Evaluation of death anxiety and effecting factors in a Turkish sample

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Abstract
Previous research indicates that people with higher levels of self-actualization have lower death anxiety and that negative emotional states are related to death anxiety. The aim of this study is to investigate the relationship between death anxiety and self-actualization, depression, and trait anxiety. A Turkish sample of 116 undergraduates and adults completed Templer's Death Anxiety Scale, Personal Orientation Inventory, Beck Depression Inventory, and State-Trait Anxiety Inventory's Trait Anxiety Form. Hierarchical regression analysis showed that the only significant predictors of death anxiety were trait anxiety and gender. The correlation between death anxiety and self - actualization was found to be negative and statistically significant (p < .001). Women had significantly higher death anxiety compared to men; whereas death anxiety mean scores did not show significant differences by age group and the belief in afterlife. In conclusion, this study supports the assumptions of the existential school regarding the association between death anxiety and self-actualization.

Keywords: Death anxiety; Self-actualization; Trait anxiety; Existentialism

Introduction

Death anxiety can be defined as the negative emotional reaction provoked by sensing the non-existence state of the self (Tomer & Eliason, 1996). Death evokes fear and anxiety, because it is the end of existence in this world (Heidegger, 1962). Nevertheless, the existentialist suggests that death and life are interdependent: The physicality of death destroys one, and the idea of death saves one. In this context, being mortal compels us to live in an authentic mode and to self-actualize (Garrow & Walker, 2001). According to leading existential theorists, the recognition of death can help one live in a more authentic mode. Death motivates individuals to assume responsibility and respond to

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the opportunities life has to offer (Heidegger, 1962; Tomer, 1992; Yalom, 1980), which, in turn, would lead to higher levels of self-actualization.

Previous research findings support the assumptions of existential theory and indicate that death anxiety is affected by the level of self-actualization (Connelly, 2003; Ebersole & Persi, 1992; Firestone, 1993; Goodman, 1975; Neimeyer, 1985; Pollak, 1978; Tomer & Eliason, 1996; Vargo & Batsel,1984; Widera-Wysoczañska, 1999). There is substantial proof on the inverse relationship between death anxiety and self – actualization. Neimeyer (1985) has found a modest linear relationship between actualization and various aspects of death orientation. Vargo and Batsel (1984) demonstrated that reducing death anxiety via experiential treatment results in higher scores on the Personal Orientation Inventory (POI). Pollak (1978) found a statistically significant relationship between death anxiety and the Time Competence subscale of the POI. Ebersole and Persi (1992) have also found a significant relationship between death anxiety and self – actualization. Neimeyer and Chapman have determined that less actualized adults scored higher on the Templer's Death Anxiety Scale (DAS) and the Collett – Lester Fear of Death Scale; whereas Robinson and Wood have expanded these findings by demonstrating that highly actualized individuals obtained lower scores on overall death concerns (Neimeyer, 1985).

Existential apprehension on the meaning of life and death may have negative emotional effects on the individual. It is reported that variables related to negative affective states such as trait anxiety and depression effects death anxiety (Abdel-Khalek, 1997; Abdel-Khalek, 2005; Abdel-Khalek & Tomás-Sábado, 2005; Hoelter & Hoelter, 1978; Neimeyer, Wittkowski, & Moser, 2004). Therefore, in this study, levels of depression and trait anxiety were measured and their possible effects on death anxiety were examined. In addition, the effect of gender and age on death anxiety, which was demonstrated by previous studies (Cicirelli, 2001; Drolet, 1990; Galt & Hayslip, 1998; Rasmussen & Brems, 1996; Tang, Chiou, Lin, Wang, & Liand, 2011; Thorson & Powell, 1988), was also investigated.

In order to investigate the effect of age on death anxiety, the sample of this study has been divided into two groups, which are late adolescence (ages 18-21) and adulthood (ages 28 – 40). Our late adolescence group included undergraduate students who do not have a steady job and are in need of financial support from their families. The age range of the adulthood group has been assigned by Levinson's model (Levinson, 1986). Death anxiety at different stages of life has been approached in terms of developmental tasks. The general opinion is that death anxiety is repressed and the concept of death is ignored during adolescence. During adulthood, the concept of death starts to evoke anxiety and reaches its peak point at middle age and declines through old age (Cicirelli, 2001).

Although there are numerous international studies investigating the relationship between death anxiety and self-actualization, Turkish studies examining this relationship are not available. The majority of Turkish people practices Islam and comes from a collectivist culture. Muslims believe in afterlife and consider death as a transition instead of the end of existence. Some studies have showed that Eastern systems of religious beliefs with an acceptance of eventual death as well as beliefs in life after death, provide defense to death anxiety (Lundh & Radon, 1998; Westman & Canter, 1985; Wong et al., 1994). Being a predominantly Muslim population, the religious beliefs of Turkish people may be protective against death anxiety. This study gathered data on the level of death anxiety in a Turkish sample, which would provide preliminary findings for future research to compare the level of death anxiety in the Turkish society with Western samples and other Muslim countries.

Considering the findings and theories above, we hypothesized the following:

1. Self-actualization, depression, and trait anxiety would be significant predictors of death anxiety.

2. There will be a negative relationship between death anxiety and self-actualization.

3. There will be a positive relationship between death anxiety and depression and trait anxiety.

4. Women will have higher levels of death anxiety than men.

5. Late adolescents will show lower levels of death anxiety than adults.

6. Participants who believe in afterlife will have lower death anxiety compared to those who do not believe in afterlife.

Method

Participants

In this cross-sectional study, a total of 116 volunteer Turkish undergraduates (n = 83) and adults (n = 33) living in Istanbul, Turkey in April-July, 2007 were included. The undergraduate group was selected with nonprobability sampling and the adult group was selected with snowball sampling. The participants did not receive any financial compensation for participating in the study. Exclusion criteria included having a psychotic disorder. The undergraduates were enrolled in the departments of Psychology and Molecular Biology and Genetics at Golden Horn University in Istanbul, Turkey during the spring semester of 2007. The undergraduate and adult groups' mean ages were 20.91 years (SD = 1.55) and 32.23 years (SD = 3.19), respectively. The whole sample's ages ranged from 18 to 40.

Materials

In the study, a personal information form, which included questions about sociodemographic and death anxiety related characteristics, was developed by the researchers. In order to collect data, the personal information form, Templer's Death Anxiety Scale (DAS), Personal Orientation Inventory (POI), State-Trait Anxiety Scale's trait anxiety subscale (STAI-T), and Beck Depression Inventory (BDI) were administered to the participants.

Templer's death anxiety scale (DAS). The Death Anxiety Scale (DAS) was developed by Templer (1970). It is a 15 – item Likert – type instrument which assesses the individual's general level of death anxiety. Total scores can range from 7 to 105. High scores denote high death anxiety. The original English version of the scale holds acceptable concurrent validity with other measures of death anxiety (Templer, 1970). The Turkish translation of the scale was carried out by three different bilingual teams using the back – translation method. Internal correlation of the Turkish form was 0.72 (Cronbach α), and the test – retest (15 – days interval) reliability coefficient was 0.80 (Ertufan, 2000). The reliability and validity of the scale in the Turkish language was performed by Akça and Köse (2008) who also reported the factor analysis. Similar to the original structure of the scale, 15 items were separated to four factors as; cognitive and sensitive, physical changes, time passed, illness and pain. Points higher than 7 indicate increased death anxiety.

Personal orientation inventory (POI). In 1980, Shostrom developed the Personal Orientation Inventory (POI) as a measure of the self – actualization process. It includes 150 questions and two main scales assessing Time Competence (23 items) and Inner – Directedness (127 items). The POI also includes other subscales measuring Self – Actualizing Values, Existentiality, Feeling Reactivity, Spontaneity, Self Respect, Self Acceptance, Man's Nature as Constructive, Synergy, Acceptance of Aggression and Capacity for Intimate Contact. The English version of the scale has been reported to hold acceptable levels of construct validity. The Turkish translation of the scale was carried out using the back – translation method. The Cronbach's alpha coefficient of the POI was found to be between 0.91 and 0.93. The Turkish form of the scale denoted good construct validity and it was found to be a valid and reliable scale (Kuzgun & Bacanlı, 2005). Akbaş (1989) found the test-retest reliability of the Time Competence subscale to be 0.85 and 0.82 for the Inner-Directedness subscale. In our study, the POI was used as a proxy measure for self-actualization and authenticity.

State-trait anxiety inventory (STAI). Developed by Spielberger, Gorsuch, and Lushene in 1970, the State – Trait Anxiety Inventory (STAI) measures both types of anxiety. The trait anxiety subscale (STAI – T) contains 20 items asking respondents to rate how they feel generally on a 4-point scale basis. The English version has been found to hold adequate construct and concurrent validity. The

trait anxiety items have been reported to hold acceptable test – retest reliability. The Turkish translation of the scale was carried out by experts using the back – translation method. The Turkish form of the trait anxiety scale has acceptable alpha reliability (ranged from .83 to .87) and test – retest reliability coefficients ranged from .71 to .86. The scale also denoted good construct validity (Öner & LeCompte, 1998).

Beck depression inventory (BDI). The Beck Depression Inventory (BDI) was developed by Beck, Ward, Mendelson, Mock, and Erbaugh in 1961. It is a 21 – item instrument designed to provide a quantitative assessment of the intensity of depression. Every item is rated on a 3 – point scale basis. Total scores can range from 0 to 63. The English version has been validated in several populations (Leahy, 1992). Internal correlation of the Turkish form was .80 (Cronbach α) and split – half reliability was .74. The BDI denoted good construct validity (Hisli, 1989).

Procedure

After obtaining permission from the Golden Horn University's Deanship of the Faculty of Science and Letters, the scales were administered anonymously to undergraduate groups in classroom settings during a week of regular university hours. All participants volunteered for the study after the purpose had been briefly explained. The first researcher entered classes at the end of courses and performed group administrations. The snowball sampling method was used in order to collect data from adult participants. The scales were handed out to adults via personal communication. Data was analyzed with the Statistical Package for the Social Sciences 20.0 software.

Results

The descriptive statistics of the variables (frequency and percentage) were introduced below (Table 1). Table 1 summarizes the frequency distribution of demographic and death anxiety related characteristics of the participants.

Table 1
Frequency Distribution of Demographic and Death Anxiety Related Characteristics (n = 116)

	Late adolescent group (n = 83)		Adult group (n = 33)	
	f	*%*	*f*	*%*
Gender				
Female	55	66.3	23	69.7
Male	28	33.7	10	30.3
Level of income				
Low	3	3.6	1	3.0

Moderate	32	38.6	15	45.5
Good	45	54.2	16	48.5
Very good	3	3.6	1	3.0
Threat to life				
Experienced	18	21.7	4	12.1
Not experienced	65	78.3	29	87.9
Witnessing someone's death				
Witnessed	15	18.1	8	24.2
Not witnessed	68	81.9	25	75.8
Death of a relative				
Experienced	63	75.9	26	78.8
Not experienced	20	24.1	7	21.2
Serious health problem				
Present	11	13.3	5	15.2
Not present	72	86.7	28	84.8
Belief in afterlife				
Believes	64	77.1	25	75.8
Do not believe	19	22.9	8	24.2

As seen in Table 1, 66.3% of the participants in the late adolescence/undergraduate group and 69.7% of the participants in the adult group were female. It was found that 54.2% of the participants in the undergraduate group and 48.5% of the participants in the adult group reported to have "good" levels of income. When we examined descriptive statistics pertaining to death anxiety related characteristics, we found that 78.3% of the undergraduate group and 87.9% of the adult group have not experienced a threat to their lives; whereas 81.9% of the undergraduate and 75.8% of the adult group have not witnessed someone's death. It was determined that 75.9% of the undergraduate and 78.8% of the adult group have experienced the death of a relative and that 86.7% of the undergraduate and 84.8% of the adult group did not have a serious health problem. Finally, it was found that 77.1% of the undergraduate group and 75.8% of the adult group believed in afterlife.

Table 2
Mean and Standart Deviation for Scores on the DAS, STAI-T, POI, and BDI According to Gender

	Men (n = 38)		Women (*n* = 78)			
Scale	*M*	*SD*	*M*	*SD*	*t*	*p*
DAS	3.50	1.07	4.26	1.04	3.62	.001*
STAI - T	40.13	8.86	43.06	8.52	1.67	.095
POI	94.10	11.48	92.19	11.17	-0.85	.398
BDI	8.63	6.82	8.01	7.34	-0.45	.656

*p<.01.

Table 2 shows the differences in Templer's Death Anxiety Scale (DAS), State-Trait Anxiety Inventory's Trait Anxiety Form (STAI-T), Personal Orientation Inventory (POI), and Beck Depression Inventory (BDI) mean scores by gender. The gender differences were only significant in DAS mean scores, indicating higher mean scores of death anxiety among women than men (p<.01). Mean trait anxiety, self-actualization, and depression scores of the participants did not show significant differences according to gender.

Table 3
Mean and Standard Deviation for Scores on the DAS, STAI-T, POI, and BDI According to Age Group

	Adolescents (*n* = 83)		Adults (*n* = 33)			
Scale	*M*	*SD*	*M*	*SD*	*t*	*p*
DAS	4.02	1.11	3.99	1.12	0.98	.923
STAI - T	43.05	9.06	39.91	7.49	1.94	.056
POI	92.11	11.73	94.46	10.04	-1.09	.276
BDI	9.06	7.54	6.26	5.80	2.17	.033*

*p<.05.

Table 3 presents the differences in DAS, STAI-T, POI, and BDI mean scores by age group. The age differences were only significant in BDI mean scores, indicating higher mean scores of depression among late adolescents than young adults (p<.05). Mean death anxiety, trait anxiety, and self-actualization scores of the participants did not show significant differences according to age group.

In order to compare mean death anxiety scores of the participants according to their belief in afterlife, an independent samples t test was conducted. It was found that mean death anxiety scores did not show significant differences according to belief in afterlife (t=-.609, p=.544). In other words, mean death anxiety scores of the participants who believe and who do not believe in afterlife were not significantly different.

Table 4

Summary of Intercorrelations, Means, and Standard Deviations for Scores on the DAS, STAI-T, POI, and BDI

Measure	1	2	3	4	5	6	M	SD
1. DAS	-	.43**	-.27**	-.26**	-.19*	.20*	4.015	1.107
2. STAI-T		-	-.42**	-.35**	-.42**	.65**	42.103	8.703
3. POI Total score			-	.97**	.57**	-.33**	92.819	11.259
4. POI - Inner - Directedness				-	.37**	-.26**	77.948	9.923
5. POI - Time Competence					-	-.42**	14.871	2.805
6. BDI	.					-	8.215	7.151

$*p<.05$, $**p<.01$.

Table 4 summarizes the Pearson correlations between the DAS total score, STAI-T total score, POI total score, inner-directedness subscale score (POI), time competence subscale score (POI), and the BDI total score. All measures showed significant correlations with each other. As expected, death anxiety was found to be positively correlated with trait anxiety ($r=.43$, $p<.01$) and depression ($r=.20$, $p<.05$) and negatively correlated with the self-actualization total score ($r=-.27$, $p<.01$), the inner-directedness subscale ($r=-.26$, $p<.01$), and the time competence subscale ($r=-.19$, $p<.05$). Trait anxiety was negatively correlated with the self-actualization total score ($r=-.42$, $p<.01$), the inner-directedness subscale ($r=-.35$, $p<.01$), and the time competence subscale ($r=-.42$, $p<.01$) and positively correlated with depression ($r=.65$, $p<.01$). Depression was found to be negatively correlated with the self-actualization total score ($r=-.33$, $p<.01$), the inner-directedness subscale ($r=-.26$, $p<.01$), and the time competence subscale ($r=-.42$, $p<.01$).

A hierarchical regression analysis was then performed to predict death anxiety from total self-actualization, inner-directness, time competence, depression, and trait anxiety scores. The "Enter" or forced entry method was used since the findings from previous research and the existential theory provide a solid basis for the relationship between death anxiety, self-actualization, trait anxiety, and depression. Age and gender were entered in the regression model within the first block in order to control for their effects on death anxiety. The self-actualization total score, inner-directness, time competence, depression, and trait anxiety were entered into the regression model within the second block using forced entry. The first model, which included gender and age as predictors, explained 10.6% of the variance in death anxiety. When we added the remaining predictor variables, namely, self-actualization total score, inner-directness, time competence, depression, and trait anxiety into the regression model, the explanatory power of the model increased by 16.3%. It was found that the total self-actualization score failed to enter the final

regression model. According to the results, the only significant predictors of death anxiety were trait anxiety (p<.01) and gender (p<.01).The final regression model which included death anxiety as the dependent variable and gender, age, inner-directedness, time competence, depression, and trait anxiety as independent variables accounted for 26.9% of the variance in death anxiety (Table 5).

Table 5
Hierarchical Regression Analysis for Death Anxiety as the Dependent Variable

Variable	B	SE B	β	p
Model 1				
Constant	3.694	.451	.326	.000
Age	-.008	.017	-.041	.650
Gender	.765	.209	.326	.000*
Model 2				
Constant	2.331	1.253		.066
Gender	.569	.200	.242	.005*
Age	.008	.017	.041	.631
POI – Inner-directedness	-.012	.010	-.106	.244
POI – Time competence	-.005	.038	-.013	.892
BDI	-.013	.017	-.085	.454
STAI-T	.053	.015	.414	.001*

$R^2 = .269$, *p<.01

Discussion

The main hypothesis of the current study was that self-actualization, depression, and trait anxiety would be significant predictors of death anxiety. Hierarchical regression analysis, which was conducted to test the main hypothesis of the study, showed that only trait anxiety and gender accounted for a significant portion of the total variance in death anxiety and that self-actualization failed to predict death anxiety at a significant level. However, correlation analysis indicated that there were significant and negative relations between death anxiety and total self-actualization scores and self-actualization subscales. In addition, it was found that death anxiety is positively correlated with trait anxiety and depression. The secondary goal of the study was to investigate the differences in death anxiety by gender, age group, and belief in afterlife. It was confirmed that female participants had significantly higher death anxiety mean scores compared to males. However, as opposed to our hypotheses, death anxiety mean scores of undergraduate and adult participants were not significantly different and participants who do not believe in afterlife did not have higher death anxiety.

The hierarchical regression analysis which included death anxiety as the criterion variable and gender, age, inner-directedness, time competence, depression, and trait anxiety as independent

variables accounted for 26.9% of the variance in death anxiety. In this context, our results pertaining to the relationship between death anxiety and self-actualization seem to support the existential theory and empirical findings of Ebersole and Persi (1992), Neimeyer (1985), Pollak (1978), and Vargo and Batsel (1984); which indicate that death anxiety is dependent on the level of self-actualization. The self-actualization total score failed to enter the regression model; however, the subscales of self-actualization, namely, time competence and inner-directedness contributed to accounting for the variance in death anxiety even though they were not significant predictors. These findings can be explained by the imprecision of the Personal Orientation Inventory as a measure for self-actualization. A more brief, valid, reliable, and culturally appropriate measure of self-actualization or authentic living should be developed in order to evaluate the level of self-actualization in the Turkish population. Nevertheless, we were able to obtain support for the existential theory on death and self-actualization in a Turkish and Muslim sample and replicate the results of Western studies.

According to Abdel-Khalek (2005), death anxiety and trait or general anxiety are two similar but separate constructs; therefore there is a linear relationship between them. In our study, trait anxiety was one of the significant predictors of death anxiety. Our findings are consistent with the results of Abdel-Khalek (1997), Abdel-Khalek (2005), Abdel-Khalek and Tomás-Sábado (2005), and Hoelter and Hoelter (1978). In addition, we found a significant and positive relationship between death anxiety and depression. Lonetto and Templer (1986) also reported statistically significant and positive correlations between death anxiety and depression. Being aware of death and the path leading to the acceptation of finiteness may result in a depressed mood.

Our finding regarding the difference in death anxiety mean scores by gender is in parallel with previous research. We found that women have significantly higher death anxiety levels than men. In addition, gender was found to be a significant predictor of death anxiety in hierarchical regression. This finding repeated the results of Cicirelli (2001) and Thorson and Powell (1988). In addition, women had higher general anxiety scores. Abdel – Khalek (2005) has explained these differences on the basis of traditional gender roles. It is socially acceptable for women to express their emotions while the male gender role restricts such expressions.

In our study, no significant differences in death anxiety mean scores were observed according to age group. Previous studies both support (Drolet, 1990) and controvert (Cicirelli, 2001; Galt & Hayslip, 1998; Rasmussen & Brems, 1996; Thorson & Powell, 1988; Yalom, 1980) our results. In parallel with our findings, Neimeyer, Wittkowski, and Moser (2004) reported that age is actually not a direct predictor of death anxiety. Additionally, our results can be explained by the general opinion

that death anxiety is mostly unconscious during adolescence. Also, during different developmental stages, different aspects of death anxiety become apparent.

When we examined death anxiety in accordance to belief in afterlife, we failed to obtain support for our hypothesis regarding that participants who believe in afterlife would have lower death anxiety scores. This result is inconsistent with previous findings which demonstrated that religious beliefs and the Islamic notion of afterlife help mastery over death fears (Roshdieh, templer, Cannon, & Canfield, 1998; Suhail & Akram, 2002). Future studies are needed in order to investigate the relationship between death anxiety and religiousness in larger Turkish Muslim samples by using valid and reliable measures of religiosity.

Specific limitations have to be acknowledged in the current study. One of these limitations involves the instruments used in our study. As mentioned earlier, a more precise measure for self-actualization should be used in future studies which aim to examine the relationship between death anxiety and self-actualization. Our sample size was small and included participants from a specific part of the Istanbul province in Turkey. Therefore, our results cannot be generalized to the Turkish population. Finally, it would be beneficial to include people from different age groups in order to compare the level of death anxiety during different stages of the lifespan.

In conclusion, our results support the existential theory and previous research on the relationship between death anxiety and self-actualization. Our study is expected to contribute to the relevant literature on death anxiety as it provides preliminary findings obtained from a Turkish sample.

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