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# Effect of Gerotranscendence Educational Program on Death Anxiety among the Elderly

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## Abstract

**Background:** Theory of gerotranscendence is a framework to plan for good aging and death anxiety among the elderly is important issue needs to planning.

**Aim:** This study aimed to investigate the effect of a gerotranscendence educational program on death anxiety among the elderly.

**Method:** This quasi-experimental study was conducted on the elderly referring to two primary health services centers in Mashhad, Iran, within June-July 2021. Participants were selected using the purposive sampling method and non-randomly divided into two groups of intervention and control (n=25 each). The elderly in the intervention group received three video files based on the dimensions of the theory of gerotranscendence. They discussed and practiced the strategies of gerotranscendence in a virtual group for 3 weeks. The control group had normal activities in their usual virtual groups. Both groups completed the Templer Death Anxiety Scale at the pretest and 2 weeks after the intervention. Data were analyzed by SPSS21.

**Results:** Mean age of the elderly were  $66.36\pm5.55$  years, and 54% of the participants were male. Mean anxiety score in the intervention group was significantly reduced (z=-0.377, P<0.0001). Mean change of anxiety score before and after the intervention in the intervention group (1.8±1.75) was significantly higher than the control group (0.08±1.97); (z=-2.876, P=0.004).

**Implications for Practice:** The gerotranscendence educational program (educational videos and virtual sessions) reduced the death anxiety among the elderly. Therefore, the use of this educational program package in primary health services centers can be an efficient and low-cost method to reduce death anxiety among the community-living elderly.

Keywords: Death anxiety, Education, Elderly, Geriatric health, Geriatric nursing, Theory of gerotranscendence

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#### Introduction

One of the most important issues in the present century is the phenomenon of aging, and the world's population is rapidly aging (1). This period of life is filled with various feelings of shortcomings, disabilities, and worries (2, 3), and most elderly feel anxiety due to their unaccomplished tasks (4, 5). Death anxiety is a common characteristic of aging, which means the prediction of one's death and fear of the death process of oneself and important individuals in life (6). It has been reported that the older adults experience a greater fear of death (up to 72%) than other people (7-9). Over the past few decades, several theories have been proposed explaining the natural process of aging and the nature of changes in the psychological dimension developed by aging (10).

The theory of gerotranscendence, first proposed in 1989 by the Swedish sociologist and gerontologist Lars Tornstam (11), is based on three dimensions, namely The Cosmic, The Self, and Social and Personal Relationships. The Cosmic dimension involves increasing the sense of companionship with the universe and acknowledging oneself as a part of it. The Self dimension implies the unity and cohesion of within and oneself. The Social and Personal Relationship dimension reconsiders the individual's relations with others and society (10, 12).

The Cosmic dimension deals with time and space, connection to the earlier generation, life and death, mystery in life, and the subject of rejoicing. The Self dimension discusses self-confrontation, a decrease of self-centeredness, the development of body transcendence, self-transcendence, rediscovery of the child within, and ego-integrity. The Social and Personal Relationship dimension is involved with the changed meaning and importance of relations, role-play, emancipated innocence, modern asceticism, and everyday wisdom (13). Considering the relationship between the components of the theory of gerotranscendence and the concepts of death anxiety (14), it seems that it is possible to take steps to control and reduce death anxiety among the elderly through an educational program based on the concepts of this theory.

Previous studies have investigated the effectiveness of mindfulness-based cognitive therapy (15), religious spiritual therapy (16), logo therapy (17), and teaching the components of spiritual intelligence (18) on death anxiety among the elderly. Moreover, the impact of training the interventions of gerotranscendence concepts on the meaning of life, depression, and life satisfaction in the elderly living in nursing homes (19) and the views and behaviors of elderly caregivers (20) have already been examined in earlier studies. Prevention, reduction, or treatment of the elderly's problems through educating and providing counseling services to them are among the key tasks of geriatric nurses (4).

The availability of education and repeatability of the content for better learning are essential features of elderly education. The use of social networks, along with educational aids, can facilitate learning for the elderly and produce appropriate outcomes (10). Due to the lack of evidence regarding the interventions of death anxiety reduction and uncertainty of the effect of educational interventions based on specialized theories of aging among healthy and active elderly, the present study aimed to determine the effect of gerotranscendence educational programs on death anxiety among the elderly.

## Methods

The present quasi-experimental study was conducted on the elderly referring to two primary healthcare centres in Mashhad, Iran, within June-July 2021. The primary healthcare centres were assigned as either the intervention or control group (nonrandomly). This primary healthcare centres were similar in terms of geographical location and socio-cultural level of referees.

#### **Participants**

The samples (n=50) were selected from a list of elderly receiving health services in each centre using a purposive sampling method. Inclusion criteria were being 60 years old and older, being able to work with a smartphone independently or with assistance, having an account in social networks, being familiar with how to use social media independently or with help, and lacking malignancy or mental illness. On the other hand, the individuals who confronted specific medical conditions (e.g., malignant or mental illness) preventing them from furthering the study, were unwilling to continue participation in the study, and whose spouse or a loved one passed away during the study were excluded from the study.

# Sample size

According to a study by Aloustani et al. (21), who reported the mean score of post-test anxiety in the intervention group as  $5.24\pm3.28$  and in the control group as  $7.84\pm1.92$ , and considering the confidence coefficient 0.95 and the test power of 90% and using the mean formula of two independent populations (22), the minimum sample size was determined at 24 per group. The final sample size was determined at 25 cases in each group considering the interventional nature of the study and the drop-out rate of about 5%.

# Instrument

The required data were collected using a demographic information form and the Templer Death Anxiety Scale. The 15-item Templer Death Anxiety Scale is replied in a yes-no manner and has been translated into Persian by Rajabi (23). The validity and reliability (Cronbach's alpha=0.93) of this instrument have been confirmed in Iran (24). The answer yes represents a sign of anxiety in the individual. The total score of this scale is obtained in the range of 0-15, with the midpoint (point 7) being the cut-off point, more than that (7-15) representing high death anxiety, and less than that (0-6) meaning low death anxiety.

# Gerotranscendence Educational Program

The pre-intervention stage included the preparation of educational video content by the research team based on the dimensions of the theory of gerotranscendence, which was approved by experts in the field of education and geriatric nursing (Table 1). Subsequently, the content was transformed into a scripted scenario, which was then turned into a video. Six elderlies of different ages and education levels evaluated the films and their opinions on the simplicity, comprehensibility, and attractiveness of the films were applied.

The elderlies of the intervention group became members of a virtual group after obtaining their informed consent. The intervention was carried out in the form of presenting a video per week, followed by the discussion and practice of the members in the virtual group for a week under the guidance and control of the researcher. The researcher, using a follow-up checklist, made sure that all members received these files. The members were asked to think deeply about the presented content and exercises and raise any concerns or questions. During the intervention, the control group was active in their previous social networks and had normal activities in the virtual groups they were already a member of. Post-test was completed in both groups 2 weeks after the end of the intervention. Due to the effectiveness of the intervention, video files were sent to the participants in the control group if they wished.

Title	Content
First video (The Cosmic)	Ways to achieve a positive and excellent view of aging: Positive change in way of thinking, recognizing inner fears and ways to overcome them, familiarity with the concept of the universe, the passage of time and a sense of intergenerational connection, reflecting on the mission of the elderly in life, thinking about the complexity or simplicity and secret of life, and the joys of life and comparing them in different periods of life
Second video (The Self)	Reaching from self-knowledge to great aging, ways to discover the hidden aspects of one's existence, ways to reduce self-centeredness, paying attention to physical changes and understanding their limitations and coping with them during aging, rediscovering the child within, and not being ashamed of expressing emotions
Third video (Social and Personal Relationship)	Social relationships and achieving a positive outlook on old age through it, choosing the right people to communicate with, making positive changes in relationships with others, breaking unnecessary norms, being generous, understanding the difference between oneself and the roles created in life, avoiding giving advice and judging, accountability level in guiding others

Table 1. Content of educational videos

#### Ethical considerations

The draft of the research project was presented to and approved by the Ethics Committee of Biomedical Research, Mashhad University of Medical Sciences, Mashhad, Iran. All ethical considerations were observed in accordance with the Declaration of Helsinki. Informed consent was obtained from all participants, and the necessity and procedures of the research were explained to the subjects. They were also assured of the confidentiality of the information and informed about the possibility of study withdrawal at any research stage. The principles of autonomy and preservation of social status and dignity of the participants were observed in this study. The intervention lacked any physical or mental harm to the participants. The principle of confidentiality of information was observed in all stages of the research, from design to publication.

## Data analysis

The collected data were analyzed in SPSS software (version 21). Shapiro-Wilk test was used to investigate the normal distribution of quantitative variables. Qualitative demographic characteristics of the two groups were compared by Chi-squared and Fisher's exact tests. Independent t-test and Mann-Whitney U test were employed to compare the two groups in terms of normal and abnormal quantitative variables, respectively. For intra-group tests during the study stages (i.e., at the baseline and 2 weeks after the intervention), paired t-test and Wilcoxon test were used for normal and abnormal variables, respectively. The mean scores of death anxiety after the intervention were assessed in terms of group and contextual and intervening variables using the analysis of covariance.

#### Results

Approximately half of the participants were female (52% in the intervention group; 56% in the control group). In both groups, 72% (n=18) of the elderlies were married at the time of the study, 80% (n=20) had a diploma degree or lower, and 88% (n=23) were at a favorable economic status. Only 3 and 1 individuals were employed in the intervention and control groups, respectively, and the other cases were not working at the time of the study. In both groups, 80% of the elderly suffered from at least one chronic physical illness, and about half of the subjects in both groups had experienced the death of an acquaintance or a relative in the past year. It was also revealed that 64% (n=16) of the elderly in both groups were interested in participating in religious activities. Most elderly people in both groups lived with their spouse or their spouse and children; however, 28% (n=7) and 16% (n=4) of the participants in the intervention and control groups were living alone, respectively. Accordingly, no statistically significant difference was observed between the two groups in any of the demographic variables (table 2).

Based on the results, death anxiety scores were high at the pretest in both groups. The mean scores of the elderly's death anxiety had no significant differences according to the demographic variables, except for the history of a relative's death during the past year (f=4.132, P=0.049).

Variable	Mean±SD		Mann-Whitney U	
variable	Intervention group	Control group	Z	P-value
Age (years)	67.20±6.15	$65.52 \pm 4.95$	-0.96	0.334
Number of visits with friends and relatives (Per week)	$1.40{\pm}1.65$	1.96±1.85	1.14	0.253*
Number of voice or video calls with friends and relatives (per week)	3.68±3.30	3.48±2.48	-0.05	0.953
Number of visits with children (per week)	$3.32 \pm 2.85$	4.36±3.21	-1.29	0.195
Number of audio or video calls with children (per week)	5.08±3.30	5.52±3.64	-0.51	0.609
Number of children	$4.12 \pm 1.50$	3.56±1.41	-1.18	0.235
Duration of activity in virtual social networks per day (minutes)	91.20±75.55	128.80±91.57	-1.65	0.098
Duration of the disease (years)	11.12±14.16	8.24±6.53	-0.88	0.930
Duration of medication use (years)	9.20±9.77	$7.60\pm6.65$	-0.33	0.740

Table 2. Mean comparison of quantitative demographic characteristics in the intervention and control groups

intervention by groups						
	Death anxiety (me	Composison requit				
	Intervention group	Control group	Comparison result			
Pre-test	9.40±2.27	9.20±2.04	z=0.069, P=0.945*			
Post-test	$7.60\pm2.27$	9.12±1.71	t=-2.66, P=0.010**			
Mean differences	$1.8 \pm 1.75$	$0.08 \pm 1.97$	z=-2.876, P=0.004*			
Comparison result	z=-0.377	z=0.379				
	P<0.0001***	P=0.705***				
* Mann-Whitney U	** Independent samples t test	*** Wilcoxon signed-rank test				

Table 3. Mean and standard deviation of elderly's death anxiety scores at the baseline and after the intervention by groups

In the post-test, the death anxiety score decreased in the intervention group, and the difference between the mean scores of death anxiety was statistically significant in the intervention group at two research stages. Nevertheless, no significant difference was observed between pre-test and post-test scores in the control group. Post-test death anxiety score was lower in the intervention group than in the control group, and the difference between the two groups was statistically significant regarding the post-test death anxiety score (Table 3). Furthermore, the mean changes in the elderly's death anxiety scores were statistically significant in the two groups. The trend of changes in the mean score of death anxiety in the two groups is depicted in Figure 1.

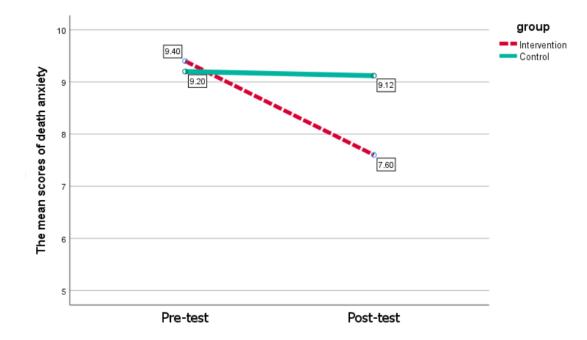


Figure 1. Changes in the mean scores of death anxiety in the intervention and control groups at study stages

#### Discussion

It was revealed that the gerotranscendence educational program including video files and virtual group meetings was effective in the death anxiety of the elderly. This result was consistent with those of some previous studies (19, 20, 25). The findings of a study showed an increase in the elderly's attitude toward gerotranscendence and their satisfaction with life and a decrease in their depression (25). Based on the results of another study, gerotranscendence reminiscence therapy increased the belief that life was meaningful in the elderly (19). Additionally, it has been reported that the gerotranscendence educational program has had positive effects on the attitudes and behaviors of elderly caregivers (20). In general, it seems that the interventions based on the concepts of gerotranscendence, along with medical interventions, can have a positive effect on the psychological dimension of the elderly. However, due to cultural differences, especially religious ones, it is required to perform more research in this domain.

The type of intervention in the present study was innovative, highlighting the fact that due to the

changes in lifestyles and the role of technology, it is necessary to pay attention to the applications of technology in planning health interventions, especially for healthy elderly living at home. In numerous studies, health education interventions have been performed face-to-face (19, 20, 25). Nonetheless, in the present study, the effect of educational intervention was evaluated in the form of a combination of educational videos and virtual group meetings. Mismatch of human resources with workload has a maximum correlation with poor quality of care (26), and educating older adults is highly time-consuming. Given the spread of technology and the prevalence of smartphone use among the elderly, the employment of videos and online interventions that are highly compatible with the learning characteristics of the elderly (10) can be a good solution.

The formation of a virtual group for elderlies increases the skills of using technology to make communications. It also helps them to participate in interpersonal interactions with greater confidence by expressing their opinions, feelings, and experiences in the virtual space free of stress and judgment, which eventually reduces their social isolation (27, 28). Moreover, the prevalence of coronavirus disease 2019 (COVID-19) has highlighted the need to employ online technologies in educating the elderly and supporting them psychologically (29, 30). Therefore, it seems useful to investigate the effectiveness of these interventions in cultural and technological contexts in different countries.

The target group in the present study was healthy and active elderly living in the community, while the main previous studies examined the impact of gerotranscendence education on the elderly population living in nursing homes, which was evaluated as effective (19, 25, 31). The results of studies have reported higher death anxiety rates in the elderly living in nursing homes than in those living in the community (32, 33). On the other hand, the findings of another study conducted to educate the components of spiritual intelligence to the elderly living in a nursing home in Iran (2018) showed that despite the fact that this education resulted in a significant effect on the death anxiety of others, it was ineffective in reducing death anxiety in the elderly themselves (18). Considering the differences between the two groups of the elderly living in the home and nursing homes, it is not possible to make an accurate comparison of the effectiveness of the educational method; nevertheless, it can be concluded that the interventions based on the theory of gerotranscendence may be effective in both groups. It also seems beneficial to compare the effect of the intervention assisted by educational videos in different populations of the elderly and compare different methods, including traditional face-to-face classes and virtual education methods.

In the present study, it was observed that the same percentage of people in both groups were not interested in participating in religious activities. Statistical analysis showed that this factor did not have an adverse effect on the results, and the intervention had a positive effect on both groups whether the participants were interested or not in participating in religious activities. In the theory of gerotranscendence, it has been stated that achieving gerotranscendence is not necessarily related to the religious nature of individuals. In this regard, the findings of previous studies have emphasized that the signs of gerotranscendence are observed in both religious and non-religious individuals (34).

Contradictory results have been reported regarding the effects of gerotranscendence education (19, 20). In the present study, the effect of this program was measured only 2 weeks after the intervention. Due to the availability of videos and ease of communication in the virtual space, the effect of the intervention may be more lasting, which wasn't addressed in the current study. In this respect, it is recommended to perform further studies to evaluate the persistence of the intervention effect. Online methods can also be used in younger age groups to create the context for gerotranscendence, which requires age-appropriate interventions and long-term investigations.

The characteristics of the elderly, such as becoming rapidly fatigued and bored and being unwilling to participate in group discussions, were considered in the study design. For this purpose, the researcher tried to create a happy, friendly, calm, and stress-free atmosphere in the virtual group. The preparation of a follow-up checklist and encouragement of the elderly individually led to acceptable participation in the exchange of views and group discussions, which was one of the strengths of the present study. Additionally, the ability of individuals to use virtual space was considered in the inclusion criteria of this study. On the other hand, the COVID-19 pandemic, which severely restricted the presence of the elderly in primary health services centers and increased the possible anxiety for the death of oneself or a loved one, was the limitation of the study.

According to the demographic characteristics, more than half of the individuals in both groups had

experienced the death of a loved one in the previous year. Due to the fact that this variable was identical in both groups, its confounding effect was controlled in the study. Nonetheless, this issue and the effects of the COVID-19 pandemic on the elderly's death anxiety need to be considered in interpreting the findings. Furthermore, the cultural, social, and familial differences of individuals should be taken into account in generalizing the results.

#### **Implications for practice**

Based on the results, educational videos based on the theory of gerotranscendence and virtual group sessions that are customized with the characteristics of learning in the elderly and accompanied by sufficient support for the subjects to participate in group discussions were effective in reducing the death anxiety among the elderly living in the community. Due to the fact that the programs related to the health of the elderly in primary health services centres are developed and prepared by those in charge of this field, gerotranscendence education, especially with standard content and in the form of educational videos, can be employed as easy and low-cost care for the psychological dimension of the elderly and gerotranscendence, along with other common methods.

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#### **Conflicts of interest**

The authors declare that there is no conflict of interest in this study.

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