




The Mediating Role of Psychological Well-being in Explaining the Effect of a Health-Promoting Lifestyle on Death Anxiety in Seniors with COVID-19 Experience

Roghayeh Hamidi¹, Parvaneh Ghodsi^{2*}, Sadegh Taghiloo³

¹ Ph.D Student, Department of Psychology, Central Tehran Branch, Islamic Azad University, Tehran, Iran

² Assistant Professor, Department of Psychology, Faculty of Psychology, Central Tehran Branch, Islamic Azad University, Tehran, Iran

³ Assistant Professor, Department of Psychology, Astara Branch, Islamic Azad University, Astara, Iran

* Corresponding author email address: elham_ghodsi@yahoo.com

Article Info

Article type:

Original Research

How to cite this article:

Hamidi, R., Ghodsi, P., & Taghiloo, S. (2024). The Mediating Role of Psychological Well-being in Explaining the Effect of a Health-Promoting Lifestyle on Death Anxiety in Seniors with COVID-19 Experience. *Health Nexus*, 2(1), 89-98.

<https://doi.org/10.61838/kman.hn.2.1.10>



© 2024 the authors. Published by KMAN Publication Inc. (KMANPUB), Ontario, Canada. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

ABSTRACT

The coronavirus and its variants continue to threaten the physical and mental health of many individuals, particularly those among the elderly infected with COVID-19. The purpose of this study was to examine the mediating role of psychological well-being in explaining the impact of a health-promoting lifestyle on death anxiety among seniors with COVID-19 experience in Tehran. This descriptive, correlational study involved a population of home-dwelling men and women aged 65 to 75 years in Tehran in 2023, who had experienced COVID-19 in the past six months. A targeted sample of 400 individuals responded to the Death Anxiety Scale (Templer, 1970), the Health-Promoting Lifestyle Profile (Walker et al., 1987), and the Psychological Well-being Scale (Ryff, 1989). Structural equation modeling was employed for data analysis. The findings, obtained using confirmatory factor analysis and AMOS 24 software, indicated a good fit between the structural model and the collected data. A positive and significant relationship was found between a health-promoting lifestyle and psychological well-being, and a negative and significant relationship between a health-promoting lifestyle and death anxiety, as well as between psychological well-being and death anxiety. Indirect pathways between death anxiety, a health-promoting lifestyle, and death anxiety were also confirmed ($p = .001$). Based on the results of this study, it can be stated that a health-promoting lifestyle influences the death anxiety of seniors with COVID-19 experience through psychological well-being. The findings of this study can be useful for counselors, psychologists, and health professionals.

Keywords: Death Anxiety, Health-Promoting Lifestyle, Psychological Well-being, Seniors, COVID-19

1. Introduction

The COVID-19 pandemic has impacted millions globally and posed significant challenges to worldwide healthcare systems (1). The mortality rate of the disease is directly correlated with the age of the infected individuals, with the highest mortality rates reported in those over 65. In the United States, eight out of ten reported coronavirus deaths have occurred in individuals aged 65 or older (2). Generally, older adults have a relatively weaker immune system, making them more susceptible to the coronavirus. Additionally, elderly individuals are more likely to suffer from chronic underlying diseases, making them more prone to infection; therefore, mortality and serious complications are more common among seniors, especially those with chronic illnesses (3). Specifically, health conditions such as high blood pressure, diabetes, and coronary and cerebral vascular diseases can increase the risk of severe complications from the coronavirus in older adults (2).

Anxiety is one of the most common psychological problems in the elderly as they face various deficiencies and disabilities during this life stage. Studies have shown that seniors are more prone to anxiety due to decreased self-confidence, reduced activity and mobility, loss of friends, reduced financial and physical independence, and chronic diseases. The most common type of anxiety among them is death anxiety (4, 5). Death anxiety refers to intense fear, terror, or worry caused by thoughts of death, separation from the world, or events that occur after life. The high prevalence of death anxiety among the elderly is due to their numerous physical problems, chronic diseases, movement disorders, physical disabilities, and dependence on others. Retirement and subsequent loneliness can also contribute to death anxiety in the elderly. Among the factors influencing the quality of life and death anxiety is a health-promoting lifestyle (6).

A health-promoting lifestyle is a sub-pattern of appropriate behaviors (such as eating healthy, engaging in physical activity, sleeping well), along with avoiding unhealthy food, alcohol, and smoking, which can improve an individual's health and well-being (3). According to Walker (1990), a health-promoting lifestyle is "a multidimensional pattern of perceptions and actions initiated by the individual, aimed at continuing and enhancing their level of health and self-actualization." Based on scientific

evidence, wisely choosing this lifestyle is crucial for preventing diseases and improving physical and mental health. For instance, research in Japan has shown that a healthy lifestyle enhances the mental health of the elderly and specifically plays a role in preventing depression. Additionally, there were significant relationships between smoking, overweight, and poor sleep (as indicators of lifestyle) and increased risk of depression and memory loss (7).

Previous research has shown that poor psychological well-being is somewhat associated with death anxiety (8, 9) and that poor psychological well-being explains the adverse effects of death anxiety and increases the risk of mental health challenges (10). On the other hand, the results indicated a positive and significant relationship between a health-promoting lifestyle and psychological well-being in the elderly. These findings suggest that the relationship between a health-promoting lifestyle and death anxiety could be indirect and mediated by variables such as psychological well-being (11-13). Psychological well-being is a highly complex personal phenomenon that develops as a result of human activity in a system of real relationships with surrounding objects. Psychological well-being can be described as a sense of satisfaction with life, quality of life, personal self-actualization, and the creation of objective and mental values, comprising evaluative well-being (life satisfaction), hedonic well-being (feelings of happiness, sadness, etc.), and eudaimonic well-being (sense of purpose and meaning in life) (14). Research conducted during the COVID-19 pandemic shows that the situation has had a significant impact on mental health, with reports of depression and anxiety between 16 to 28 percent of the general population (15). Given that psychological well-being involves understanding the existential challenges of life and dealing with ontological challenges, and considering that seniors face existential and mental challenges as their lives come to an end, death anxiety is one of the most significant existential and ontological challenges in their lives (16). In Iran, the social and cultural context is predominantly religious, and terror management theory illustrates how people manage their knowledge of death and how culture reduces death anxiety in religious individuals; thus, although the social and cultural context significantly affects how death anxiety is perceived, sufficient research on

mental health anxiety disorders, especially in the elderly population, is lacking (17).

Therefore, given the increasing number of seniors in the future and the variety of observed stresses, particularly death anxiety in seniors who have experienced COVID-19, addressing mental health and death in the elderly is one of the pressing needs of the present age. Additionally, the purpose of life for older individuals is not merely to have a long life and to be alive; rather, the type and quality of their life is of great importance, and one of the major challenges of aging is death anxiety, which can negatively impact their health and prevent them from having a suitable old age. Moreover, while most research on factors influencing death anxiety in the elderly has examined the simple relationship between two or more variables, there is a lack of studies on the structural and concurrent relationships of these variables. Furthermore, no study has examined the cognitive, emotional, and social components of death anxiety in seniors who have experienced COVID-19, nor the role of mediating variables in the relationship between criterion and predictor variables, and the main question of the research was whether the relationship between death anxiety based on a health-promoting lifestyle mediated by psychological well-being in seniors who have experienced the coronavirus is significant?

2. Methods and Materials

2.1. Study Design and Participants

The current research was fundamental in terms of its objective and descriptive correlational based on structural equation modeling regarding its data collection and analysis method. The population of this study included all home-dwelling male and female seniors aged 65 to 75 in Tehran in the year 2022, who had experienced COVID-19 in the past six months. In structural equation modeling methodology, the sample size can be determined to be between 5 to 15 observations per measured variable. Accordingly, this study included a sample of 400 individuals, consisting of 200 women and 200 men. The sampling method was purposive.

Before distributing the questionnaires, all seniors were informed about the purpose of the research to an extent that did not introduce bias; therefore, all seniors participated in the research voluntarily and with informed consent. Also, all seniors were assured that their information would be treated

with complete confidentiality. Completing the questionnaires required between 15 to 20 minutes; however, there was no time limit imposed for completing the questionnaires. Ultimately, great care was taken in collecting the data and discarding hurriedly filled questionnaires and those following a repetitive response pattern.

2.2. Measures

2.2.1. Death Anxiety

This questionnaire, designed by Templer and published in 1970, includes 15 items. Responses to each item are either yes or no, with a score of one assigned to yes and zero to no. A yes response indicates the presence of death anxiety, and a no response indicates its absence. Scores on this tool range from zero to 15. Scores of eight or above indicate high anxiety about death, and scores below seven indicate low death anxiety. Templer reported a test-retest reliability coefficient for this scale of .83. In Iran, Rajabi et al. examined the reliability of this scale, reporting a split-half reliability coefficient of .62 and a Cronbach's alpha (internal consistency) of .73. Its concurrent validity was based on its correlation with scales of manifest anxiety and depression, respectively, at .27 and .40. The validity of the Death Anxiety Scale was also assessed using the Death Worry Scale and manifest anxiety scale, with correlation coefficients of .40 and .43, respectively (4).

2.2.2. Psychological Well-Being

The Psychological Well-Being Scale is a self-report measure where participants respond to questions about themselves on a six-point Likert scale. This scale was initially created by Ryff in 1989. According to Ryff, well-being includes six components: self-acceptance, autonomy, positive relations with others, purpose in life, personal growth, and mastery over the environment. Consequently, Ryff designed a scale measuring these six components with 120 items, 20 items per component. Besides the long form, shorter versions of the scale with 84, 42, and 18 items are also available, and the 84-item form was used in the current study. The Cronbach's alpha in studies has been reported between 72% to 89%. Factor analysis results also indicated the presence of six factors. Bayani, Koocheky, and Bayani (2008) examined the reliability of this scale, and its internal

consistency was measured using Cronbach's alpha. The results obtained for mastery over the environment (.77), positive relations with others (.77), personal growth (.78), self-acceptance (.71), purpose in life (.70), and autonomy (.82) (18).

2.2.3. Health-Promoting Lifestyle

The Health-Promoting Lifestyle Profile, developed by Walker et al. (1995), is a 52-item self-report questionnaire that measures a health-centered lifestyle focusing on innovative actions and personal perceptions aimed at maintaining or improving health, self-actualization, and personal satisfaction. It comprises six subscales based on the framework of the health promotion model, including exercise (questions 12-24), nutrition (questions 1-11), responsibility (questions 25-32), stress management (questions 33-38), interpersonal support (questions 39-46), and self-actualization (questions 47-54). Responses are scored on a four-point Likert scale (always:4, often:3, sometimes:2, never:1). Scores for each dimension are obtained by summing the relevant item scores. The overall questionnaire score is calculated by summing all item scores, ranging from a minimum of 54 to a maximum of 216. The validity of this questionnaire was confirmed in a study by Mohammadi Zidi et al. (2011), and its reliability or trustworthiness was calculated using Cronbach's alpha. Typically, the range for Cronbach's alpha reliability coefficients is from zero (0) indicating no reliability to one (1) indicating complete reliability, with values closer to one indicating higher reliability. The reliability of this questionnaire in a study in Yazd, Iran, for all subscales ranged from .70 to .77, and the content validity index for this tool was reported as .74. Cronbach's alpha for the components was .74 for nutrition, .84 for exercise, .74 for responsibility, .76 for interpersonal relationships, and .82 for self-actualization (19).

2.3. Data Analysis

The collected data were analyzed using descriptive and inferential statistical methods. Descriptive statistical methods such as mean, standard deviation, and frequency distribution tables were used to examine the demographic information and research variables. Additionally, to estimate and generalize the information obtained from the research sample to the population, after considering statistical assumptions such as skewness and kurtosis, normality (Kolmogorov-Smirnov), linearity of the relationship between predictor variables and the criterion variable, and collinearity or multicollinearity (tolerance and variance inflation factor), inferential statistical methods such as Pearson's correlation coefficient and bivariate regression analysis were used. Moreover, to examine the mediating role of psychological well-being in the relationship between a health-promoting lifestyle and death anxiety, path analysis with a structural equation modeling approach was employed. Data analysis was performed using SPSS.v24 and AMOS.v23 software. The significance level in this study was set at .05.

3. Findings and Results

In the present study, 406 seniors participated, including 203 women and 203 men, with a mean age and standard deviation of 68.02 and 3.62 years, respectively. Among the participants, 45 individuals (11.1%) were employed, 99 (24.4%) were homemakers, 157 (38.7%) were retired, 39 (9.6%) were disabled, 30 (7.4%) were unemployed, and 36 (8.9%) were in other employment situations. Finally, 29 participants (7.1%) were single, 213 (52.5%) were married, and 36 (8.9%) were separated from their spouses. It is noteworthy that the spouses of 128 participants (31.5%) were deceased. Table 1 presents the means, standard deviations, and correlation coefficients among the research variables.

Table 1

Means, Standard Deviations, and Correlation Matrix Among Research Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	Mean	SD
1	-													16.38	3.98
2	.66**	-												16.43	3.75
3	.68**	.71**	-											16.36	3.94
4	.50**	.41**	.59**	-										12.02	3.49
5	.45**	.49**	.52**	.61**	-									10.69	2.32
6	.60**	.57**	.57**	.37**	.35**	-								18.11	3.94
7	.28**	.23**	.26**	.18**	.25**	.24**	-							11.05	2.03
8	.49**	.41**	.38**	.31**	.44**	.42**	.30**	-						10.48	2.21
9	.42**	.38**	.32**	.27**	.36**	.43**	.34**	.61**	-					11.22	2.40
10	.23**	.22**	.16*	.10*	.14**	.19**	.09	.44**	.40**	-				9.12	1.78
11	.25**	.20**	.19**	.07	.32**	.25**	.31**	.37**	.33**	.17**	-			9.88	2.06
12	.49**	.41**	.36**	.36**	.44**	.42**	.32**	.60**	.56**	.45**	.32**	-		10.50	2.16
13	-.37**	-.34**	-.29**	-.33**	-.21**	-.37**	-.23**	-.39**	-.37**	-.19**	-.30**	-.43**	-	7.78	3.51

*p < .05. **p < .01

1. Spiritual Growth Lifestyle; 2. Responsible Lifestyle; 3. Interpersonal Relationships Lifestyle; 4. Physical Activity Lifestyle; 5. Stress Management Lifestyle; 6. Nutritional Lifestyle; 7. Psychological Well-being - Autonomy; 8. Psychological Well-being - Environmental Mastery; 9. Psychological Well-being - Personal Growth; 10. Psychological Well-being - Positive Relations; 11. Psychological Well-being - Purpose; 12. Psychological Well-being - Self-acceptance; 13. Death Anxiety.

Table 1 shows the correlation coefficients among the variables, which are aligned with expectations and consistent with theories in the field of research. To assess the normality of the distribution of univariate data, the skewness and

kurtosis of each variable were evaluated, as well as the homoscedasticity assumption by examining the variance inflation factor (VIF) and tolerance coefficient, the results of which are presented in Table 2.

Table 2

Examination of Assumptions of Normality and Homoscedasticity

Variable	Skewness	Kurtosis	Tolerance	Variance Inflation Factor (VIF)
Spiritual Growth Lifestyle	-.37	-.09	.38	2.65
Responsible Lifestyle	-.56	.16	.37	2.69
Interpersonal Relationships Lifestyle	-.33	-.27	.33	3.04
Physical Activity Lifestyle	-.08	-.40	.47	2.15
Stress Management Lifestyle	-.22	-.06	.49	2.04
Nutritional Lifestyle	-.77	.54	.51	1.96
Psychological Well-being - Autonomy	-.48	-.27	.79	1.27
Psychological Well-being - Environmental Mastery	-.56	.03	.56	2.20
Psychological Well-being - Personal Growth	-.35	-.74	.47	2.13
Psychological Well-being - Positive Relations	-.06	.90	.67	1.49
Psychological Well-being - Purpose	-.21	-.16	.74	1.35
Psychological Well-being - Self-acceptance	-.34	.25	.45	2.21
Death Anxiety	-.01	-.53	-	-

Table 2 shows that the values of skewness and kurtosis for all components are within the ±2 range. This finding indicates that the assumption of normality for the distribution of univariate data is met. Furthermore, according to the results in Table 2, it can be said that the assumption of homoscedasticity is also met in the present research data. This is because the tolerance values for the

predictor variables are greater than 0.1, and the variance inflation factor (VIF) values for each are less than 10. A tolerance value less than 0.1 and a VIF value greater than 10 would indicate a violation of the homoscedasticity assumption.

To evaluate whether the assumption of normality for the distribution of multivariate data was met, Mahalanobis

distances were analyzed. The skewness and kurtosis values for the Mahalanobis distance data were 2.17 and 4.03, respectively, indicating that these values are outside the ± 2 range. Therefore, a box plot of the Mahalanobis distance data was examined, and it was found that the data for four participants constituted multivariate outliers; thus, data from these four participants were removed. This action reduced the skewness and kurtosis values of the Mahalanobis distance data to 0.37 and 0.94, respectively, establishing the assumption of normality for the distribution of multivariate data. Finally, to evaluate the homogeneity of variance, a scatter plot of standardized residuals was examined, and the results showed that this assumption was also met in the present research data.

In the measurement model of the study, two variables—psychological well-being and health-promoting lifestyle—were latent and, along with their indicators, formed the research measurement model. The fit of the measurement model was assessed using confirmatory factor analysis, AMOS 24.0 software, and maximum likelihood estimation (ML). The fit indices from the confirmatory factor analysis supported an acceptable fit of the measurement model to the collected data, with the exception of the χ^2/df and RMSEA indices ($\chi^2/df = 4.84$, CFI = .910, GFI = .909, AGFI = .867, RMSEA = .098). Due to the importance of these two fit

indices and following an assessment of modification indices, the measurement model was adjusted in two stages by creating covariances between the errors of the indicators for autonomy and positive relations with others (first stage), and for physical activity/exercise and stress management (second stage), resulting in fit indices that indicate an acceptable fit of the measurement model to the collected data ($\chi^2/df = 3.40$, CFI = .945, GFI = .936, AGFI = .901, RMSEA = .077). In the measurement model, the largest factor loading was for the interpersonal relationships indicator ($\beta = .850$), and the smallest was for the autonomy indicator ($\beta = .422$). As all factor loadings were greater than .32, it can be said that all of them had sufficient power to measure the study's latent variables.

In the second stage, the fit indices of the structural model were estimated and evaluated. The structural model posited that a health-promoting lifestyle affects death anxiety in seniors with COVID-19 experience through the mediation of psychological well-being. The model was analyzed using the structural equation modeling method. All fit indices from the analysis supported an acceptable fit of the structural model to the collected data ($\chi^2/df = 3.03$, CFI = .948, GFI = .941, AGFI = .904, RMSEA = .071). [Table 3](#) presents the path coefficients in the structural model.

Table 3

Total, Direct, and Indirect Path Coefficients Between Variables in the Structural Model

Path	b	S.E	β	p
Psychological Well-being → Health-Promoting Lifestyle	.174	.028	.656	< .001
Death Anxiety → Psychological Well-being	-1.567	.357	-.386	< .001
Direct Effect: Death Anxiety → Health-Promoting Lifestyle	-.221	.079	-.205	.004
Indirect Effect: Death Anxiety → Health-Promoting Lifestyle	-.273	.052	-.253	< .001
Total Effect: Death Anxiety → Health-Promoting Lifestyle	-.494	.058	-.458	< .001

[Table 3](#) shows that the total path coefficient between health-promoting lifestyle and death anxiety is negative and significant ($p < .001$, $\beta = -.458$). The path coefficient between psychological well-being and death anxiety is also negative and significant ($p < .001$, $\beta = -.386$). [Table 3](#) shows that the indirect path coefficient between health-promoting lifestyle and death anxiety is negative and significant ($p <$

$.001$, $\beta = -.253$). Based on this, it can be said that psychological well-being significantly mediates the effect of health-promoting lifestyle on death anxiety in seniors in a negative manner. [Figure 1](#) shows the structural model of the study explaining the effect of health-promoting lifestyle on death anxiety in seniors with COVID-19 experience through the mediating role of psychological well-being.

Figure 1

Standard Parameters in the Structural Model of the Research

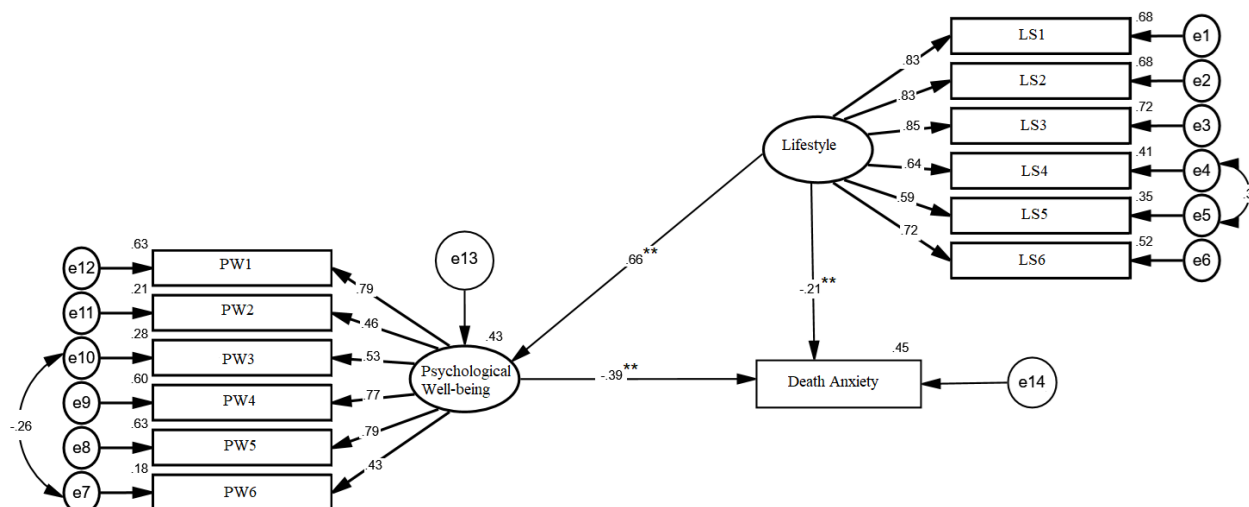


Figure 1 shows that the total squared multiple correlations (R^2) for the variable of death anxiety was .450, indicating that health-promoting lifestyle and psychological well-being together explain 45 percent of the variance in death anxiety in seniors with COVID-19 experience.

4. Discussion and Conclusion

The aim of this study was to elucidate the structural model of death anxiety based on a health-promoting lifestyle mediated by psychological well-being among seniors who have experienced COVID-19. The results from structural equation modeling, after fitting the model data fully, supported the research hypothesis that the total path relationship between a health-promoting lifestyle and death anxiety, mediated by psychological well-being, is significant in seniors with COVID-19 experience. Based on the research findings, it can be concluded that among seniors with COVID-19 experience, psychological well-being mediates the effect of a health-promoting lifestyle on death anxiety. No direct research supporting this specific finding was found. However, the findings of prior research (8-13, 20) indirectly support this finding.

It can be explained that the aging population is undoubtedly a success that has been achieved through changes in reducing mortality and also through social and economic processes (10). However, while life expectancy is continually increasing, the realm of health has changed. Moreover, although the population has increased, from one

perspective, infectious diseases such as the COVID-19 pandemic are one of the life-threatening issues for the elderly. Psychological well-being, as a key component of general health, has attracted significant attention from psychologists and researchers over the past two decades, with extensive research conducted in this field. Ryff saw his model of psychological well-being as an effort towards growth and advancement concerning the realization of one's potentials. When individuals, especially those who are healthy and psychologically well, need to cope with problems and disadvantages, they need to choose solutions. Alternatively, psychological well-being implies the manifestation of all an individual's talents and arises from a balance between positive and negative emotions and satisfaction with life. On the other hand, psychological well-being includes important principles that can influence emotions and affect all dimensions of human behavior and development, including physical and mental health, skill and educational growth, social competence, and the creation of positive relationships. Given the importance of psychological well-being in optimizing life and the challenges and disabilities that seniors experience during old age, this variable should be given greater attention, and effective factors identified to design more appropriate programs to help improve it (17).

The results of this study showed that there is a significant positive relationship between a health-promoting lifestyle and psychological well-being in seniors. One of the goals of

the health-promoting lifestyle program is to increase individuals' awareness and knowledge of their condition. Various factors lead to an increase in health-promoting lifestyle among seniors, and careful attention to these factors is necessary. Family support, self-efficacy, and literacy in self-awareness and self-management are among the reasons for this issue. A higher level of a health-promoting lifestyle in seniors living with their family is due to social support and seniors' self-efficacy, which enables them to better cope with declining physical and mental function. Kasebir and colleagues (2014) argued that the common concept of a health-promoting lifestyle being accompanied by self-efficacy and social support is one of the most significant predictive factors for a health-promoting lifestyle in seniors. Moreover, several studies have highlighted the role of psychological well-being in a health-promoting lifestyle. Psychological well-being can lead to an improvement in the patient's sense of ability to control illness and accept responsibility (21). In other words, psychological well-being can influence an individual's health-promoting lifestyle, with significant negative relationships between low psychological well-being and health-promoting lifestyle behaviors, and significant positive relationships between high psychological well-being and a health-promoting lifestyle. Research indicates that a health-promoting lifestyle can directly and indirectly affect seniors' anxiety through psychological well-being (22).

Psychological well-being acts as an important defensive mechanism against risk factors associated with clinical symptoms such as depression and anxiety, particularly in older individuals (23). Issues like physical changes, vulnerability to illnesses, disability, and the loss of relatives and friends (grief and loss) provide more evidence for thinking about death and resulting anxiety in older ages (24). Various factors can affect death anxiety, increasing or decreasing it. Psychological well-being is one of the most effective factors in death anxiety among seniors. In seniors with chronic diseases, it can predict death anxiety. Those who have higher psychological well-being and experience a meaningful and purpose-driven life are less afraid of death and accept it more readily (17). Therefore, another factor associated with death anxiety is psychological well-being. A different study showed the relationship between psychological well-being and death anxiety. Specifically,

when people, especially the elderly, are reminded of death, such as the death of loved ones and incurable diseases, their death anxiety increases. Seniors with high psychological contentment are more inclined to engage in self-care behaviors and a health-promoting lifestyle, thus potentially reducing their death anxiety (17).

This study, like other research, had limitations, such as the fact that it was conducted on seniors in Tehran, so care must be taken in generalizing the results. The timing of the research during the COVID-19 pandemic was a limitation and created difficulties in data collection. Also, the large number of questions caused fatigue in the seniors during responses. Additionally, one of the limitations of the current research was the lack of control over intervening variables, such as other abilities and psychological characteristics, personality traits, the emotional climate of the family, and moderating variables such as economic and social class. Moreover, since this study was conducted on seniors, the results are not generalizable to individuals of other age ranges; thus, it is suggested that for generalization of these results, the study be repeated in other cities of the country. Given the limitation of this study regarding the control of intervening, moderating, and facilitating variables, it is recommended that the effect of intervening and mediating variables (such as the family emotional climate, maladaptive schemas, emotion regulation strategies) be examined in future research. It is also suggested that future research use qualitative studies for a deeper examination. Furthermore, it is recommended that other research use interviews alongside questionnaires to ensure greater measurement validity. In addition, researchers in other studies should use random sampling to validate the research. Finally, it is suggested that in future research, the predictor and criterion variables of this study (death anxiety and health-promoting lifestyle) be examined with other mediating variables such as emotion regulation strategies, meaning in life, self-esteem, cohesion, coping strategies, and the results be compared with the findings of this study. It is recommended that operational programs and therapeutic protocols be developed and implemented in counseling centers and hospitals for seniors.

Authors' Contributions

RH: Contributed to the conceptualization and design of the study, data collection, analysis, interpretation of results, and drafting of the manuscript.

PG: Provided expertise in the conceptualization of the study, data analysis, interpretation of results, and critical revision of the manuscript for important intellectual content.

ST: Assisted in the design of the study, data analysis, interpretation of results, and critical revision of the manuscript for important intellectual content.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Acknowledgments

We would like to express our gratitude to all individuals helped us to do the project.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

Ethical Considerations

The study placed a high emphasis on ethical considerations. Informed consent obtained from all participants, ensuring they are fully aware of the nature of the study and their role in it. Confidentiality strictly maintained, with data anonymized to protect individual privacy. The study adhered to the ethical guidelines for research with human subjects as outlined in the Declaration of Helsinki.

References

1. Usher K, Bhullar N, Durkin J, Gyamfi N, Jackson D. Family violence and COVID-19: Increased vulnerability and reduced options for support. *International Journal of Mental Health*

Nursing. 2020;29(4):549-52. [PMID: 32314526] [PMCID: PMC7264607] [DOI]

2. Ioannidis JPA, Axfors C, Contopoulos-Ioannidis DG. Population-level COVID-19 mortality risk for non-elderly individuals overall and for non-elderly individuals without underlying diseases in pandemic epicenters. *Environmental Research*. 2020;188:109890. [PMID: 32846654] [PMCID: PMC7327471] [DOI]

3. Suksatan W, Teravecharoenchai S, Sarayuthpitak J. Factors Associated with a Health-promoting Lifestyle among Adults and Older Adults in the Era of COVID-19: An Integrative Review. *Open Access Macedonian Journal of Medical Sciences*. 2022;10(E):725-32. [DOI]

4. Mohammadpour A, Sadeghmoghadam L, Shareinia H, Jahani S, Amiri F. Investigating the role of perception of aging and associated factors in death anxiety among the elderly. *Clinical interventions in aging*. 2018:405-10. [PMID: 29588578] [PMCID: PMC5858545] [DOI]

5. Mokhtari R, Moayedi S, Golitaleb M. COVID-19 pandemic and health anxiety among nurses of intensive care units. *International Journal of Mental Health Nursing*. 2020;29(6):1275-7. [PMID: 33063915] [PMCID: PMC7675428] [DOI]

6. Atadokht A, Rahimi S, Valinejad S. The Role of Health Promoting Lifestyle and Religious Orientation in Predicting Quality of Life and Death Anxiety in Elders. *Aging Psychology*. 2018;4(2):143-54.

7. Aihara Y, Minai J, Aoyama A, Shimanouchi S. Depressive Symptoms and Past Lifestyle Among Japanese Elderly People. *Community Mental Health Journal*. 2011;47(2):186-93. [PMID: 20455023] [DOI]

8. Silva WAD, Brito TRdS, Pereira CR. Anxiety associated with COVID-19 and concerns about death: Impacts on psychological well-being. *Personality and Individual Differences*. 2021;176:110772. [PMID: 33612907] [PMCID: PMC7879129] [DOI]

9. Yousefi Afrashteh M, Masoumi S. Psychological well-being and death anxiety among breast cancer survivors during the Covid-19 pandemic: the mediating role of self-compassion. *BMC Women's Health*. 2021;21(1):387. [PMID: 34732193] [PMCID: PMC8564789] [DOI]

10. Zhao N, Liu B, Wang Y. Examining the Relationship between Death Anxiety and Well-Being of Frontline Medical Staff during the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health*. 2022;19(20):13430. [PMID: 36294046] [PMCID: PMC9603769] [DOI]

11. Chuang SP, Wu JYW, Wang CS, Pan LH. Health-promoting lifestyles and psychological distress associated with well-being in community adults. *American Journal of Health Behavior*. 2017;41(4):446-53. [PMID: 28601104] [DOI]

12. Khani F, Inanlou M, Ganjeh F, Haghani H. Study of Health Promotion Lifestyle and Psychological Well-being in Women Attending the Health Centers of Arak City in 2019. *Journal of Arak University of Medical Sciences*. 2021;24(5):730-47. [DOI]

13. Teymouri Yeganeh L. Causal Modeling of the Relationship between Health-promoting Lifestyle and Nurses' Self-efficacy and Psychological Well-being. *Journal of Health and Hygiene*. 2022;13(3):441-53. [DOI]

14. Steptoe A, Deaton A, Stone AA. Subjective wellbeing, health, and ageing. *The Lancet*. 2015;385(9968):640-8. [PMID: 25468152] [DOI]

15. Rajkumar RP. Harnessing the Neurobiology of Resilience to Protect the Mental Well-Being of Healthcare Workers During the COVID-19 Pandemic. *Frontiers in Psychology*. 2021;12. [PMID: 33815205] [PMCID: PMC8012770] [DOI]

16. Templer DI, Awadalla A, Al-Fayez G, Frazee J, Bassman L, Connelly HJ, et al. Construction of a Death Anxiety Scale-

- Extended. OMEGA - Journal of Death and Dying. 2006;53(3):209-26. [DOI]
17. Heidari A, Arefi M, Amiri H. The Predictive Model of Elderly Psychological Well-being Based on Personality With the Mediation of Self-care, Spiritual Experiences, and Death Anxiety. *Avicenna Journal of Neuropsychophysiology*. 2019;6(2):91-102. [DOI]
18. Majdabadi Z. Psychological Well-Being Scales (Persian Version). *Journal of Developmental Psychology Iranian Psychologists*. 2015;45(12):102-99.
19. Mohammadi Zeidi I, Pakpour Hajiagha A, Mohammadi Zeidi B. Reliability and Validity of Persian Version of the Health-Promoting Lifestyle Profile. *Journal of Mazandaran University of Medical Sciences*. 2011;20(1):102-13.
20. Özer Ö, Özkan O, Özmen S, Erçoban N. Investigation of the Effect of COVID-19 Perceived Risk on Death Anxiety, Satisfaction With Life, and Psychological Well-Being. *OMEGA - Journal of Death and Dying*. 2023;87(2):572-90. [PMID: 34148401] [DOI]
21. Kesebir P. A quiet ego quiets death anxiety: Humility as an existential anxiety buffer. *Journal of Personality and Social Psychology*. 2014;106(4):610-23. [PMID: 24660992] [DOI]
22. Routledge C, Juhl J. When death thoughts lead to death fears: Mortality salience increases death anxiety for individuals who lack meaning in life. *Cognition and Emotion*. 2010;24(5):848-54. [DOI]
23. Peters L, Cant R, Payne S, O'Connor M, Mcdermott F, Hood K, et al. How death anxiety impacts nurses' caring for patients at the end of life: a review of literature. *The open nursing journal*. 2013;7:14. [PMID: 23400515] [PMCID: PMC3565229] [DOI]
24. Patel N, Kellezi B, Williams A. Psychological, social and welfare interventions for psychological health and well-being of torture survivors. *Cochrane Database of Systematic Reviews*. 2014(11). [DOI]