero-order correlations or regression analysis.

Our analysis suggests that men show a higher level of mastery and a lower level of death anxiety than women. However, gender and mastery were both significant predictors of death anxiety when entered in the regression model. Although women might have had a higher level of death anxiety simply because of their lower level of mastery, this was not the case in our study. This supports previous research as greater external locus of control has been shown to be related to greater death anxiety (Cicirelli, 2002; Hunt et al., 1988). In fact, external locus of control has been related to death anxiety in a sample of college students (Patton & Freitag, 1977).

Mastery may be an important factor in predicting death anxiety because it implies that an individual has control over his or her life and therefore, his or her death. If one feels that life and death are within their control, they may have less to fear. People with higher levels of mastery may have the unrealistic perspective that they can avoid death by making certain choices. Obviously, death is ultimately unavoidable, but this perspective may help an individual cope with the inevitable nature of death and decrease their death anxiety. In other words, thinking one's life (and death) is in the hands of fate induces anxiety. Perceiving one's self to have control over life (and death) allows one to keep neuroticism about death at bay.

Most participants in this study were young and will not face their own mortality for decades. Yet exploring death anxiety among young persons is integral to the field of thanatology. Although death anxiety might positive influence a young person to make healthy decisions and avoid risky behaviors, death anxiety can be debilitating for a person of any age if experienced at extreme levels. Even moderate levels of death anxiety can impact the decisions of young people. For instance, Eshbaugh et al. (2010) suggest that college students with higher levels of death anxiety may avoid careers in aging because they do not want to be confronted daily with aging and death. Furthermore, it is plausible that young people with higher death anxiety may shy away from older relatives particularly when those relatives are actively dying. This could potentially be damaging to family relationships.

This study has several limitations that must be addressed. First, Templer's Death Anxiety Scale (1970) was used to measure death anxiety. This allowed for comparison to past studies, particularly those that explored gender differences. However, a multi-faceted measure of death anxiety may be useful in future research. Furthermore, none of the potential mediating variables in this model explained the gender difference in death anxiety. However, there are many other factors that vary between men and women which have not been examined as possible mediators.

How we perceive death influences how we live life. Moderate amounts of death anxiety may prompt us to make choices that will delay our own death, but extreme amounts of death anxiety may limit one's ability to live a positive life. Similar to previous studies (e.g., Dattel & Neimeyer, 1990), we found that women experience greater death anxiety than men do. However, it remains to be seen whether these differences are "real" or a result of another variable that differs by gender. Therefore, it is

important to continue to explore variables that may impact death anxiety among individuals of all ages.

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