

Predicting death anxiety based on life expectancy, retirement anxiety, attachment to God, and self compassion

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ABSTRACT

This study aimed to predict death anxiety based on life expectancy, retirement anxiety, attachment to God, and self-compassion. The research method is descriptive and correlational. The statistical population of the present study included all the retirees of the General Department of Education of Gilan province. In this research, 400 retired people from education and training in Gilan province participated voluntarily. The tools were death anxiety scale (Templer, 1970), life expectancy questionnaire (Schneider, 1991), retirement anxiety scale (Fletcher and Hansson, 1991), attachment to God inventory (Beck and McDonald, 2004), and self-compassion scale (Neff, 2003). Data was analyzed using Pearson's correlation test and multiple linear regression in SPSS 26 software. Statistical analysis showed there was a significant relationship between life expectancy and death anxiety ($r=0.798$), retirement anxiety and death anxiety ($r=0.856$), attachment to God and death anxiety ($r=0.509$), and self-compassion and death anxiety ($r=0.408$) at a significance level of ($\text{sig}=0.000$). It was also found that life expectancy with an impact factor of -0.290 , attachment to God with an impact factor of -0.538 , and self-compassion with an impact factor of -0.479 have a negative impact and retirement anxiety with an impact factor of 0.572 has a positive impact on death anxiety. Retirement anxiety increases death anxiety and life expectancy, attachment to God and self-compassion decrease death anxiety among retirees.

Keywords: Death anxiety, Life expectancy, Retirement anxiety, Attachment to God, Self-compassion.

Introduction

Birth and death are two inevitable realities that all humans share. However, many people prefer not to think about reaching the end of their journey on the earth. Therefore, fear is the most common reaction to the thought of one's death or the death of a loved one. The conflict between the desire to preserve oneself and the awareness of the inevitability of death can lead to feelings of anxiety and panic when thinking about one's mortality [1]. Death anxiety is a person's intense fear of death and the anxiety and emotions they experience when thinking about death or post-death events. This is a common phenomenon and a natural and normal experience [2]. Moderate death anxiety is necessary to encourage participation in positive activities and evoke meaning in one's life. However, abnormal levels of death anxiety may lead to maladjustment, anxiety, and other psychological disorders, creating avoidance, and stopping communication about end-of-life care and medical decision-making [3]. Its negative effects have been revealed in various areas of people's

lives, such as pessimism, hopelessness, poor understanding of social support, and insufficient understanding of life [4]. Such stressful conditions make the person unable to process properly and experience intense psychological suffering [5].

Death anxiety is the primary universal anxiety in the life of all humanity and the primary source of psychopathology [6]. Death anxiety is also conceptualized as a concern that emerges as a result of the awareness of death. According to this view, observing another person's death process, and remembering and thinking about death may trigger one's death anxiety [7].

For Li *et al.* (2018), death anxiety is not a sudden emotion, but a continuous state throughout life, and the degree of death anxiety varies from person to person [8]. A low degree of anxiety does not affect people's lives, but when it becomes excessive, it can harm physical and mental health (such as depression, schizophrenia, eating disorders, and obsessive-compulsive disorder, etc.) [1].

Based on research, life expectancy is one of the factors that affect death anxiety [9, 10, 11]. Life expectancy is the average number of outstanding years of life at a particular age of a person, which

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shows the common patterns of mortality for different age groups. Thus, a longer life expectancy is due to its intrinsic value and also for important achievements in life. Also, health and longevity are associated with higher productivity, which is a necessary driver for sustainable economic growth [12]. The term life expectancy indicates how long a group of people can expect to experience at any age the mortality rate for that particular age [13].

If mortality increases in a population, life expectancy decreases. Conversely, if mortality decreases, life expectancy increases. This measure is age-standardized and therefore commonly used for international comparisons of population health. Most countries experienced significant gains in life expectancy in the second half of the 20th century [14]. As life expectancy progression pathways became more diverse, the COVID-19 pandemic created a global mortality crisis that posed additional challenges to population health [15]. Understanding the factors that determine the life expectancy of a nation is a complex issue. Numerous lifestyles and nutritional, environmental, genetic, and socioeconomic factors can affect the health and longevity of people [16]. Health is also related to life expectancy. Improper sanitation causes the transmission of many diseases such as cholera, diarrhea, hepatitis A, typhoid, etc., and reduces life expectancy [17]. Islam *et al.* (2018) found that economic freedom [18], level of corruption, carbon dioxide emissions, and success in achieving the Millennium Development Goals are highly related to higher life expectancy. Past empirical studies identified other determinants of life expectancy such as lifestyle and occupation, nutrition and food availability, government spending on social protection, level of education of the population [19], and the availability of health care and professionals services [12]. On the other hand, retirement anxiety is another variable affecting death anxiety [20, 21, 22, 23, 24]. Retirement is considered a turning point in adulthood that marks the transition to the third age [25]. While most retirees adapt to this transition relatively easily, some experience problems that manifest as decreased well-being and increased depressive symptoms [26]. Accordingly, for some, retirement can be an anxiety-provoking transition [22].

For some, leaving their job symbolizes the beginning of the end and is associated with death anxiety. Since knowledge of human mortality leads to high levels of distress, individuals employ several defense mechanisms to dispel this difficult knowledge. One of the main mechanisms that may be used by people to cope with the fear of death is adherence to cultural norms and values, based on which they structure their sense of belonging and derive meaning [27]. Occupation can be seen as a resource, and hence, for some, the transition to retirement can be seen as a weakening of one's sense of coherence and belonging, leading to greater salience of death and increased depressive symptoms. Accordingly, the transition to retirement, which may lead to significant changes in job-related interpersonal relationships, can also increase death-related anxieties as retirement approaches [22].

Approaching death can be associated with feelings of fear and anxiety. Aging and other social indicators of the passage of life,

such as retirement, eventually force individuals to address their mortality. So it is not surprising that events like this can cause discomfort, sadness, and feelings of fear and distress [23]. Retirement is a life-changing event from a personal perspective because it indicates the involuntary end of the job and serves as a reminder of aging, loss of health, and ultimately death [28]. Recent research supports the frequent association of retirement with negative thoughts, worrying feelings, and anxiety about the future in various areas of life [23].

Moreover, many researchers, including [20, 29, 30, 31] have stated that attachment to God can impact death anxiety. In the past two decades, researchers have systematically applied insights from attachment theory to the study of religion. The idea that key aspects of religious experiences and behaviors can be understood through attachment theory was proposed by Li Kirkpatrick (1994, 2005). In Kirkpatrick's formulation, God can be thought of as an attachment figure because two key functions of such a figure apply to God: God as a haven to whom believers turn in times of distress, and a safe base through which believers explore the world around them. In attachment theory, parents are powerful and kind figures who protect them from dangers from the child's point of view. In the framework of the worldview of faith, such an assumption of parents can be extended to God as well, and God is imagined as a fatherly and powerful figure in the mind, which is also emphasized in psychoanalytic theories. This view is consistent with Erikson's analysis that basic trust is a necessary prerequisite for faith and future beliefs in adulthood [30]. Regarding attachment to God, Kirkpatrick and Shaver (1992) mapped attachment into three styles. First, people with a secure attachment to God see God as caring and responsive. Second, people with an avoidant attachment to God perceive God as uncaring and rejecting. Third, those with an anxious/ambivalent attachment to God see God as inconsistent in his care and responsiveness to His people [32]. However, this research emphasizes religious beliefs and practices as resources that help people cope with life's problems. It praises the principles of Islam, patience, prayer, trust, turning to God for advice, etc. It is believed that such actions give people a strong spirit to deal with difficult events. The Holy Quran clearly emphasizes that the problems in the world seek to test people and ask them to be patient in the face of problems [30]. Self-compassion is also another factor affecting death anxiety [33, 34, 35, 36, 37]. Self-compassion is a way to communicate with oneself and with characteristics such as sincerity, kindness, and belief in self-acceptance [38]. Self-compassion is an important theoretical and practical construct of mindfulness-based interventions. Self-compassion is a sense of compassion and kindness towards oneself in the face of failure or problems [39]. From Neff's point of view, self-compassion has three parts: self-kindness vs. self-judgment, human sharing vs. isolation, and mindfulness vs. over-identification. Self-compassion requires a balanced approach to negative experiences, such that feelings and negative thoughts are neither suppressed nor exaggerated [35]. Many studies have shown that self-compassion is a strong correlate of psychological health in various emotional domains,

cognitive patterns, and social relationships and can promote well-being and alleviate suffering [37]. Thus, the present research aims to predict death anxiety based on life expectancy, retirement anxiety, attachment to God, and self-compassion. The main research question is whether life expectancy, retirement anxiety, attachment to God, and self-compassion are predictors of death anxiety.

Materials and Methods

The current research is correlational in terms of method and applied in terms of purpose. In this research, data collection was done using a standard questionnaire. This questionnaire collects demographic information and information related to research variables. The content validity of the questionnaire was examined using several professors' and experts' opinions, and the reliability of the questionnaire was examined using Cronbach's alpha test. Since Cronbach's alpha coefficients for all variables were greater than 0.7, the reliability of the questionnaire was confirmed. The statistical population of the research includes all retirees of the General Department of Education of Gilan province. The research sample also includes 400 retirees who were selected based on convenient sampling, as available. Pearson's correlation, multiple linear regression tests, and SPSS software were used for the inferential data analysis and testing of the hypotheses.

Death Anxiety Scale (Templer, 1970)

This tool was created by Templer in 1970. It includes 15 items and measures the attitude of subjects about death. This self-administered questionnaire scale has a two-choice response range (yes-no). Based on the right or wrong answer, it is possible to give it a score of one (if the person's answer indicates the presence of death anxiety) or zero (if the person's answer indicates the absence of death anxiety). For example, in the question, are you worried about death? A no answer indicates the absence of anxiety in the person and a score of zero, and a yes answer indicates the presence of death anxiety in the person and a score of one. The score of the questionnaire ranges from 0 (absence of death anxiety) to 15 (very high death anxiety). Templer's death anxiety scale is a standard questionnaire, used in various worldwide researches to measure death anxiety. The studies conducted on the validity and reliability of the death anxiety scale show that this scale has acceptable validity. According to the main culture, the retest reliability coefficient of the concurrent validity scale based on the correlation with the anxiety scale is 83%, 27% with the overt anxiety scale, and 40% with the depression scale. Templer (1970) obtained a scale retest coefficient of 83%. In the current research, the reliability of the tool was obtained using Cronbach's alpha test as 0.81.

Life expectancy questionnaire (Schneider, 1991)

Schneider (1991) created the life expectancy questionnaire to measure life expectancy. This tool has 12 items on a 5-point Likert scale, 4 of which measure operative thinking, 4 of which measure strategic thinking, and 4 are deviant expressions. This scale has two subscales including agent and strategy. Also, questions 3, 7, and 11 are scored in reverse. Subscale scores are summed to obtain total scores. Many researches support the reliability and validity of this scale, and the internal consistency of the entire scale has been reported between 0.74 and 0.84. In this research, the reliability of the tool was reported as 0.87 based on Cronbach's alpha test.

Retirement Anxiety Scale (Fletcher and Hansson, 1991)

Retirement anxiety was assessed by the Fletcher and Hansson (1991) scale, in which participants had to answer on a scale from 1 ("strongly disagree") to 5 ("strongly agree"). Twenty-three items assessed retirement-related feelings (e.g., "I am afraid that I will feel lonely after retirement"). A mean score was calculated, and higher scores indicated higher levels of retirement anxiety. The reliability of the research using Cronbach's alpha test in the original version is reported as 0.88. In this research, Cronbach's alpha was 0.84.

Attachment to God Inventory (Beck and McDonald, 2004)

This inventory was invented by Beck and MacDonald (2004) to evaluate people's attachment style towards God. It contains 28 items, each of which provides a short description of how a person's attachment to God is. The subject determines the degree of agreement of each sentence with his states and experiences concerning God on a five-point Likert scale from completely disagree to agree. The result of the test consists of two scores, the first score is the testee's avoidance index about attachment to God and the second score is the index of his anxiety in this relationship. Cronbach's alpha reported by Beck *et al.* for the avoidance subscale is 0.84 and the anxiety subscale is 0.80. If a person's score is low in both dimensions, it is a sign of secure attachment, and a high score on the avoidant scale and a low score on the anxiety scale is a sign of avoidant attachment. The opposite of this state indicates anxious attachment. Finally, a high score on both scales indicates the most insecure type of attachment.

Self-Compassion Scale (Neff, 2003)

This scale is a 26-item self-report tool that was created by Neff (2003) to measure self-compassion. The questions included in it are placed in six subscales of self-kindness, self-judgment, common human emotions, isolation, mindfulness, and magnification. It measures the quality of a person's relationship with his experiences. For example how kind a person is towards himself, how much he sees his experiences as a part of other people's experiences, and how much he does not magnify his experiences. Therefore, this scale determines the perspective of detention on issues and the quality of awareness. It is scored on a

five-point Likert scale, from rarely (score 1) to almost always (score 5). Neff (2003) has reported high reliability and validity for the mentioned scale. Its overall reliability was obtained as 0.92 through Cronbach's alpha method. Each of the subscales also had good internal consistency. In the present research, the reliability of the tool was obtained as 0.89 using Cronbach's alpha test.

Method

The presented model was developed by the researcher based on the literature study and the background related to the research topic. After specifying the sample size and sampling, the subjects were checked in terms of inclusion criteria such as informed consent to participate in the research and absence of chronic psycho-personality disorders. Then demographic questionnaires and other research questionnaires were provided to each participant. Ethical considerations including, observing confidentiality, obtaining informed consent from the volunteers, explaining the research objectives, considering the right of freedom of the participants to not complete the research questionnaires, and observing the code for all subjects and its inclusion on their questionnaires were observed at all implementation stages. The data obtained from the research implementation were analyzed using the mentioned tests and SPSS 26 software.

Results and Discussion

This research applied Pearson's significance test and regression coefficient to predict death anxiety based on life expectancy, retirement anxiety, attachment to God, and self-compassion. The Pearson's correlation test results indicate there is a significant relationship between life expectancy and death anxiety ($r=0.798$), retirement anxiety and death anxiety ($r=0.856$), attachment to God and death anxiety ($r=0.509$), and self-compassion and death anxiety ($r=0.408$) at a significance level of ($sig=0.000$). Accordingly, the type of correlation between life expectancy, attachment to God, and self-compassion with death anxiety is negative (inverse) and the type of correlation between retirement anxiety and death anxiety is positive (direct). Also, since the calculated significance level is less than the alpha of the research (0.01), there is a significant relationship between the mentioned variables. Thus, according to these results, there is a relationship between life expectancy, retirement anxiety, attachment to God, and self-compassion and death anxiety.

Table 1. Pearson's correlation coefficient test to measure the relationship between research variables

Variable	No	Pearson's correlation coefficient	Error level
Life expectancy - death anxiety	400	**0.798	0.000
Retirement anxiety - death anxiety	400	**0.856	0.000

Attachment to God - death anxiety	400	**0.509	0.000
Self-compassion - death anxiety	400	**0.408	0.000

** The correlation is significant at the 0.01 level

Then, the regression test was used to measure the effect between the variables. The table below shows the results of measuring the impact of the variables of life expectancy, retirement anxiety, attachment to God, and self-compassion on death anxiety with a regression test.

Table 2. Results of correlation coefficient and determination coefficient in regression test

Model	Correlation	Coefficient of determination	Adjusted coefficient of determination	Standard error of estimate
1	0.894	0.799	0.797	2.098

Predictors: life expectancy, retirement anxiety, attachment to God and self-compassion

The above table shows the results of the determining power of the regression model. Since the correlation coefficient is 0.894 and the determination coefficient is 0.799, the regression model has a suitable determining power.

Table 3. Results of ANOVA analysis for research variables

Model	Sum of squares	Degrees of freedom	Mean squared	F statistic	Test error
Regression	540.6928	4	1732.135	393.629	0.000
Residue	1738.170	395	4.400		
Total	8666.710	399			

Dependent variable: retirement anxiety
Independent variable: life expectancy, retirement anxiety, attachment to God, and self-compassion

In the ANOVA table, the regression sum of squares is more than the residual sum of squares, and the test error level is also less than 0.01, so the significance of the regression results is confirmed.

Table 4. Regression test results for research variables

Model	Non-standard coefficients		Standard coefficients	T statistic	Test error
	B	Beta coefficient	Beta coefficient		
(Constant)	38.401	9.178		4.184	0.000
Life expectancy	-0.425	0.078	-0.290	-5.432	0.000
Retirement anxiety	0.345	0.024	0.572	14.487	0.000
attachment to God	-0.292	0.053	-0.538	-5.491	0.000
Self-compassion	-0.258	0.050	-0.479	-5.211	0.000

Dependent variable: death anxiety

According to the results listed in the above tables, which show the output of the regression test, life expectancy with an impact factor of -0.290, attachment to God with an impact factor of -0.538, and self-compassion with an impact factor of 479 have a

negative effect and retirement anxiety with an effect coefficient of 0.572 has a positive effect on death anxiety.

All humans experience fear and excitement due to the inevitability of death. Since death has never been experienced and no one has touched it clearly, everyone has some kind of anxiety about it, but everyone experiences different degrees of death anxiety depending on certain factors. Awareness of one's mortality leads to a more or less objective fear of death, which evokes death anxiety and what happens after it consciously or unconsciously. Death anxiety begins with a heightened awareness of the salience of death through reminders of one's mortality. Death reminders overlap and are grouped into three distinct groups, stressful environments such as war or experiencing unpredictable circumstances, diagnosis of a life-threatening illness such as coronavirus or cancer, and experiencing a life-threatening accident and death-related experiences. Nevertheless, death anxiety is normal, and life is endangered in its absence. It is only considered an emotional disturbance when it goes beyond its normal limits and makes a person feel helpless. People suffering from death anxiety use various strategies to prevent the activation of death anxiety. In this regard, the current research predicts death anxiety based on life expectancy, retirement anxiety, attachment to God, and self-compassion. The results of the research showed that life expectancy has a negative and opposite effect on death anxiety with an impact factor of -0.290. Thus, life expectancy has an inverse relationship with death anxiety in several ways. First, it makes people resistant to psychological pressures and creates adaptive defense mechanisms to face stressors. It also reduces the repetition of obsessions related to death and instills the perishability of thoughts of death into people's minds reducing the stress resulting from thoughts. Life expectancy also increases people's adaptability to difficult situations and creates expectations of a favorable outcome in the future. This optimism reduces stress and anxiety about death.

Conclusion

Based on the research results, retirement anxiety also has a positive and direct effect on death anxiety with an impact factor of 0.572. In this context, it should be noted that important transitions in life can be understood as milestones of growth. For example, the transition to university can represent independence and adulthood, while the transition to retirement can be seen as a sign of the onset of old age. Not only is this a symbolic transition, but it may involve breaking away from previous roles, routines, and commitments. Thus, it can undermine past arrangements by which individuals felt a sense of meaning and identity in society. In other words, retirement anxiety can indicate that the anxious person attributes negative meanings to the transition period and sees retirement as an "end". This transition may weaken defense mechanisms aimed at warding off death-related thoughts and fears. First of all, the disorder caused by retirement weakens and disrupts the sense of cohesion and social participation and the sense of credibility of retirees.

Second, being left out of work may also threaten one's self-esteem, especially when one loses a sense of self-worth from performing a work role. Third, older employees may worry that they will not be able to maintain previous social relationships with their co-workers and are excluded from an important source of social participation and support. Therefore, retirement anxiety may reduce the ability to use defense mechanisms against death anxiety and ultimately increase death anxiety.

Attachment to God is another factor that affects death anxiety with an impact factor of -0.538. Attachment to God minimizes death anxiety and acts as a vital agent against the feeling of existential despair. In this way, with increasing belief in God and internal acceptance of religion, the level of anxiety decreases. When people feel that God forgives them, their anxiety about death decreases and they achieve peace.

It was also found that self-compassion has a significant effect on death anxiety with an impact factor of -0.479. Self-compassionate people are more accepting and kind towards themselves and are less likely to criticize and judge themselves harshly. As a result, it neutralizes the negative thoughts related to the fear of dying and being punished (avoidant attachment to God) and anxieties caused by being helpless and left alone (anxious attachment to God), which in turn decreases death anxiety levels. Self-compassion can act as a re-motivating force for a person. It increases social connection and decreases self-criticism, rumination, suppression, anxiety, and mental pressure. It also leads to a psychological balance among people. Therefore, flexibility in thoughts and self-kindness make people make realistic judgments about themselves, analyze their functional inadequacies, and make appropriate decisions to fix them. Another advantage is that paying attention to human commonalities creates a feeling of shared destiny with others and prevents harsh and extreme judgments towards oneself that disrupt proper performance. A positive view of the future is one of the most important benefits of self-compassion and it is effective in increasing optimism and life expectancy in people regarding their abilities. Since this type of approach reduces self-judgment and increases the perception of competence, it will further reduce death anxiety among people by increasing their sense of worth and reducing their worries about rejection

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