

# Investigating the role of perception of aging and associated factors in death anxiety among the elderly

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**Background and objectives:** The world's growing elderly population highlights the necessity for further attention to the psychological problems of the elderly, such as death anxiety. Analysis of the elderly's perception of aging and associated factors can contribute to prediction of their future physical and mental health. The purpose of this study was to determine the relationship of perception of aging, and a group of demographic factors, with death anxiety in the elderly living in Gonabad, Iran.

**Subjects and methods:** This analytical descriptive study was conducted on 330 elderly residents of Gonabad, who were selected by stratified random sampling. Research tools were a standard demographic questionnaire, Barker's Brief Aging Perceptions Questionnaire, and Collett-Lester Fear of Death Scale. Data were collected by interview of respondents at their home. Data analysis was carried out in SPSS 16 using descriptive statistics, analysis of variance, Pearson's test, independent *t*-test, and linear regression.

**Results:** Respondents had a mean age of  $73.97 \pm 7.68$  years, 42.4% of respondents were men and 57.6% were women. The total Barker's Brief Aging Perceptions Questionnaire score was  $63.18 \pm 8.75$ , with the highest score ( $17.10 \pm 4.70$ ) associated with negative consequences and control. The total Collett-Lester Fear of Death Scale score was  $128 \pm 14.80$ , with the highest score ( $35.13 \pm 4.06$ ) pertaining to the subscale fear of other people's death. Regression results indicated that the death anxiety score was predictable according to the age and all dimensions of perception of aging, except for the consequences and negative control dimension.

**Conclusion:** Age and the perception of aging are good predictors of death anxiety. The authors recommend further research on the determinants of death anxiety in the elderly and the development of a comprehensive care plan to reduce this anxiety among Iranian elderly.

**Keywords:** perception of aging, death anxiety, elderly

## Introduction

A steady rise in life expectancy and a decline in birth rate have led to gradual growth of the proportion of the elderly among the world's total population. The traces of this demographic trend can also be seen in developing countries such as Iran, where the latest census (2011) shows a rise in the share of elderly population from 6.7% to 8.2% over a 5-year period. Population and demographic analyses anticipate a surge in the Iranian elderly population in the next 30 years and predict an elderly population ratio of 21.7% by 2021.<sup>1</sup>

One of the important domains of the elderly health is its psychological dimension, which requires special attention and prevention of disorders such as anxiety. For many

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reasons, older adults are vulnerable to mental illness, and about 15%–25% of them have serious psychological problems.<sup>2</sup>

Anxiety is one of the most common mental problems of old age because people face a variety of feelings of deficiencies and disabilities at this stage of life. Studies show that older adults are more exposed to anxiety due to reduced self-confidence, reduced activity and movement, loss of friends, reduced financial and physical independence, and chronic illnesses. Their most common anxiety is death anxiety.<sup>3</sup>

Death is a biological and psychological fact, but thinking of death is dreadful and most people prefer to avoid such thoughts.<sup>4</sup> Everyone is somewhat anxious about death, as it is a unique phenomenon that they will certainly experience; but different persons may feel different degrees of death anxiety.<sup>5</sup> Death anxiety has been defined as an unusually intensive fear of death, accompanied by feelings of apprehension or anxiety when the person thinks about the process of dying or what happens after death.<sup>6</sup>

Death anxiety is a natural and normal experience, and having a small degree of death anxiety is necessary throughout life to push us to engage in positive activities, but an abnormally high death anxiety may lead to maladaptation. Such anxiety intensifies the stressful conditions and causes a feeling of emptiness and frustration about life.<sup>5</sup> Research has shown that death anxiety is a common phenomenon. For example, in a study by Agras et al, 16% of people had death anxiety and 3% had comorbid anxiety, and death anxiety was found to be stronger in women than in men.<sup>7</sup>

In a study by Godishala and Swath, 47% of elderly in and out of nursing homes had mild death anxiety, and 52% had moderate death anxiety.<sup>8</sup> In a study by Depoula et al on the relationship of death anxiety with gender, age, and religiosity, it was found that women, older people, and less religious people have higher death anxiety. These groups also showed higher anxiety about different dimensions of death, such as shortness of life, complete isolation due to death, fear of inexistence, and disintegration of the body after death.<sup>9</sup>

Another important factor that affects the mental health of the elderly is the perception of aging,<sup>10</sup> which refers to each person's perception of the aging process within a sociocultural context.<sup>11</sup> Understanding the experience and perception of aging is essential for understanding the health and behavioral implications of aging and a subjective sense of well-being and individual identity in middle-aged and elderly people. The perception of aging can serve as a measure to evaluate the person's satisfaction with aging and reflects the individual's adaptation to the changes associated with aging.<sup>12</sup>

It is commonly believed that any older person who is satisfied with his aging and has a positive attitude toward this stage of life is likely to have a better psychological condition than a person who has a negative attitude toward this issue.<sup>13</sup> Understanding the concept and determinants of the perception of aging, as a good predictor of health condition, can contribute to improving the elderly's satisfaction with aging and their adaptation to age-related changes.<sup>14</sup>

Many researchers believe that familiarity with an elderly's perception of aging allows nurses and health care workers to better anticipate the care necessary for his health and well-being.<sup>5</sup>

In view of the importance of perception of aging and death anxiety and their likely association with demographic factors, this study aimed to determine the relationship of perception of aging and death anxiety with these factors among the elderly of Gonabad, Iran.

## Subjects and methods

This analytical descriptive study was conducted on 330 elderly people supported by Gonabad's community health centers from February to March 2017. Prior to the research, the necessary approval was obtained from the ethics committee of Gonabad University of Medical Sciences (IR.GMU.REC.1395.103).

Perceptions of aging and death anxiety among this group of the elderly were evaluated with the brief version of Barker's Aging Perceptions Questionnaire (B-APQ) and Collett-Lester Fear of Death Scale (CL-FODS), respectively. The inclusion criterion was age of  $\geq 60$  years, and the exclusion criteria were a recorded history of drug abuse, consumption of psychiatric drugs, existing diagnosis of terminal illness, and any cognitive impairment that would result in failure to understand questions and answers.

Subjects were randomly selected from men and women over 60 years of age who were supported by Gonabad's community health centers, and sampling was continued until reaching the desired sample size for every stratum. Questionnaires were filled by two trained researchers. In accordance with the ethical requirements of research, participants were briefed about the subject of questionnaires and were told that they could stop the interview at any point for any reason such as stress and anxiety. Verbal consent was obtained from the elderly. Because most of the elderly were illiterate or had a low level of literacy, the informed consent form was read to them and they expressed their agreement. Also, the elderly who were literate signed the informed consent form. The procedure was approved by the ethics committee.

For the concept of perception of aging, data were collected using the Persian translation of brief version of Aging Perceptions Questionnaire developed by Barker et al (B-APQ), which consists of 17 questions in five dimensions: timeline–chronic/cyclical, positive consequences, positive control (three items), negative consequences and control (five items), and emotional representations (three items). The minimum and maximum scores for the three-item dimensions are 3 and 15, respectively. The scores for the dimension of negative consequences and control are 5 and 25, respectively. The lowest value is 17 and the highest is 85.

This questionnaire has been translated into several languages.<sup>15–18</sup> The Persian version of B-APQ has been developed by Sadegh Moghadam et al and has been validated with a Cronbach alpha of 0.75.<sup>19</sup>

CL-FODS was initially designed in 1969, but we used the revised version of this scale, which consists of 32 items in four subscales based on Likert grading. These four scales include one's own death, one's own dying process, other people's death, and other people's dying process. Each scale has eight items. The range of scores for each subscale is between 8 and 40 points, and between 32 and 160 points in total.

The Persian version of CL-FODS has been developed by Naderi and Esmaili, and has been validated with a Cronbach's alpha of 0.89.<sup>14</sup>

Data were statistically analyzed in SPSS software version 16. Descriptive statistics were used to determine the frequency, mean, and SDs of the variables. Pearson's coefficient was used for interval variables, independent *t*-test for comparing the means in two independent groups, analysis of variance (ANOVA) test for comparing the means in several independent groups, and linear regression test for predicting criterion variables based on predictor variables. The significance level was considered as  $P < 0.05$ .

Data were analyzed with descriptive statistics methods, ANOVA, Pearson's test, independent *t*-test, and linear regression using SPSS 16.

## Results

The subjects had a mean age of  $73.97 \pm 7.68$  years, and a total of 42.4% of subjects were men and 57.6% were women. In Table 1, demographic data including age, gender, education, marital status, number of children, and companionship status of the research units are described. The total B-APQ score was  $63.18 \pm 8.75$ , with the highest score ( $17.10 \pm 4.70$ ) being in the negative consequences and control dimension (Table 2). The total CL-FODS score was  $128 \pm 14.80$ , with the

**Table 1** Distribution of demographic data

Variable	Frequency	Percentage
Age, years		$73.97 \pm 7.68$
Gender		
Male	140	42.4
Female	190	57.6
Education/literacy		
Illiterate	179	54.2
Reading and writing	84	25.5
Elementary school certificate	40	12.1
Middle school certificate	13	3.9
High school diploma	11	3.3
College/seminary degree	4	0.9
Marital status		
Single	45	13.6
Married	195	59.1
Widow/widower	88	26.7
Divorced	2	0.6
Number of children		
0	6	1.8
1–5	200	60.6
>5	124	37.6
Companionship		
Alone	104	31.5
Spouse	159	48.2
Child	36	10.9
Spouse and children	26	7.9
Relatives	5	0.9

highest score ( $35.13 \pm 4.06$ ) pertaining to the fear of other people's death subscale. The result of the Pearson correlation test showed no direct relationship between the total B-APQ score and the total CL-FODS score ( $P = 0.052$ ). However, there was a statistically significant relationship between

**Table 2** Statistical analysis of B-APQ and CL-FODS scores and their dimensions/subscales

Variable	Statistical index	Mean	SD	Min	Max
Death anxiety	Fear of one's own death	31.85	5.69	8	42
	Fear of one's own dying process	31.71	5.19	8	40
	Fear of other people's death	35.13	4.06	18	40
	Fear of other people's dying process	29.22	6.12	12	40
	Total score	128	14.80	63	160
Perception of aging	Timeline–chronic/cyclical	11.49	3.98	3	63
	Positive consequences	11.00	1.59	3	15
	Positive control	12.38	2.09	6	15
	Negative consequences and control	17.10	4.70	5	25
	Emotional representations	9.20	3.77	3	15
	Total score	63.18	8.75	32	112

**Abbreviations:** B-APQ, Barker's Brief Aging Perceptions Questionnaire; CL-FODS, Collett–Lester Fear of Death Scale.

**Table 3** Relationship of dimensions of perception of aging with death anxiety

B-APQ	CL-FODS	
	R	P-value*
Timeline–chronic/cyclical	–0.16	0.02
Positive consequences	–0.13	0.01
Positive control	0.09	0.08
Negative consequences and control	0.12	0.01
Emotional representations	0.27	0.00
Total score	0.10	0.052

**Note:** \*Pearson’s correlation test.

**Abbreviations:** B-APQ, Barker’s Brief Aging Perceptions Questionnaire; CL-FODS, Collett–Lester Fear of Death Scale.

the total CL-FODS score and the B-APQ dimensions such as timeline–chronic/cyclical, positive consequences, negative consequences and control, and emotional representations ( $P < 0.05$ ), as shown in Table 3.

Independent *t*-tests showed that perception of aging and fear of death had no statistically significant relationship with gender, place of residence, or participation in religious activities ( $P > 0.05$ ).

Pearson’s correlation tests revealed a significant relationship between the total CL-FODS score and age ( $P < 0.001$ ), but no such relationship was found for the number of children ( $P > 0.05$ ). There was, however, a significant relationship between the total B-APQ score and the number of children as well as age ( $P < 0.05$ ).

The results of ANOVA showed that death anxiety had a significant relationship with marital status ( $P < 0.001$ ) and the presence of a companion ( $P < 0.001$ ), but not with economic status, education level, income source, or illness ( $P > 0.05$ ).

ANOVA also showed that the perception of aging has a significant relationship with the education level ( $P = 0.01$ ), but not with marital status, economic status, presence of a companion, income source, or illness ( $P > 0.05$ ).

The results of the linear regression test showed that each unit increase in the B-APQ score corresponded to a 0.13 decrease in the CL-FODS score, and each year increase in age corresponded to a 0.25 decrease in the CL-FODS score (Table 4).

## Discussion

This study aimed to determine the relationship between the perception of aging and some of the demographic factors associated with death anxiety in older adults in Gonabad, Iran. Regression results indicated that the death anxiety score was predictable according to the age and all dimensions of perception of aging, except for the consequences and negative control dimension.

**Table 4** Relationship of death anxiety with dimensions of perception of aging and age

Death anxiety variable	Dimensions of perception of aging	B	β	SE	P-value*
Perception of aging	Timeline–chronic/cyclical	–0.49	–0.13	0.19	0.01
	Positive consequences	–1.02	–0.11	0.50	0.04
	Positive control	0.77	0.10	0.37	0.04
	Negative consequences and control	0.33	0.10	0.16	0.05
	Emotional representations	0.88	0.22	0.21	<0.001
Age		–0.37	–0.19	0.10	<0.001

**Note:** \*Linear regression test.

**Abbreviation:** SE, standard error.

Accepting the natural aging process and the realistic attitude to the situations associated with this stage (the positive and negative results of aging and the amount of control over the accompanying situations) can reduce death anxiety.<sup>20,21</sup>

The elderly who are aware of the natural aging process and have accepted their physical and mental status at this stage of life reported less anxiety, even though they had poor physical and mental conditions. The reason is that they have accepted death as an approach to a better life and to get rid of the present painful conditions.<sup>20</sup>

This study showed that the perception of aging perfects by age and there is a more realistic view of the acceptance of aging conditions. Mental health, of course, helps this understanding. The better the cognitive status and mental health of the elderly, the lower their death and dying anxiety.<sup>22</sup> This is because they feel having more control over their health and life and more resistance against depression and fear of death.<sup>20</sup>

As other studies have shown, with age, one’s perceptions of aging become more stable and realistic.<sup>22</sup> Existing reports on the relationship of age with death anxiety are contradictory because some indicate a consistent direct relationship between death anxiety and age, but others imply that this relationship can be expressed as an asymmetric parabola, in the sense that it increases with age, peaks in middle-aged people, and then starts to decrease.<sup>23</sup>

Our results in regard to the relationship between death anxiety and age are consistent with the findings of Weiss and Hope<sup>24</sup> and Wagner and Lorion,<sup>25</sup> but the study of Nouhi et al<sup>26</sup> did not find such a relationship.

In this study, there was no relationship between gender, death anxiety, and perception of aging. It can be argued that in small communities such as the one targeted in this research (Gonabad), population’s adherence to the tradition of respect for the elderly and people’s acceptance of roles associated with aging lead to a uniform perception of aging among men and women – an argument that is supported by

numerous studies that have pointed out the role of culture in people's perception of aging.<sup>22,24</sup>

Other studies have mentioned gender differences in death anxiety and the perception of aging. However, some studies have suggested that women have a more negative perception of aging, feel less control over their condition as an elder, and exhibit more concern about their dependencies in old age.<sup>27</sup> In contrast, a study by de Freitas et al on the meaning of old age and aging experience among the rural elderly of Ceara (Brazil) showed that women are better in adapting to changes in their social networks and aging developments.<sup>10</sup>

Limitations of this study included limited sampling in one geographic area and the cultural differences affecting death anxiety and the perception of aging.

## Conclusion

The findings of this study show that the perception of aging can predict the anxiety of death among the elderly. When considered alongside the widely accepted notion that death anxiety has significant behavioral and emotional implications, especially for the elderly, this finding highlights the need for a concerted effort to develop a comprehensive care plan aimed at reducing the death anxiety among the Iranian elderly by altering their perception of aging. Understanding the concept and determinants of the perception of aging can contribute to improving the elderly's satisfaction with aging and their adaptation to age-related changes, but considering the involvement of numerous personal, social, and cultural factors with this perception and the fact that these factors are likely to vary with the community, this notion needs to be subjected to further research in different communities, so as to ensure the effectiveness of programs and measures to be adopted in support of the elderly.

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## Disclosure

The authors report no conflicts of interest in this work.

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