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The relationship between authenticity and death anxiety in individuals with Acute Respiratory Tract Infections

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Abstract

Background Acute Respiratory Tract Infections (ARTI) affect millions of people worldwide every year and leave irreversible damage. The consequences of the disease cause patients to experience death anxiety. The aim of this study was to determine the relationship between authenticity and death anxiety in ARTI hospitalized patients.

Methods The participants were 400 ARTI hospitalized patients in one of the hospitals in eastern Iran who were selected by sequential convenience sampling method. Data collection tools were Authenticity Inventory and Death Anxiety Questionnaire.

Results The results showed that there was a significant inverse correlation between authenticity and death anxiety in patients ($p < 0.05$). Also, authenticity level predicted death anxiety.

Conclusions Based on the results of this study, it seems necessary to design professional and specialized mental health services for ARTI patients in order to increase authenticity and reduce death anxiety.

Keywords Acute respiratory tract infections, Hospitalization, Death anxiety, Authenticity, Anxiety

Background

Acute Respiratory Tract Infections (ARTI) are one of the most common causes of death worldwide [10, 51] and have become a public health concern for patients and the clinical community. According to the World Health Organization (WHO), acute respiratory infections are ranked as the fourth leading cause of death worldwide, with 2.6 million deaths per year [38]. In 2019, the rate of disability caused by these disorders was estimated to be 52–128.2 people per 100,000 people [32]. Respiratory infections account for approximately 6% of the total international disease burden[50]. This burden is significantly higher in low-income countries than in developed countries [34].

In addition to various physical, social, and economic complications, ARTI can lead to psychological complications such as stress and anxiety [29]. The physical and psychological consequences of ARTI may lead patients to feel as though they are on the verge of death and to experience death anxiety [25]. Death anxiety is a term used to describe specific anxiety caused by knowledge of death [13]. This anxiety can affect the existential and mental health functions of people. Although death is a biological and psychological reality, thinking about it is scary and most people prefer not to do so [46]. Awareness of the inevitable reality of death and its conflict

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with the strong desire to survive can cause intense fear [48].

Individuals with respiratory conditions tend to experience elevated levels of anxiety compared to the general population, which can be attributed to the emotional toll and typical symptoms associated with their condition [49]. Symptoms like Tachycardia, dyspnea, cyanosis, and ineffective breathing are part of the clinical framework for acute respiratory infections, contributing to a sense of impending mortality in the patient and heightening death anxiety [17, 49].

Since death is unavoidable, everyone worries about it in some way. However, individuals experience death anxiety to varying degrees, influenced by numerous factors [21]. Prior research indicates that individuals with higher levels of self-actualization, self-awareness, and self-esteem tend to have lower death anxiety, while negative emotional states are linked to increased death anxiety [39]. Previous studies have demonstrated a connection between the meaning of life and death anxiety [31]. Death is regarded as the beginning of spiritual life in a number of religions, including Islam and the writings of Maulana [33]. It is recommened to contemplate death in order to move away from neglect and go back to an authentic life [35]. Islam is among the many religions that view death as the start of a spiritual life. Iranian classic literature, such as the writings of Rumi, advises contemplating death as a way to reclaim one's original life and avoid neglect [1, 2]. This contemplation creates conditions for recognizing the human being. The direct and clear confrontation with the reality of death can alter the perception of "I" by challenging the fundamental mental assumptions and concepts and providing a different perception of "self." Saying "I" now has a different meaning than it did before [1]. In this case, the individual is reborn since they go back to their previous state before abandoning themselves. A person becomes their true self and rediscovers the purpose of their life when their awareness of their existence changes [42]. Thus, it seems that a clear and direct encounter with death can serve as a catalyst for the emergence of authenticity [45].

Authenticity refers to an honest awareness of the inner truth or true self, the ability to behave and express oneself in accordance with the true self, and the courage to reject external influences and opinions that are inconsistent with one's understanding of the reality [23]. Facing the truth of death calmly, rather than fearing and denying it, allows people to regain their freedom [42]. An authentic person is someone who can clearly understand and interpret their needs, desires, and inner truths in their daily life and during their social interactions and adapt their actions and interactions to these authentic inner truths [36].

Authenticity refers to the process of uncovering and maintaining a constant connection with one's inner core or true self [3]. Heidegger, the existentialist philosopher, believed that a person neglects authenticity when they choose their existence in two ways: they can choose to live authentically or fail to choose and remain in their everyday inauthentic lives [30]. In positive psychology, authenticity is currently regarded as the most important aspect of "being good". Authenticity is not just a component or prerequisite for achieving goodness; it is the essence of good. Inauthenticity leads to psychosis and tension because it compels people to engage in compulsive and unnatural behaviors, leaving them to feel worthless and undeveloped [36]. In contrast, authenticity fosters an increased sense of being good because it helps people develop a clear and consistent sense of self and a sense of growth [3].

Authenticity includes awareness, unbiased processing, authentic behavior, and relational orientation. Awareness involves aquiring a deep knowledge of one's motivation, desires and emotions. Unbiased processing refers to the ability to perceive oneself without distortion or prejudice. The behavioral dimension refers to acting according to existential values, while the dimension of communication involves the effort to be honest, open and authentic [30, 45].

Authenticity enables individuals to confront the unavoidable realities of existence, such as mortality and an indeterminate future, and to embrace them with unwavering fortitude [43]. An individual of authentic nature, even when nearing the end of life and confronting death, harnesses his or her ability to seek, create, and recreate significance within his or her existence [14]. Ascribing meaning to the adversities associated with illness can foster resilience in patients against the challenges posed by their conditions [26]. Moreover, authenticity may enhance the patient's abilities in self-management and problem-solving, thereby equipping them to effectively navigate the difficulties of illness [9].

While patients often contemplate death, an important question arises: how do they react to this situation? Understanding the realities of the world allows patients to accept the concept of death and reduce its negative effects. In some countries, including Iran, knowledge on reducing death anxiety is not sufficiently developed, and some healthcare providers are not prepared to provide this type of care [35]. On the other hand, there is a lack of attention to the topic of death among the general public and researchers Consequently, studies on authenticity and death anxiety are scarce [35]. This study seeks to address this gap in the literature by assessing the

relationship between authenticity and death anxiety, with the aim of helping this population reduce their death anxiety.

Methods

Study design and participants

This study had a cross-sectional design. Setting of this study included the wards of three hospitals affiliated with Iranshahr University of Medical Sciences in eastern Iran. Data were collected from January 2023 to March 2024. The study population included patients with ARTI referred to the emergency, respiratory, intensive care unit (ICU), and internal departments. The sample size was determined through a pilot study. According to the formula, at an 80% power and 95% confidence level, the sample size was estimated to be 384 patients. Given the probability of participant dropout, the final sample size was considered to be 400.

$$n = \frac{z(1 - a/2)^2 s^2}{d^2}$$

$$z\left(1 - \frac{a}{2}\right) = 1.96$$

$$s = 3$$

$$d = 0.3$$

The inclusion criteria were hospitalization due to Acute lower respiratory tract infection, such as bronchitis, pneumonia; the ability to read and write in Persian and understand relevant questions, be at least 18 years old; and not taking psychotropic drugs. Patients were excluded from this study if they had a history of smoking or opium addiction, had underlying diseases, or if they completed less than 10% of the questionnaire.

Instruments

Demographic Information Form: This form included questions such as gender, age, place of residence, marital status, socioeconomic status, chronic diseases, lung diseases, history of drug use and type of medications taken, length of hospital stay, and intensive care unit hospitalization.

Templer's Death Anxiety Scale (T-DAS)

Templer designed the Death Anxiety Questionnaire (DAQ) in 1970 [19]. This questionnaire contains 15 items. On this scale, individuals rated their responses on a 5-point scale from strongly disagree (1) to strongly agree (5). Participants were classified into three levels of death anxiety based on their scores: mild (15–30), moderate (31–45), and severe (46–75) [40]. It was standardized in Iran by Rajabi and Bohrani [41]. Item 14 of this questionnaire was deleted owing to cultural differences.

The validity of the instrument was examined through construct validity and factor analysis, as well as criterion validity with two instruments: the Death Concern Scale and the Overt Anxiety Questionnaire. The correlation between death anxiety and the Death Concern Scale was reported to be 0.40, while the correlation with Overt Anxiety Questionnaire was 0.43. Internal reliability was used to measure the reliability of the instrument. Thus, the internal correlation between the even and odd questions in the questionnaire completed by 10 participants was measured, and reliability of 0.73 was obtained [41]. In this study, the reliability of the questionnaire was measured using the internal consistency method with a Cronbach's alpha coefficient of 0.83.

Authenticity inventory

The Kernis-Goldman Authenticity Inventory is a 45-item measure of authenticity that consists of four domains on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree." A higher score indicates a higher level of authenticity. 12 items of which measure awareness domain, 11 items measure behavior, 12 items measure relational orientation domain, and 10 items measure unbiased processing. Following the Authenticity inventory procedure, the average score of the items was calculated to form a total score [24]. The mean scores ranged from 1 to 5.

Kenris and Goldman confirmed the construct validity of the inventory using factor analysis. Kenris and Goldman also measured the reliability of this instrument using the test–retest method, reporting Cronbach's alpha ranging from 0.8 to 0.9 [24].

In Iran, this Inventory was translated into Persian by Nazari et al. [35],To examine the content validity, the questionnaires were provided to 10 faculty members of the Razi School of Nursing, Kerman, and experts, and their corrective comments were used. The content validity index (CVI) for the originality questionnaire was calculated to be 0.92. Its reliability was also measured using the internal consistency method, with Cronbach's alpha calculated to be 0.78.

This inventory was also administered to 25 ARTI patients to ensure internal consistency reliability, and a Cronbach alpha coefficient of 0.85 was calculated.

Procedure

Patients were selected from the internal, emergency, respiratory, and ICU departments of three hospitals affiliated to Iranshahr University of Medical Sciences. After the approval of this project at the Iranshahr University

of Medical Sciences, the researchers began sampling by presenting a letter of introduction to the desired departments. The first, second, and third authors visited the relevant departments daily and selected eligible patients to participate in the study using sequential convenience sampling method. After introducing themselves and explaining the study objectives, the researchers obtained informed written consent from the patients. The questionnaires were then distributed to the research units to complete the demographic form, authenticity scale, and death anxiety questionnaires. There was no time limit for completing the questionnaire. For patients who were unable to write, questionnaires were completed through interviews.

Data analyses

Data were analyzed using SPSS22. The Kolmogorov–Smirnov test was employed to demonstrate the normal distribution of the data. Descriptive statistics including percentage, frequency, mean, and standard deviation, were used to describe demographic information, death anxiety, and authenticity scores. Pearson correlation and linear regression tests were conducted to examine the relationship between death anxiety and authenticity. The chi-square test was applied to determine the relationship between the qualitative variables. The confidence level of the tests was 95%, the significance level was set at $\alpha = 0.05$.

Ethical procedures

The ethics committee approved the present study of Iranshahr University of Medical Sciences (IR.IRSHUMS.REC.1400.016) and all the ethical standards of the 1964 Helsinki declaration have been observed. Informed written consent was obtained from the participants. Patients were informed that psychological counseling services were available online and in-person if needed after the examination. None of the participants needed psychological services. They were trained about the voluntary nature of research and could withdraw from the study at any time.

Results

Demographic characteristics

The mean age of the patients was 35.7 ± 15.9 years and ranged from 18 to 67 years. They were married (72%), female (52.75%). In terms of educational level, 16.25% of them had a university degree, 82.75% lived in the city, and 19.75% had full-time employment. Most patients (44%) were of average socioeconomic status, 25% had at least one chronic disease, and the most frequent chronic disease among patients was cardiovascular disease (37%). 20% of patients were admitted to the intensive care unit (ICU), but none were intubated (Table 1).

Table 1 Demographic variables of participants

Variable		N (%)
Age	≤ 20	28(7)
	21–40	199(49.75)
	41–60	154(38.5)
	≥ 61	19(4.75)
Gender	Women	211 (52.75)
	Men	189(47.25)
Marital status	Single	112(28.0)
	Married	288(72.0)
Living place	City	331(82.75)
	Rural	69(17.25)
Education level	Primary or lower	65(16.25)
	Middleschool	110(27.5)
	High school	160(40.0)
	University	65(16.25)
Occupational status	Unemployed	155(38.75)
	Paid employment	166(41.5)
	Full time employment	79(19.75)
Chronic disease	Yes	100(25.0)
	No	300(75.0)

Table 2 The mean scores for death anxiety, authenticity, and its dimensions

Variable	Mean ± SD	Minimum	Maximum
Death anxiety	45.4. ± 6.3	24.0	58.0
Awareness	0.89 ± 0.15	0.64	1.89
Unbiased processing	0.66 ± 0.11	0.36	1.11
Behavior	0.73 ± 0.14	0.47	1.04
Relational orientation	0.85 ± 0.13	0.53	1.22
Total authenticity	3.2 ± 0.29	2.5	4.0

Death anxiety

As Table 2 shows, the mean death anxiety score in these patients was 45.4 ± 6.3, ranging from 24 to 58 points. A total of 186 (93%) patients had high levels of death anxiety.

The results indicated a notable negative correlation between age and the score pertaining to death anxiety, whereby an increase in age was associated with a reduction in death anxiety. The mean death anxiety score for women was three points higher than that of men, but this difference did not achieve statistical significance. Additionally, the results showed that none of the other

Table 3 Correlation between authenticity and its dimensions with death anxiety

Variable	Death Anxiety	
Dimensions of Authenticity	**Pearson Correlation**	**p value**
Total Authenticity	−0.432	000.0
Awareness	−0.175	0.000
Unbiased Processing	−0.013	0.799
Behavior	−0.393	0.000
Relational Orientation	−0.353	0.000

Table 4 Results of linear regression to predict death anxiety by authenticity

Model 1	B	SE	Beta	T	P	Model Summary
Constant	72.466	3.036	**−0.432**	23.868	0.**000**	R = 0.432
Authenticity	−9.203	0.964		−9.550	0.000	R2 = 0.186
						ADJ.R2 = 0.184

demographic variables had a significant relationship with death anxiety ($p > 0/05$).

Authenticity

The mean authenticity score of the patients was 3.2 ± 0.29, ranging from 2.5 to 4.0. The mean scores of the authenticity dimensions are shown in Table 2. The results indicated that, aside from age, there were no significant relationships between their demographic variables and authenticity ($p > 0/05$). Patients who were older exhibited higher authenticity ratings.

Death anxiety and authenticity

Pearson's test results showed that there was a significant inverse relationship between authenticity score and death fear score. Specifically, the higher authenticity score was associated with less death anxiety ($p < 0.000$) (Table 3). Additionally, showed a significant inverse relationship between the dimensions of awareness, unbiased processing, behavior, and relational orientation related to authenticity and the death anxiety score. Patients exhibiting elevated authenticity scores demonstrated diminished levels of death anxiety.

As shown in Table 4, the results of the linear regression test showed that authenticity score could predict death anxiety in the studied patients. In other words, changes in authenticity scores explain 18.6% of the death anxiety score changes. The results of this test showed that for each change in the authenticity score, the death anxiety score decreases by 9.2 points (Table 4).

Results showed that none of these demographic variables predicted the authenticity and death anxiety scores.

Discussion

The aim of this study was to determine the relationship between authenticity and death anxiety in patients with ARTI. The results of the present study showed that patients with higher authenticity scores experienced less death anxiety and less stress. Based on the results of the present study, authenticity score could predict the level of death anxiety and perceived stress in patients with ARTI. Nazari et al. showed that there was a significant negative relationship between authenticity score and death anxiety in cancer patients, which was consistent with our study [35].

Authenticity and meaning in life lead to mental health, while meaninglessness leads to psychopathology [47]. Previous studies have shown that authenticity can influence self-confidence, life satisfaction, positive emotions, autonomy, control over the environment, and positive communication, as well as influencing others, personal growth and self-acceptance [15]. Additionally, reduced authenticity has been linked to anxiety, depression, stress, and other negative emotions [8]. The study by Cheung et al. [11] revealed the prevalence of suicide increased in the elderly following severe acute respiratory syndrome (SARS). This increase was not solely due to the virus,unresolved fear and anxiety, weakening of social support and feelings of loneliness were also contributing factors, leading to feelings of worthlessness and psychological unpreparedness among older people This has resulted in the increased number of suicide attempts among this group. One possible explanation is that social relationships have a negative relationship with alienation and a positive relationship with authentic living [7], Therefore, it seems plausible that people with high levels of self-alienation and low levels of authentic living experience more emotional loneliness [11]. Some research has shown that self-awareness and the formation of a personal identity can help people adopt problem-focused methods in the face of stress and crises, be more resilient to other problems, and have higher mental health. Consequently, higher levels of self-awareness are associated

with fewer psychological problems, such as feelings of loneliness.

For patients on ARTI, symptoms of shortness of breath are a sign of impending death, causing them to become anxious, tense, and restless [27]. Because the symptoms of the disease appeared quickly and there is great concern about what will happen to family members and loved ones in the future, there is no sense of preparation for death [12]. These factors lead to ARTI patients experiencing higher levels of death anxiety compared to other patients [16].

Death is a concern that every person will inevitably deal with as a mental conflict to varying degrees. Furthermore, research by French et al. showed that awareness of death has a positive impact on a person's desire to form stable relationships and participate in social activities, which is consistent with the results of the present research [18]. Existential therapists believe that if life has meaning, suffering must have meaning. It is undeniable that there is suffering in life; without suffering, human life cannot be considered complete. However, if man is willing to accept his suffering—even under the most difficult circumstances – they will have the opportunity to discover a profound and meaningful purpose for their existence [4].The study by Ockerman et al. [37] found that authenticity was negatively related to poor mental health and negative health behaviors [37]. The results of the present study showed that all dimensions of authenticity were inversely related to fear of death. Authenticity refers to a person's ability to persevere, remain stable and support themselves in difficult times rather than succumb to depression and despair. Authentic people can withstand the challenges of life because they have an anchor; they have a clear and authentic self-image, they know who they are and recognize their place in the overall picture of the world [28].

In Nazari et al.'s study, in cancer patients, only the awareness and behavior dimensions scores were related to death anxiety. Death anxiety does not significantly correlate with unbiased processing or relational orientation [35]. All dimensions showed a significant relationship with death anxiety in our study. This discrepancy is most likely due to the different study population and instruments that were employed. Allan et al. [5] found that the only factor substantially positively correlated with mindfulness and life purpose was awareness. Meaning in life was inversely correlated with unbiased processing, relationships, and behavior [5]. In light of the disparate results in this area, additional research in this field, involving a variety of populations, is necessary to identify the key variables and obscure perspectives.

The study showed that women had higher death anxiety scores than men, although the difference was not significant. Nazari et al. also reported no notable relationship between demographic variables and death anxiety or authenticity in cancer patients [35]. Some research, however, indicates that women tend to experience higher levels of death anxiety than men [6, 22].

This discrepancy may result from differences in the populations studied, the types of illnesses, cultural backgrounds, and individual perspectives on life and death.

The study found that as patients' age increased, their veracity scores increased and their death anxiety scores decreased, which is consistent with the studies of Kakabaraei and Moazinejad [22], Schumaker et al. [44], and Harrawood et al. The increase in age brings more life experience and awareness, especially if people feel they have met their goals, leading to greater psychological insight and readiness for death [20, 22, 44].

Some studies have shown that death anxiety increases with age, which contradicts the results of this study. Differences in results may be related to personal circumstances, cultural backgrounds, and how people perceive their achievements in life [6]. Those who achieve their goals in a certain culture may experience less anxiety about death with age, satisfying many of their desires. Conversely, with age, people maywitness the deaths of more friends and family, which can lead to more acceptance of death [22].

Limitations

Although the present study results showed that authenticity predicts death anxiety in hospitalized ARTI patients, it has some limitations. First, the generalizability of the results was limited because the participants were selected from one region. It is recommended that further studies be conducted using different methods and in different populations. Second, self-report method was used for data gathering and the sample size of this study was small. Future studies could focus on using larger sample sizes to increase the generalizability of the results. In addition, confounding variables such as cultural and religious beliefs could influence the association between authenticity and death anxiety in patients. Future studies could be conducted in culturally diverse communities and take into account confounding factors.

Conclusion

The results of the current study revealed a notable direct correlation between authenticity and death anxiety. Individuals who exhibited higher levels of authenticity had lower rates of death anxiety. Also, death anxiety decreased with increasing age. Nurses might be able to alleviate death anxiety in patients by helping them recognize their true selves. Nevertheless, further research is necessary to determine if enhancing authenticity through

a specific program effectively reduces death anxiety in ARTI patients. Additionally, it is advisable for nurses and nursing managers to understand the concepts of authenticity and death anxiety, and to implement suitable strategies that encourage patients to express their experiences and support one another. Given the scarcity of studies focusing on authenticity and death anxiety, the results of this research could serve as a foundation for more investigations in this field.

Abbreviations

ARTI	Acute Respiratory Tract Infections
WHO	World Health Organization
ICU	Intensive care unit
T-DAS	Templer's Death Anxiety Scale
DAQ	Death Anxiety Questionnaire

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Authors' contributions
Author FD was the project leader. FD, ES, and RSB designed the protocol of the study. ES and MB, participated in data collection. Authors FD and RSB participated analysed the data and interpreted the results. Author FD wrote the draft for the introduction. All co-authors edited and revised the manuscript. All authors approved the final manuscript.

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Data availability
The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate
The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the ethics committee of Iranshahr University of Medical Sciences with the ethical code IR.IRSHUMS.REC.1400.016. Obtaining informed consent from the participants and assuring them of their anonymity and data confidentiality were other ethical considerations. The participants were free to withdraw from the study at any stage of the research.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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References

1. Abdurrahman A, Tayeb G. Spiritual Study on the Concept of Life and Death in the Poetry of Mawlana Jalaluddin Rumi. Humanities Journal of University of Zakho. 2023;11(4):917–22.
2. Ahmad, H. (2015). Philosophy of death in the western philosophical and islamic traditions: a case study of Heidegger.
3. Alchin CE, Machin TM, Martin N, Burton LJ. Authenticity and inauthenticity in adolescents: A scoping review. Adolescent Research Review. 2024;9(2):279–315.
4. Alizadeh S, Taklavi S, Mahmoud Alilou M, Feizipour H. The Effectiveness of Existential Therapy on Death Anxiety and Meaning of Life in Recovered Patients of Covid-19. Studies in Medical Sciences. 2021;32(5):388–98.
5. Allan BA, Bott EM, Suh H. Connecting mindfulness and meaning in life: Exploring the role of authenticity. Mindfulness. 2015;6:996–1003.
6. Bharti A, Bharti DA. (2024). Impact of death anxiety on psychological well-being and successful aging of older adults with chronic illness. OMEGA-J Death Dying. 00302228241272543.
7. Black K. Health care professionals' death attitudes, experiences, and advance directive communication behavior. Death Stud. 2007;31(6):563–72.
8. Blomgren L, Strååht J. The role of Authenticity in Anxiety. An exploratory Cross-sectional study: Depression and Quality of Life; 2019.
9. Breitling-Winkler BM. Being true to self: The experience of congruence in cancer survivors. University of Calgary, Division of Applied Psychology; 2008.
10. Chen Y, Lin T, Wang CB, Liang WL, Lian GW, Zanin M, Wong SS, Tian XG, Zhong JY, Zhang YY, Xie JH. Human adenovirus (HAdV) infection in children with acute respiratory tract infections in Guangzhou, China, 2010–2021: a molecular epidemiology study. World J Pediatr. 2022;18(8):545–52.
11. Cheung Y, Chau PH, Yip PS. A revisit on older adults suicides and Severe Acute Respiratory Syndrome (SARS) epidemic in Hong Kong. International Journal of Geriatric Psychiatry: A journal of the psychiatry of late life and allied sciences. 2008;23(12):1231–8.
12. Cohen S. Psychosocial vulnerabilities to upper respiratory infectious illness: implications for susceptibility to coronavirus disease 2019 (COVID-19). Perspect Psychol Sci. 2021;16(1):161–74.
13. Darban F, Karamzehi R, Balouchi A, Safarzai E, Salehian T, Hoseynzehi M, Zareban I. The relationship between social intelligence and death anxiety among elderly people living in Iranshahr. Iran International Journal of Mental Health and Addiction. 2016;14:896–900.
14. Doyle A, Donlon E, Conroy Johnson M, McDonald E, Sexton PJ. Re-envisioning pre-service teachers' beliefs and feelings about assessment: the important space of authentic assignments. Eur J Teach Educ. 2024;47(2):246–66.
15. Evans JA, Krumrei-Mancuso EJ, Rouse SV. What you are hiding could be hurting you: Autistic masking in relation to mental health, interpersonal trauma, authenticity, and self-esteem. Autism in Adulthood. 2024;6(2):229–40.
16. Falagas M, Karamanidou C, Kastoris A, Karlis G, Rafailidis P. Psychosocial factors and susceptibility to or outcome of acute respiratory tract infections. Int J Tuberc Lung Dis. 2010;14(2):141–8.
17. Fattouh N, Hallit S, Salameh P, Choueiry G, Kazour F, Hallit R. Prevalence and factors affecting the level of depression, anxiety, and stress in hospitalized patients with a chronic disease. Perspect Psychiatr Care. 2019;55(4).
18. French C, Greenauer N, Mello C. A multifactorial approach to predicting death anxiety: Assessing the role of religiosity, susceptibility to mortality cues, and individual differences. J Soc Work End Life Palliat Care. 2017;13(2–3):151–72.
19. Gilliland JC, Templer DI. Relationship of death anxiety scale factors to subjective states. OMEGA-Journal of Death and Dying. 1986;16(2):155–67.
20. Harrawood LK, White LJ, Benshoff JJ. Death anxiety in a national sample of United States funeral directors and its relationship with death exposure, age, and sex. OMEGA-Journal of Death and Dying. 2009;58(2):129–46.
21. Juhl J, Routledge C. Putting the terror in terror management theory: Evidence that the awareness of death does cause anxiety and undermine psychological well-being. Curr Dir Psychol Sci. 2016;25(2):99–103.
22. Kakabaraei K, Moazinejad M. The relationship between finding meaning in life and demographic characteristics with death anxiety in the elderly. Aging Psychology. 2016;2(1):47–37.
23. Karlsson M, Friberg F, Wallengren C, Öhlén J. Meanings of existential uncertainty and certainty for people diagnosed with cancer and receiving palliative treatment: a life-world phenomenological study. BMC Palliat Care. 2014;13:1–9.

24. Kernis MH, Goldman BM. A multicomponent conceptualization of authenticity: Theory and research. Adv Exp Soc Psychol. 2006;38:283–357.
25. Khan S, Siddique R, Xiaoyan W, Zhang R, Nabi G, Sohail Afzal M, Xue M. Mental health consequences of infections by coronaviruses including severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Brain Behav. 2021;11(2):e01901.
26. Laranjeira CA, Leão PP, Leal I. The "silenced" voices of women cancer survivors: Bodily experiences from an existential perspective. Res Theory Nurs Pract. 2013;27(3):173–92.
27. Li ZJ, Zhang HY, Ren LL, Lu QB, Ren X, LiJ Zhang CH. Etiological and epidemiological features of acute respiratory infections in China. Nat Comm. 2021;12(1):5026.
28. Macann C. (2023). Existentialism, Authenticity and the Self. The Bloomsbury Handbook of Existentialism. 160.
29. Matthay MA, Zemans RL, Zimmerman GA, Arabi YM, Beitler JR, Mercat A, Calfee CS. Acute respiratory distress syndrome. Nat Rev Dis Primers. 2019;5(1):18.
30. McManus D. (2014). Heidegger, authenticity and the self: Themes from division two of being and time: Routledge.
31. Menzies RE, Menzies RG. Death anxiety in the time of COVID-19: Theoretical explanations and clinical implications. The Cognitive Behaviour Therapist. 2020;13: e19.
32. Merera AM. Determinants of acute respiratory infection among under-five children in rural Ethiopia. BMC Infect Dis. 2021;21:1–12.
33. Mohammadpour M, Bazargan N, Mahozi AH. Divine Birth and Death in Masnavi. J Mytho-mystic Lit. 2015;11(39):263–301.
34. Mondal D, Paul P. Effects of indoor pollution on acute respiratory infections among under-five children in India: Evidence from a nationally representative population-based study. PLoS ONE. 2020;15(8):e0237611.
35. Nazari F, Khoshnood Z, Shahrbabaki PM. The relationship between authenticity and death anxiety in cancer patients. OMEGA-Journal of Death and Dying. 2023;86(3):966–79.
36. Nunes JC, Ordanini A, Giambastiani G. The concept of authenticity: What it means to consumers. J Mark. 2021;85(4):1–20.
37. Ockerman KM, Mardourian M, Han SH, Sorice-Virk S, Ching J. Protective Effects of Authenticity Against Depression, Suicide, and Burnout among Surgeons. J Am Coll Surg. 2023;10:1097.
38. Organization WH. (2021). Global health estimates: life expectancy and leading causes of death and disability. 2019. URL https://www. who. int/data/gho/data/themes/mortality-and-global-health-estimates.
39. Pandya AK, Kathuria T. Death anxiety, religiosity and culture: Implications for therapeutic process and future research. Religions. 2021;12(1):61.
40. 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. J Relig Health. 2021;60(1):50–63.
41. Rajabi GR, Bohrani M. (2002). Item factor analysis of the death anxiety scale.
42. Razban F, Mehdipour-Rabori R, Rayyani M, Mangolian Shahrbabaki P. Meeting death and embracing existential loneliness: A cancer patient's experience of being the sole author of his life. Death Stud. 2022;46(1):208–23.
43. Schulenberg SE. Existential Psychotherapy-The Genetic-Phenomenological Approach: Beyond a Dichotomy Between Relating. Clarifying and Furthering Existential Psychotherapy: Theories, Methods, and Practices. 2016. p. 115.
44. Schumaker JF, Warren WG, Groth-Marnat G. Death anxiety in Japan and Australia. J Soc Psychol. 1991;131(4):511–8.
45. Sedikides C, Schlegel RJ. Distilling the concept of authenticity. Nature Reviews Psychology. 2024;3(8):509–23.
46. Sharabati I, Mustafa MM, Ateeq M, Al-Jabali H, Elsayed AA, Kandil AH, Al-Mubaid F. Approach to death and dying patients and its relation with death anxiety among medical interns: a multicenter cross-sectional study. BMC Psychol. 2024;12(1):794.
47. Sharma N, Rickly J. (2021). 'The smell of death and the smell of life': authenticity, anxiety and perceptions of death at Varanasi's cremation grounds. In Authenticity and authentication of heritage (pp. 78–89): Routledge.
48. Spitzenstätter D, Schnell T. Effects of mortality awareness on attitudes toward dying and death and meaning in life—a randomized controlled trial. Death Stud. 2022;46(5):1219–33.
49. Vázquez-Salas A, Hubert C, Portillo-Romero A, Valdez-Santiago R, Barrientos-Gutiérrez T, Villalobos A. Sintomatología depresiva en adolescentes y adultos mexicanos: Ensanut 2022. salud pública de méxico. 2023;65:s117–25.
50. Windi R, Efendi F, Qona'ah A, Adnani QES, Ramadhan K, Almutairi WM. Determinants of acute respiratory infection among children under-five years in Indonesia. J Pediatr Nurs. 2021;60:e54–9.
51. Xie M-Z, Dong M, Du J, Zhang S-S, Huang F, Lu Q-B. Epidemiological features of Streptococcus pneumoniae in patients with acute respiratory tract infection in Beijing, China during 2009–2020. J Infect Public Health. 2023;16(5):719–26.

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