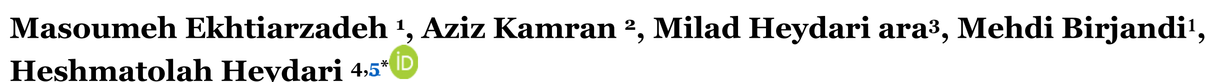
INTERDISCIPLINARY Journal of ACUTE CARE

Interdisciplinary Journal of Acute Care
Volume 5, July/December 2024, Issue 2, pp.80-89
Journal homepage: www.ijac.lums.ac.ir

The Association Between Social Support and Spirituality with Death Anxiety among the Elderly in Khorramabad During COVID-19 Pandemic



Masoumeh Ekhtiarzadeh [1], Aziz Kamran [2], Milad Heydari ara[3], Mehdi Birjandi[1], Heshmatolah Heydari [4,5*]

[1] Social Determinants of Health Research Center, Lorestan University of Medical Sciences, Khorramabad, Iran
[2]Public Health Department, Khalkhal Faculty of Medical Sciences, Ardabil University of Medical Sciences, Ardabil, Iran
[3] School of Health, Hamadan University of Medical Sciences, Hamadan, Iran
[4] Social Determinants of Health Research Center, School of Nursing and Midwifery, Lorestan University of Medical Sciences, Khorramabad, Iran
[5]French Institute of Research and High Education (IFRES-INT), Paris, France.

ABSTRACT

Death anxiety can adversely impact the lives and mental health of the elderly. Identifying the factors influencing death anxiety in the elderlies is essential for managing and preventing this phenomenon. This study aimed to examine the relationship between social support, spirituality, and death anxiety among elderly individuals in Khorramabad during the COVID-19 pandemic. A cross-sectional descriptive-analytical study was conducted with 200 elderly participants in Khorramabad in 2021. Data were collected using Phillips' Perceived Social Support Survey, Pulotzin Spiritual Well-being Scale, and Templer Death Anxiety Scale. SPSS v.19 software was employed for data analysis, utilizing appropriate descriptive and inferential statistics. The mean and standard deviation of death anxiety, spiritual well-being, and adequate social support among the participants were 2.97±3.77, 105.36 ± 9.68, and 99.62 ± 12.36, respectively. Stepwise regression analysis revealed that spirituality (B = - 0.05, P = 0.036), aging (B = - 0.08, P = 0.008), and a history of chronic diseases (B = - 0.982, P = 0.025) significantly reduced death anxiety among the elderly. Despite the challenges posed by COVID-19, death anxiety remains low among the elderly. Further research is warranted to identify the determinants and predictors of death anxiety in this population. It is also recommended to implement necessary measures and interventions to manage and reduce death anxiety in the elderly.

Keywords: Social support; Spirituality; Death anxiety; Aged; COVID-19

Introduction

In late December 2019, a novel member of the coronavirus family, SARS-COV-2, caused an outbreak of pneumonia in Wuhan, China [1], which subsequently became a pandemic within a few months [2, 3]. Various protocols and mandatory constraints have been implemented to curb the spread of the coronavirus, including strict quarantine regulations, which have imposed significant psychological pressure on patients, health professionals, and the general public [4, 5].

The COVID-19 pandemic has affected all aspects of human life, including psychological and physical well-being [6]. Among the groups most vulnerable to COVID-19 are the elderly [7], who often suffer from weakened immune systems and concomitant chronic diseases [8]. According to a study, although individuals over the age of 70 comprised approximately 12% of

* *Corresponding author:* Heshmatolah Heydari. Social Determinates of Health Research Center, Lorestan University of Medical Sciences, Khorramabad, Iran. E-mail: H-hidari@razi.tums.ac.ir
DOI: 10.22087/ijac.2024.508283.1052
This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

COVID-19 patients, they accounted for more than 50% of deaths due to the disease [9]. Statistics on the mortality rate among the elderly diagnosed with COVID-19 indicate that the presence of underlying diseases can increase mortality in this population, with the highest mortality rate observed in elderly individuals with COVID-19 and concomitant comorbidities [10].

Research has demonstrated that older adults are more likely to experience anxiety and distress due to low self-esteem, reduced activity and mobility, loss of friends, diminished financial and physical independence, and chronic illnesses. A prevalent form of anxiety in this demographic is death anxiety [11, 12]. The prevalence of death anxiety is 16% in the general population [13]; however, this rate has significantly increased following the COVID-19 outbreak, affecting not only older adults but also the general public [14].

Death anxiety is characterized by an intense fear of death, often accompanied by panic or anxiety when contemplating the process of dying or events related to the afterlife [15]. Excessive death anxiety can result in maladaptive behaviors, exacerbate stressful situations, and lead to feelings of emptiness and hopelessness [16]. In older adults, death anxiety may be influenced by personality traits and environmental factors [17]. Research indicates that individuals with a positive outlook on life tend to experience lower levels of death anxiety [18], whereas feelings of despair, low perceived social support, loneliness, and isolation can exacerbate it [19, 20]. During the COVID-19 pandemic, social isolation was a critical measure to control the spread of the virus, which consequently heightened feelings of loneliness among the elderly [17]. Several studies have suggested that social support is closely linked to the level of death anxiety experienced during the pandemic [21, 22].

Social support is defined as the receipt of affection, companionship, care, respect, attention, and assistance from family, friends, and others [23]. The elderly often face loneliness and social isolation, conditions that were intensified during the COVID-19 pandemic [21, 24]. Additionally, spirituality can significantly impact the mental health of older adults [16].

Spirituality involves an individual's inclination to seek meaning and purpose in life, serving as an intrinsic force that encourages individuals to transcend personal interests and pursue life-transcendent experiences [25, 26]. Spirituality can aid the elderly in overcoming stress, psychological distress, and death anxiety by reinforcing their belief in the afterlife, enhancing life satisfaction, and fostering a sense of purpose [27]. One study found that religious adaptation and spirituality can predict levels of death anxiety [26]. Engaging in spirituality-related activities can serve as adaptive strategies to manage critical and uncontrollable situations, such as the COVID-19 pandemic, by fostering trust in a higher power and engaging in prayer [26].

Although numerous studies have asserted that social support and spirituality can effectively reduce death anxiety, this phenomenon may vary depending on cultural and demographic contexts, such as gender, marital status, familial relationships, and age, as supported by various theories [26, 28-31]. The COVID-19 pandemic has altered social norms and structures, with different countries and regions experiencing varying frequencies and intensities of health directives based on the severity of the pandemic's waves. It appears that social support and spirituality can independently influence death anxiety among older adults, which may also be affected by other demographic and contextual factors. Identifying the factors contributing to death anxiety during the COVID-19 outbreak can inform the development of appropriate strategies and interventions to mitigate this anxiety in the elderly during ongoing and future crises. Consequently, this study aimed to examine the relationship between social support and spirituality and death anxiety among the elderly in Khorramabad during the COVID-19 pandemic.

Materials and Methods

This cross-sectional descriptive-analytical study was conducted on individuals aged over 60 years in Khorramabad City, Iran, in 2021. Utilizing linear regression and considering 12 independent variables (10 subjects per independent variable), the sample size was determined to be 120 + 41 = 161, with parameters r = -0.48, β = 0.1, and α = 0.05. Accounting for a 20% dropout rate, the final sample size was adjusted to 200 [23].

Participants were recruited through systematic multi-stage cluster sampling. Khorramabad was divided into three clusters: north, center, and south. Subsequently, an urban, comprehensive community health center was randomly selected within each cluster, and all health posts associated with that center were categorized. Elderly individuals were identified within each health post, and samples were systematically selected based on the allocated quota.

Inclusion criteria comprised age > 60 years, willingness to participate, awareness of place and time, communication ability, and adherence to health protocols. The exclusion criterion was the incomplete completion of the questionnaire. Literate participants completed the questionnaires independently, while the researcher assisted illiterate participants by reading the questions and recording their responses.

Data Collection Tools

Data collection was accomplished using four questionnaires. The first questionnaire gathered demographic information, including sex, marital status, education level, occupation, living conditions, family size, comorbidities, COVID-19 status, and history of COVID-19. The second questionnaire assessed perceived social support using Phillips' Perceived Social Support Survey, which consists of 23 questions on a 5-point Likert scale ranging from very low to very high, with scores ranging from 23 to 115. Scores of 23-35 indicated low perceived social support, 36-70 indicated moderate perceived social support, and scores of 70 or higher indicated satisfactory perceived social support. The validity and reliability of the Persian version of this questionnaire have been confirmed in previous studies, with a Cronbach's alpha coefficient of 0.79 [32].

The third questionnaire evaluated participants' spiritual status using the Pulotzin and Elison Spiritual Well-being Scale [33]. This instrument comprises 20 items on a 6-option Likert scale (from poor spirituality with a score of 1 to excellent spirituality with a score of 6). The score range of this questionnaire is 20 to 120, with scores of 20-40, 41-99, and 100-120 indicating poor, moderate, and desirable spiritual well-being, respectively. The validity and reliability of the Persian version of this questionnaire have been confirmed in previous studies, with a Cronbach's alpha coefficient of 0.85 [34].

The fourth component of the instrument assessed death anxiety using the Templer Death Anxiety Scale [35], which consists of 15 questions scored on a binary scale, with responses of yes (score 1) and no (score 0). The total scores obtained from this questionnaire ranged from 0 to 15, with scores of 0-7 and 8-15 indicating low and high death anxiety, respectively. The validity and reliability of the Persian version of this questionnaire have been confirmed in the study by Nia et al., with a Cronbach's alpha coefficient of 0.89 [36].

Data analysis

SPSS statistical software version 19 was used for the data analysis. The results of quantitative variables are reported as mean ± standard deviation, and qualitative variables are reported as number (percentage). The chi-square test was used to assess the relationship between the qualitative variables. After evaluating the normality of the data based on the Kolmogorov test and graphical methods, an independent t-test was used to compare quantitative responses between the two groups, and a one-way analysis of variance test was used between more than two groups. Pearson's correlation coefficient was used to evaluate the linear correlation between the two quantitative variables, and multiple linear regression with the stepwise method was used to examine the relationship between

demographic variables and Fear of Death, Spiritual Health, and Social Support. The significance level was considered to be 0.05.

Ethical Consideration

The study adhered to principles of anonymity and confidentiality. Participants provided informed consent and retained the right to withdraw from the study at any point. The research received approval from the Lorestan University of Medical Sciences Ethics Committee (Code: IR.LUMS.REC.1400.026).

Results

In this investigation, 200 questionnaires were distributed to elderly participants, of which 14 were returned incomplete (i.e., dropout). Consequently, data from 186 questionnaires were analyzed. Among the respondents, 47.3% were male, 74.7% were married, and 87.6% resided with their families. A majority of the elderly participants (60.2%) reported having at least one chronic disease, and 27.4% had previously contracted COVID-19, with 3.2% continuing to experience COVID-related complications (Table 1).

Data analysis revealed that the mean and standard deviation of death anxiety among the elderly were 3.77±2.97. Participants demonstrated a commendable mean score for spiritual well-being (105.36 ± 9.68) and received satisfactory social support (99.62± 12.36). Individuals possessing diplomas or higher educational qualifications exhibited a significantly higher mean score of death anxiety compared to those with lower educational attainment or illiteracy (4.60 ± 2.51, P-value = 0.039). Regarding occupational status, retired elderly individuals had a higher mean score of death anxiety (4.37 ± 2.75) compared to other occupational categories, which was statistically significant (P-value = 0.039) (Table 2).

The correlation between death anxiety and spiritual health was -0.15, indicating a very weak yet significant inverse relationship between these variables. Additionally, the Pearson correlation coefficient between social support and spiritual health was 0.49, signifying a moderate and significant positive correlation ($P<0.001$). No significant correlation was observed between death anxiety and social support ($P=0.139$).

Stepwise regression analysis indicated that spiritual well-being could mitigate death anxiety; specifically, each unit increase in the mean score of spiritual health corresponded to a 0.05 unit decrease in death anxiety, which was statistically significant ($P = 0.036$, R2=0.02)

Table 1. Frequency of Demographic Variables Among Participants

Variables	Levels	Number	Percent	Variables	Levels	Number	Percent
Sex	Male	88	47.3	Suffering from COVID-19	Yes	6	3.2
	Female	98	52.7		No	180	96.8
Marital status	Single	46	25.3	History of COVID-19	Yes	51	27.4
	Married	139	74.7		No	135	72.6
Education level	Illiterate	114	61.3	Family size	1	49	26.34
	Literate	42	22.6		2	64	34.5
	Diploma and upper	30	16.1		≥ 3	73	39.24
Job	Retired	58	31.2	Comorbidities	Yes	112	60.2
	Unemployed	30	16.1		No	74	39.8
	Other	98	52.7	Living conditions	With family	163	87.6
					Alone	23	12.4

Table 2. Comparison of the mean scores of Fear of Death, Spiritual Health, and Social Support based on demographic variables

Variables	Levels	Death Anxiety		Spiritual Health		Social Support	
		Mean±SD	P-Value	Mean±SD	P-Value	Mean±SD	P-Value
Total Scor	Total Scor	3.77±2.97	-	105.36±9.68	-	99.62±12.36	-
Gender	Male	3.84±2.73	0.791	105.44±9.08	0.918	100.89±11.81	0.184
	Female	3.72±3.18		105.29±10.23		98.47±12.79	
Marital status	Single	3.89±3.03	0.117	105.39±9.80	0.409	99.36±11.96	0.971
	Married	3.87±2.97		105.08±9.78		99.74±12.44	
	Other	1.77±2.10		109.55±7.05		98.88±14.13	
Education	Illiterate	3.34±3.15	0.039	105.50±10.04	0.652	98.98±12.51	0.439
	Literate	4.38±2.58		106.0±9.70		101.78±11.92	
	Diploma and upper	4.60±2.51		103.93±8.28		99.03±12.46	
Job	Retired	4.37±2.75	0.039	104.03±10.09	0.427	99.70±13.33	0.754
	Unemployed	4.33±2.75		105.43±8.75		98.10±8.47	
	Other	3.25±3.09		106.13±9.70		100.04±12.83	
Living conditions	With family	3.84±2.99	0.458	105.06±9.81	0.255	99.44±12.36	0.607
	Alone	3.34±2.87		107.52±8.53		100.86±12.55	
Family size	1	3.30±2.91	0.053	107.08±8.60	0.404	100.47±12.84	0.683
	2	3.18±2.50		106.6±9.92		100.46±12.08	
	≥ 3	4.27±3.20		104.51±9.76		98.87±12.51	
Comorbidities	Yes	4.08±2.90	0.081	104.45±10.27	0.115	99.23±12.90	0.597
	No	3.31±3.03		106.74±8.59		100.21±11.57	
Suffering from COVID-19	Yes	3.16±2.13	0.609	97.66±7.20	0.047	94.50±8.91	0.303
	No	3.80±2.99		105.62±9.66		99.79±12.44	
History of COVID-19	Yes	4.01±2.75	0.500	105.15±9.33	0.857	101.76±11.47	0.147
	No	3.68±3.05		105.44±9.84		98.81±12.63	

Table 3. Mean and SD Correlation Matrix of Research Variables

Variables	Mean±SD	1	2	3
Death Anxiety (1)	3.77±2.97	1	-.15(P=0.036)	-.11(P=0.139)
Spiritual Health (2)	105.36±9.68	-0.15(P=0.036)	1	0.49(P<0.001)
Social Support (3)	99.62±12.36	-.11(P=0.139)	0.49(P<0.001)	1

Similarly, stepwise regression analysis suggested that social support could alleviate death anxiety, with each unit increase in social support score resulting in a 0.01 unit decrease in death anxiety; however, this finding was not statistically significant (P =0.601, R2=0.02). After adjusting for other demographic and contextual variables, no significant relationship between social support, spiritual health, and death anxiety was identified (p>0.05, R2=0.09).

Table 4. Regression of Death Anxiety Model Based on Spiritual Health and Perceived Social Support Components

	Predictive variables	B	SE. B	T	P-Valu
Model 1	Spiritual Health	-0.05	2.367	-2.116	0.36
Model 2	Spiritual Health	-0.041	0.026	-1.585	0.115
	Social Support	-0.011	0.20	-.523	0.601
Model 3	Spiritual Health	-0.007	0.027	0.259	0.796
	Social Support	-0.026	0.020	-1.313	0.191
	Age	-.083	0.031	-2.694	0.008
	Sex	0.410	0.525	0.782	0.435
	Marriage	0.028	0.231	0.123	0.902
	Literacy	0.396	0.309	1.283	0.201
	Family size	0.332	0.1620	2.046	0.42
	Life status	0.367	0.999	0.367	0.714
	Underline disease	-0.982	0.434	-2.262	0.025
	Infected with COVID	1.492	1.220	1.223	0.223
	History of COVID-19	-0.489	0.482	-1.015	0.312

Assuming constancy of other variables, death anxiety decreased by an average of 0.08 units per year, which was statistically significant. Regarding underlying diseases, an increase in such conditions, assuming other variables remained constant, was associated with a significant reduction in death anxiety by an average of 0.982 units. In the context of COVID-19 contraction, assuming other variables remained constant, death anxiety increased by an average of 1.492 with each day post-COVID-19 contraction, though this was not statistically significant. Finally, a history of COVID-19 contraction, assuming constancy of other variables, resulted in a decrease in death anxiety by an average of 0.489, which was not statistically significant (Table 4).

Discussion

The findings indicate that the elderly participants in this study demonstrated low levels of death anxiety. One systematic review revealed moderate to high levels of death anxiety among Iranian elderly individuals prior to the COVID-19 pandemic [37].

Furthermore, another systematic review indicated that the elderly experienced heightened death anxiety during the COVID-19 pandemic [38]. In comparison to studies assessing death anxiety among the elderly during the pandemic in other regions [24, 39], the reduced death anxiety may be attributed to modifications in geriatric health provision protocols. Iran's health system is structured to deliver health services at three preventive levels: primary, secondary, and tertiary. Comprehensive health centers serve as the initial point of contact for urban populations, with each center responsible for providing healthcare to a designated population size [40]. Under normal circumstances, these centers often face staffing shortages. Following several waves of COVID-19, Iran's Ministry of Health implemented a neighborhood-oriented health provision strategy, organizing volunteer teams of doctors, nurses, health experts, and benefactors in comprehensive health centers. This strategy included home visits, home care, screening, patient detection, treatment counseling, and disease monitoring, with a particular focus on the elderly, who were prioritized for COVID-19 vaccination [41]. These services likely facilitated the elderly's

access to healthcare and reduced their death anxiety. Although other studies have corroborated the benefits of this structure in effectively delivering health services [42], these effects have been limited to the pandemic period, necessitating further research.

The findings also revealed that retired older adults experienced higher levels of death anxiety. Consistent with this finding, Sadeghi et al. reported that death anxiety can be influenced by occupation, with working older individuals experiencing lower death anxiety than retired adults [43], potentially due to their loneliness [44], exacerbated by prolonged lockdowns and quarantine measures.

The data further indicate that individuals with higher literacy levels experienced increased death anxiety. In alignment with these findings, Ghiyasi et al. reported that individuals with higher literacy levels experienced more severe death anxiety [45]. This phenomenon may be attributed to literate individuals' heightened risk perception, as a deeper understanding of a threatening event can lead to more pronounced anxiety.

According to the findings, no significant association was identified between marital status and death anxiety among older adults. Conversely, a study conducted in Iran indicated that single elderly individuals experienced higher levels of death anxiety compared to their married counterparts [46]. Another study suggested that marital status could influence the degree of death anxiety among older adults during the COVID-19 pandemic, with widowed individuals exhibiting significantly higher death anxiety than those who were divorced. Furthermore, elderly individuals who were married but separated for more than one month experienced significantly higher death anxiety than their divorced or single peers [47]. These discrepancies may be attributed to cultural differences between countries or regions within the same country.

The findings also revealed a decline in death anxiety with advancing age among the elderly, indicating higher levels of death anxiety in the younger elderly population. In contrast, the study by Guner et al. demonstrated that death anxiety increases with age [24]. The higher death anxiety observed in younger elderly individuals compared to their older counterparts may be due to differences in life expectancy [45], social life activities, and the inability of younger individuals to engage in physical activities and expend energy during the COVID-19 pandemic. Other studies have linked death anxiety in older age to a higher mortality rate among these individuals [48].

The data from this study indicated that the elderly participants received satisfactory social support during the COVID-19 pandemic. Consistent with these findings, a previous study reported that Iranian elderly individuals received substantial social support prior to the COVID-19 pandemic [49]. However, a study by Guner et al. in Turkey revealed that older individuals experienced feelings of loneliness during the COVID-19 pandemic [24]. Other studies have asserted that nearly one-third of the elderly often or always feel lonely and socially isolated [50, 51]. The variable of perceived social support in different areas may reflect cultural and dependency variabilities among individuals in different regions [52, 53]. In Khorramabad City, where the present study was conducted, altruism and support for the elderly and vulnerable are social priorities, with most older individuals receiving support from their families. During COVID-19, perceived social support may have also been influenced by regular contact with and services from volunteer health providers working within the neighborhood-oriented plan in comprehensive health centers.

The findings showed an inverse relationship between social support and death anxiety. However, this relationship was not statistically significant. One study in Iran reported that death anxiety among older adults during the COVID-19 pandemic significantly decreased with increased social support [54]. Feelings of loneliness and anxiety are consequences of COVID-19, and to mitigate loneliness and alleviate anxiety, it is recommended to enhance their communication with friends, colleagues, and family members and engage in discussions about news and other events via social media. [55]. The findings indicate that older adults

exhibit a high level of spirituality, which is significantly associated with reduced death anxiety. This suggests that enhanced spirituality may alleviate death anxiety in the elderly. Consistent with these results, other studies have demonstrated that spirituality can mitigate anxiety in the elderly, and spiritual interventions may promote peace of mind [37, 56-58]. Spirituality and mental health are recognized as critical predictors of death anxiety among older adults [59]. The present study reveals a reduction in death anxiety in conjunction with the presence of chronic diseases or a history of COVID-19 infection. In this context, one study suggests that death anxiety may be influenced by an individual's attitude towards COVID-19, their mental proximity to death, and their history of contracting the virus [38]. Conversely, research by Guner et al. indicates that individuals with chronic disorders experience heightened death anxiety [24]. The prevalence of death anxiety among the elderly is likely attributable to various physical issues, chronic illnesses, mobility disorders, physical disabilities, and dependence on others [44, 60]. The observed lower death anxiety in those with a history of COVID-19 infection may be attributed to the challenges posed by the disease and the development of adaptive skills. Additionally, death anxiety may stem from the uncertainty surrounding the afterlife or negative perceptions of the burial process for COVID-19 victims. Consequently, psychological and spiritual counseling for COVID-19 patients, aimed at elucidating the life and death process as an inevitable reality, may help alleviate anxiety to some extent.

The study also found that an increase in the duration of COVID-19 infection correlates with heightened death anxiety, corroborating a systematic review that reported increased death anxiety during the COVID-19 pandemic [38]. One research revealed that the circumstances surrounding death and the burial process induced fear and panic, which, coupled with attachment, loneliness, and unfamiliarity with death, exacerbated stress, anxiety, and fear of death [61]. Another found that death anxiety was elevated in COVID-19 patients, attributed to the disease's high transmission, morbidity, and mortality rates, quarantine restrictions, disruption of routine lifestyles, and the absence of a specific treatment [62], as well as social distancing measures and limitations on family visits [63].

Conclusion

Despite the challenges and restrictions imposed by the COVID-19 pandemic, the study found that death anxiety was relatively low among the elderly. Furthermore, the study population reported satisfactory levels of spiritual well-being and social support, with spiritual health significantly reducing death anxiety in older adults. Additionally, factors such as age, marital status, employment status, literacy level, and history of chronic illnesses may influence death anxiety.

This study revealed that a longer course of COVID-19 could increase death anxiety in the elderly. Therefore, it is necessary to minimize the duration of the disease in the elderly by employing effective care and management methods. Considering that retired and literate elderly people reported a higher level of death anxiety, it is suggested to investigate the determinants and predictors of death anxiety and employ appropriate therapeutic measures to alleviate it in this group.

Declaration of conflict interests

We do not have any competing financial and non-financial interests.

Funding

The research Deputy at Lorestan University of Medical Sciences supported all sections of the study, and the writing of the manuscript.

Acknowledgments

The authors would like to thank all individuals who supported and helped them conduct this study.

References

1. Zheng J. SARS-CoV-2: an emerging coronavirus that causes a global threat. International journal of biological sciences. 2020 Mar 15;16(10):1678.

2. Lu R, Zhao X, Li J, Niu P, Yang B, Wu H, et al. Genomic characterisation and epidemiology of 2019 novel coronavirus: implications for virus origins and receptor binding. The lancet. 2020 Feb 22;395(10224):565-74..

3. Zhai P, Ding Y, Wu X, Long J, Zhong Y, Li Y. The epidemiology, diagnosis and treatment of COVID-19. International journal of antimicrobial agents. 2020 May 1;55(5):105955.

4. Li W, Yang Y, Liu ZH, Zhao YJ, Zhang Q, Zhang L, et al. Progression of mental health services during the COVID-19 outbreak in China. International journal of biological sciences. 2020 Mar 15;16(10):1732..

5. Xiao C. A novel approach of consultation on 2019 novel coronavirus (COVID-19)-related psychological and mental problems: structured letter therapy. Psychiatry investigation. 2020 Feb 25;17(2):175.

6. Holmes EA, O'Connor RC, Perry VH, Tracey I, Wessely S, Arseneault L, et al. Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. The lancet psychiatry. 2020 Jun 1;7(6):547-60.

7. Pfefferbaum B, North CS. Mental health and the Covid-19 pandemic. New England journal of medicine. 2020 Aug 6;383(6):510-2.

8. Li JY, You Z, Wang Q, Zhou ZJ, Qiu Y, Luo R, Ge XY. The epidemic of 2019-novel-coronavirus (2019-nCoV) pneumonia and insights for emerging infectious diseases in the future. Microbes and infection. 2020 Mar 1;22(2):80-5.

9. Nikolich-Zugich J, Knox KS, Rios CT, Natt B, Bhattacharya D, Fain MJ. SARS-CoV-2 and COVID-19 in older adults: what we may expect regarding pathogenesis, immune responses, and outcomes. Geroscience. 2020 Apr;42:505-14.

10. Guan WJ, Ni ZY, Hu Y, Liang WH, Ou CQ, He JX, et al. Clinical characteristics of coronavirus disease 2019 in China. New England journal of medicine. 2020 Apr 30;382(18):1708-20..

11. Stancliffe RJ, Wiese MY, Read S, Jeltes G, Clayton JM. Knowing, planning for and fearing death: Do adults with intellectual disability and disability staff differ?. Research in developmental disabilities. 2016 Feb 1;49:47-59.

12.Bahrami, N., et al., Death anxiety and its relationship with quality of life in women with cancer. Iran Journal of Nursing, 2013. 26(82): p. 51-61.

13. Taghiabadi M, Babaie K, Mehrabi T, Shaermoghadam S, Mirhafez SR. Association between death anxiety and various aspects of spiritual experiences among elderly people in Iran. Medical Science. 2018;22(93):478-83.

14. Chalhoub Z, Koubeissy H, Fares Y, Abou-Abbas L. Fear and death anxiety in the shadow of COVID-19 among the Lebanese population: A cross-sectional study. Plos One. 2022 Jul 27;17(7):e0270567.

15. Gordon R. Dying and creating: A search for meaning. 2018: Routledge.

16. Sargent-Cox KA, Anstey KJ, Luszcz MA. Longitudinal change of self-perceptions of aging and mortality. Journals of Gerontology Series B: Psychological Sciences and Social Sciences. 2014 Mar 1;69(2):168-73.

17. Zou L, Ruan F, Huang M, Liang L, Huang H, Hong Z, et.al. SARS-CoV-2 viral load in upper respiratory specimens of infected patients. New England journal of medicine. 2020 Mar 19;382(12):1177-9.

18. Azarian A, Aghakhani S, Ashuri A. Investigating the relationship between death anxiety and attitude towards life among university students. International Journal of Medical Research & Health Sciences. 2016 Jan 1;5(5):233-8.

19. Menzies RE, Menzies RG. Death anxiety in the time of COVID-19: Theoretical explanations and clinical implications. The Cognitive Behaviour Therapist. 2020 Jan;13:e19.

20.Greenblatt-Kimron L, Kestler-Peleg M, Even-Zohar A, Lavenda O. Death anxiety and loneliness among older adults: Role of parental self-efficacy. International Journal of Environmental Research and Public Health. 2021 Sep 18;18(18):9857.

21. Guner TA, Erdogan Z, Demir I. The effect of loneliness on death anxiety in the elderly during the COVID-19 pandemic. OMEGA-journal of Death and Dying. 2023 May;87(1):262-82.

22. Rostami P, Ebrahimi LS, Asl AM, Allahverdipour H. The relationship between feeling of loneliness, source of control, and intolerance of ambiguity with death anxiety in the elderly during the COVID-19 era. Medical Journal of Tabriz University of Medical Sciences. 2023 Dec 31;45(6):528-38.

23. Sun N, Wei L, Shi S, Jiao D, Song R, Ma L, et al. A qualitative study on the psychological experience of caregivers of COVID-19 patients. American journal of infection control. 2020 Jun 1;48(6):592-8.

24. Guner TA, Erdogan Z, Demir I. The effect of loneliness on death anxiety in the elderly during the COVID-19 pandemic. OMEGA-journal of Death and Dying. 2023 May;87(1):262-82.

25. Sharma P, Asthana HS, Gambhir IS, Ranjan JK. Death Anxiety among Elderly People: Role of Gender, Spirituality and Mental Health. Indian Journal of Gerontology. 2019 Jun 1;33(3).

26. Rababa M, Hayajneh AA, Bani-Iss W. Association of death anxiety with spiritual well-being and religious coping in older adults during the COVID-19 pandemic. Journal of religion and health. 2021 Feb;60(1):50-63.

27. Garssen B, Uwland-Sikkema NF, Visser A. How spirituality helps cancer patients with the adjustment to their disease. Journal of religion and health. 2015 Aug;54:1249-65.

28. Torres Z, Oliver A, Fernández I. Older adults' mental health during the COVID-19 pandemic: The association with social networks. Social Networks. 2024 Jul 1;78:164-72.

Kinser PA, Lyon DE. A conceptual framework of stress vulnerability, depression, and health outcomes in women: potential uses in research on complementary therapies for depression. Brain and behavior. 2014 Sep;4(5):665-74.

30. Oh DH, Park JH, Lee HY, Kim SA, Choi BY, Nam JH. Association between living arrangements and depressive symptoms among older women and men in South Korea. Social psychiatry and psychiatric epidemiology. 2015 Jan;50:133-41.

31. Pandey A, Sharma CK, Chapagain RH, Adhikari K, Devkota N, Pant S, Ranabhat K. An Online Survey on Stress, Anxiety, Depression and their Associated Factors among Health Care Workers during COVID-19 Pandemic in Nepal. Technical Report; 2020 Jun.

32. Izadi S, Khamehvar A, Aram SS, Yazdanpanah Nozari A. Social support and quality of life of elderly people admitted to rehabilitation centers. Journal of Mazandaran University of Medical Sciences. 2013 Oct 10;23(105):101-9.

33. Paloutzian RF, Ellison CW. Manual for the spiritual well-being scale. Nyack, NY: Life Advance. 1991 May;9:35-48.

34. Abhari MB, Fisher JW, Kheiltash A, Nojomi M. Validation of the Persian version of spiritual well-being questionnaires. Iranian journal of medical sciences. 2018 May;43(3):276.

35.Templer, D.I., The construction and validation of a Death Anxiety Scale. J Gen Psychol, 1970. 82(2d Half): p. 165-77.

36. Nia HS, Ebadi A, Lehto RH, Mousavi B, Peyrovi H, Chan YH. Reliability and validity of the persian version of templer death anxiety scale-extended in veterans of Iran–Iraq warfare. Iranian journal of psychiatry and behavioral sciences. 2014;8(4):29.

37. Khalvati M, Babakhanian M, Khalvati M, Nafei A, Khalvati M, Ghafuri R. Death anxiety in the elderly in Iran: A systematic review and meta-analysis. Iranian Journal of Ageing. 2021 Jul 10;16(2):152-71.

38. Özgüç S, Kaplan Serin E, Tanriverdi D. Death anxiety associated with coronavirus (COVID-19) disease: A systematic review and meta-analysis. OMEGA-Journal of Death and Dying. 2024 Feb;88(3):823-56.

39. Zhang J, Peng J, Gao P, Huang H, Cao Y, Zheng L, Miao D. Relationship between meaning in life and death anxiety in the elderly: self-esteem as a mediator. BMC geriatrics. 2019 Dec;19:1-8.

40. Negarandeh R, Pashaeypoor S, Theofanidis D, Heydari H. Stakeholders' Perceptions of Challenges in the Public Health Nursing Practicum: A Qualitative Study. Journal of Client-Centered Nursing Care. 2021 Nov 10;7(4):285-94.

41. Tabrizi JS, Raeisi A, Namaki S. Primary health care and COVID-19 Pandemic in the Islamic Republic of Iran. Depiction of Health. 2022 Feb 9;13(Suppl 1):S1-10.

42. Hojjat-Assari S, Rassouli M, Kaveh V, Heydari H. Explaining health care providers' perceptions about the integration of palliative care with primary health care; a qualitative study. BMC Primary Care. 2022 Sep 7;23(1):226.

43. Sadeghi A, Mohamadzadeh M, Shoraka HR, Pirouzeh R, Rahimi Khalifeh Kandi Z. The relationship between the perception of aging and death anxiety in the older adults of eastern Iran during COVID-19. Health & Social Care in the Community. 2024;2024(1):3236251.

44. Menzies RE, Menzies RG. Death anxiety in the time of COVID-19: Theoretical explanations and clinical implications. The Cognitive Behaviour Therapist. 2020 Jan;13:e19.

45.Ghiyasi, M., et al., Investigating the relationship between health literacy level and death anxiety in the elderly in province in 2019. Journal of Critical Reviews, 2020. 7(10): p. 640-644.

46. Rayatpisheh F, Torabizadeh C, Najafi Kalyani M, Farsi Z. Relationship between resilience and death anxiety of the older adults during the coronavirus disease 2019 (COVID-19) pandemic. BMC geriatrics. 2023 Jun 15;23(1):367.

47. Yang D, Xia Y, Wu W, Feng Y, Liang J, Zhang J. Death Anxiety during COVID-19 and its Related Factors among Chinese Elderly People. OMEGA-Journal of Death and Dying. 2023 Mar 13:00302228231157446.

48. Yanez ND, Weiss NS, Romand JA, Treggiari MM. COVID-19 mortality risk for older men and women. BMC public health. 2020 Nov 19;20(1):1742.

49. Ebrahimi B, Hosseini M, Rashedi V. The relationship between social support and death anxiety among the elderly. Elderly Health Journal. 2018 Dec 30.

50. Jansson AH, Savikko NM, Pitkälä KH. Training professionals to implement a group model for alleviating loneliness among older people–10-year follow-up study. Educational Gerontology. 2018 Mar 4;44(2-3):119-27.

51. Savikko N, Routasalo P, Tilvis RS, Strandberg TE, Pitkälä KH. Predictors and subjective causes of loneliness in an aged population. Archives of gerontology and geriatrics. 2005 Nov 1;41(3):223-33.

52. Razgulin J, Argustaitė-Zailskienė G, Šmigelskas K. The role of social support and sociocultural adjustment for international students' mental health. Scientific reports. 2023 Jan 17;13(1):893.

53. Vlachantoni A, Evandrou M, Falkingham J, Qin M. The impact of changing social support on older persons' onset of loneliness during the COVID-19 pandemic in the United Kingdom. The Gerontologist. 2022 Oct 1;62(8):1147-59.

54.HamidiR, Ghodsi P,Taghiloo S. Developing a Model of Death Anxiety Based on Perceived Social Support with the Mediation of Psychological Well-being in the Elderly with COVID-19 Experience. Journal of Assessment and Research in Applied Counseling (JARAC). 2024;6(3):44-55.

55. Hiremath P, Kowshik CS, Manjunath M, Shettar M. COVID 19: Impact of lock-down on mental health and tips to overcome. Asian journal of psychiatry. 2020 Apr 10;51:102088.

56. Saleem T, Saleem S. Religiosity and death anxiety: A study of Muslim dars attendees. Journal of religion and health. 2020 Feb;59(1):309-17.

57. Kang KA, Im JI, Kim HS, Kim SJ, Song MK, Sim SY. The effect of logotherapy on the suffering, finding meaning, and suffering, well-being of adolescents with terminal cancer. Child Health Nursing Research. 2009;15(2):136-44.

58. Hajihasani M, Naderi N. Death anxiety in the elderly: The role of spiritual health and perceived social support. Aging Psychology. 2021 Jan 20;6(4):319-09.

59. Rababa M, Hayajneh AA, Bani-Iss W. Association of death anxiety with spiritual well-being and religious coping in older adults during the COVID-19 pandemic. Journal of religion and health. 2021 Feb;60(1):50-63.

60. Ring L, Greenblatt-Kimron L, Palgi Y. The moderating role of subjective nearness-to-death in the association between health worries and death anxieties from COVID-19. Death Studies. 2022 Aug 9;46(7):1762-7.

61. Toulabi T, Pour FJ, Veiskramian A, Heydari H. Exploring COVID-19 patients' experiences of psychological distress during the disease course: a qualitative study. BMC psychiatry. 2021 Dec;21:1-0.

62. Çağlar A, Kaçer İ. Anxiety levels in patients admitted to the emergency department with myocardial infarction or COVID-19 pneumonia. Psychology, Health & Medicine. 2022 Jan 2;27(1):228-36.

63. Strang P, Bergström J, Martinsson L, Lundström S. Dying from COVID-19: loneliness, end-of-life discussions, and support for patients and their families in nursing homes and hospitals. A national register study. Journal of pain and symptom management. 2020 Oct 1;60(4):e2-13.