J Health Rep Technol. 2025 January; 11(1): e151784 https://doi.org/10.5812/jhrt-151784

Published Online: 2025 January 5 **Research Article**

Socio-economic and Demographic Factors Associated with Psychological Distress Among Elderly

Mehdi Mirzaei-Alavijeh [1], Sahar Parsafar [2], Mehdi Moradinazar [3], Farzad Jalilian [4,*]

[1] Social Development and Health Promotion Research Center, Health Policy and Promotion Research Institute, Kermanshah University of Medical Sciences, Kermanshah, Iran

[2] Department of Health Education and Promotion, School of Health, Kermanshah University of Medical Sciences, Kermanshah, Iran

[3] Clinical Research Development Center, Motazedi Hospital, Kermanshah University of Medical Sciences, Kermanshah, Iran

[4] Family Health and Population Growth Research Center, Health Policy and Promotion Research Institute, Kermanshah University of Medical Sciences, Kermanshah, Iran

[*] ***Corresponding Author:*** Family Health and Population Growth Research Center, Health Policy and Promotion Research Institute, Kermanshah University of Medical Sciences, Kermanshah, Iran. Email: f_jalilian@yahoo.com

Received: 28 August, 2024; **Revised:** 2 December, 2024; **Accepted:** 14 December, 2024

Abstract

Background: Psychological distress is one of the most common mental health disorders in the elderly and can lead to major depression and anxiety disorders.

Objectives: The aim of this study was to determine the prevalence, socio-economic and demographic factors associated with psychological distress among elderly in Kermanshah.

Methods: The current research was a descriptive study that was conducted among the elderly over 60 years old covered by the pension funds of Kermanshah city in the winter of 2022. Sampling was done by multi-stage cluster sampling method. Data were collected using Kessler Psychological Distress Scale (K6) by interview. Data were analyzed by SPSS version 16 using Pearson correlation, chi-square and independent samples *t*-test at 95% significant level.

Results: Twenty point six percent of the elderly had psychological distress. The correlation between age and psychological distress was positive and significant (r = 0.108 and P = 0.012). Psychological distress was significantly higher among men (P = 0.019), people with primary education (P = 0.001) and poor economic status (P < 0.001).

Conclusions: The prevalence of psychological distress among the elderly is noticeable. It is important to teach methods to help the elderly cope with psychological distress. Efforts to prevent and decrease psychological distress among the elderly in Kermanshah should prioritize individuals with low economic status and men.

Keywords: Elderly, Psychological Distress, Mental Health

1. Background

Mental illnesses are one of the most common public health issues around the world that negatively affect people's lives and society's health (1). According to the estimates of the World Health Organization (WHO), about 25% of the populations in developing countries suffer from mental illnesses, and its prevalence is spreading (2). According to the latest WHO reports, in 2022, mental disorders will affect one in eight people worldwide (3). The prevalence of mental disorders in Iran also corresponds to the global trend, and depression and anxiety are the most common mental diseases diagnosed (4). On the other hand, the elderly population has increased significantly in most countries of the world (5). Currently, people aged 60 years and older currently constitute 12.3% of the world's population, and it is predicted to reach approximately 22% by 2050 (6).

One of the health issues faced by the elderly is mental illness (7). On the other hand, in recent years, the mental health issues of the elderly have become more serious due to reasons such as the speed of urbanization, population reduction policies, single children and loneliness (8). These disorders are common in the

elderly and about 20% of the elderly 60 years and older suffer from a mental disorder (9).

The population with mental illness not only imposes significant costs on the health care system, but also causes great economic losses to the society (10). Also, these disorders have a significant effect on the costs of treatment and hospitalization among elderly people with physical disorders (6). These disorders are a major source of distress, disability, and social burden, and many people who could benefit from treatment do not receive it (11). Longitudinal studies have shown that decreased cognitive abilities and perceived control as well as increased loneliness may lead to psychological distress among older adults (9, 12). Psychological distress has a significant relationship with aging (13) and is considered as a key component in the psychosocial functioning of the elderly (14). The term psychological distress often includes: Stress, depression or anxiety that has not reached the severity of a mental disorder (13). In another definition, psychological distress is often referred to as a general mental stress reaction, including emotional symptoms of depression and anxiety (14). Psychological distress is considered a public health priority due to its adverse effects on quality of life, health, performance and productivity; it can also predict several serious mental illnesses such as depression and anxiety disorders (15). Evidence has shown that the risk of cardiovascular disease, chronic obstructive pulmonary disease, and incidental arthritis all increase with increasing levels of psychological distress in the elderly population (14, 15). On the other hand, biological, social and economic stress may increase the risk of psychological distress in the elderly (11). Other factors affecting psychological distress include age, gender, and educational status (16).

Today, there is more interest and awareness among the general population about recognizing and pursuing the treatment of these types of issues, and there is also the ability to identify them in health care services (10). In addition, evidence shows that the identification of factors affecting mental disorders can be beneficial in the development of targeted interventions (17).

2. Objectives

Considering the importance of having evidence-based data in health promotion planning, the present study was conducted with the aim of determining the prevalence, socio-economic and demographic factors associated with psychological distress among elderly in Kermanshah.

3. Methods

3.1. Participants

The present study was a descriptive study that was conducted among people aged 60 to 75 in Kermanshah city in 2022. The sampling method was a multi-stage cluster, so that first, among the pension funds of Kermanshah city, 3 national pension funds, and social security and armed forces funds were randomly selected. Then, information was collected from 538 people aged 60 to 75 under the coverage of these centers, as a simple random sampling. The inclusion criteria for this study were: Being 60 to 75 years old, having at least primary education, and being covered by pension funds. Incomplete answering of the questionnaire options was considered as the exclusion criterion.

3.2. Data Collection Tool

The data collection tool was a questionnaire that included two sections; the first part of demographic information included questions such as age, gender, education, marital status and economic status, living situation, experience of stressful events during the past year, and smoking. The second part of the 6-item Kessler Psychological Distress Scale (K6) was measured on a 5-point Likert Scale with points ranging from 0 (None of the time) to 4 (All of the time). In order to score this scale, the scores in all 6 items were added for a total score range between 0 and 24. Respondents were classified as having severe psychological distress if they scored 13 or more (18). The psycho analysis of this questionnaire was done in Persian language and its Persian version is valid, reliable and stable enough to diagnose psychological distress among the elderly. Cronbach's alpha of the questionnaire was reported in Iran (0.92) (19). In our study, the reliability coefficient for the K6 was 0.83.

3.3. Data Analysis

Data were analyzed by SPSS version 16 using Pearson correlation, chi-square and independent samples *t*-test at 95% significant level. Descriptive data are reported with mean ± standard deviation and number (percentage).

Table 1. The Relationship Between Psychological Distress and Background Variables of the Elderly [a]

Background Variables	Psychological Distress		P-Value
	No	Yes	
Age [b]	65.81 ± 4.01	66.74 ± 4.32	0.033
Gender [c]			0.019
Female	183 (84.3)	34 (15.7)	
Male	244 (76)	77 (24)	
Education [c]			0.001
Elementary	105 (68.6)	48 (31.4)	
Secondary	54 (79.4)	14 (20.6)	
Diploma	170 (84.2)	32 (15.8)	
Academic	98 (85.2)	17 (14.8)	
Economic status [c]			< 0.001
Weak	146 (67.3)	71 (32.7)	
Medium	222 (86.7)	34 (13.3)	
Good	59 (90.8)	6 (9.2)	
Marital status [c]			0.387
Single	8 (66.7)	4 (33.3)	
Married	329 (80.4)	80 (19.6)	
Widow	90 (76.9)	27 (23.1)	
Living arrangements [c]			0.219
Alone	53 (71.6)	21 (28.4)	
Spouse and children	210 (78.9)	56 (21.1)	
Children	55 (80.9)	13 (19.1)	
Spouse	109 (83.8)	21 (16.2)	
Smoking [c]			0.833
No	331 (79.6)	85 (20.4)	
Yes	96 (78.7)	26 (21.3)	
Having experienced a stressful event in the past year [c]			0.172
No	265 (81.3)	61 (18.7)	
Yes	162 (76.4)	50 (23.6)	

[a] Values are expressed as mean ± SD or No. (%).

[b] Independent samples *t*-test

[c] Chi-square

4. Results

Our findings showed that 20.6% (111 people) of the elderly had psychological distress according to K6. The findings related to the relationship between gender, education, economic status, marital status, place of residence, smoking and history of having a stressful crisis during the last year with mental distress were shown in Table 1.

As Table 1 shows, psychological distress is significantly higher among men, people with primary education and poor economic status. The average age of the elderly suffering from psychological distress is significantly higher (66.74 years vs. 65.81 years). Also, the correlation between age and psychological distress was positive and significant (r = 0.108 and P = 0.012).

The response status to the items of the K6 is shown in Table 2. As the findings show, respectively, 26.2%, 17.6%, 17.3%, 8.9%, 18.6%, and 3.3% of the elderly reported that most of the time or always (during a month) (past) feeling nervous, hopeless, restless, depressed, needing a lot of effort to do things and being worthless.

5. Discussion

The main aim of this research was determine the prevalence, socio-economic and demographic factors

Table 2. Response Status to K6 Items Among the Participants [a]

Item	None of the Time	A Little of the Time	Some of the Time	Most of the Time	All of the Time	Value	Total Score
During the past 30 days, about how often did you feel, …							9.00 (4.26)
…nervous?	26 (4.8)	106 (19.7)	265 (49.3)	130 (24.2)	11 (2)	1.99 ± 0.84	
…hopeless?	86 (16)	130 (24.2)	227 (42.2)	76 (14.1)	19 (3.5)	1.66 ± 1.02	
…restless or fidgety?	69 (12.8)	108 (20.1)	268 (49.8)	80 (14.9)	13 (2.4)	1.73 ± 0.94	
…so depressed that nothing could cheer you up?	128 (23.8)	159 (29.6)	203 (37.7)	41 (7.6)	7 (1.3)	1.33 ± 0.96	
…that everything was an effort?	108 (20.1)	187 (34.8)	143 (26.6)	80 (14.9)	20 (3.7)	1.47 ± 1.08	
…worthless?	223 (41.4)	213 (39.6)	84 (15.6)	12 (2.2)	6 (1.1)	0.82 ± 0.85	

[a] Values are expressed as No. (%) or mean ± SD.

associated with psychological distress among elderly in Kermanshah. The findings of the present study showed that 20.6% (111 people out of 538 people) of the elderly have psychological distress according to the K6. In the study by Liu et al., in Japan, 20.7% (20) and 20.5% of elderly people living in the community showed psychological distress in the study by Matsumura et al. (21). Sujiv et al., study on people aged 60 years and older in India also showed similar results and estimated the rate of psychological distress at 18.4% (22), which was largely consistent with our results. In another study on Australian elderly, the rate of psychological distress was reported as 12.5% (23). Differences in diagnostic tools and characteristics of the studied populations lead to different results in studies evaluating the prevalence of psychological distress (24).

Gender is a relevant factor in psychological distress and its predictors (14). Gender differences in psychological distress may be moderated by social influences and gender roles. In previous studies on other populations, levels of psychological distress were higher among women compared to men (25-27). One of these studies was the study by Cotton et al., in Australia, which showed that women have a higher average psychological distress (64.7%) than men (35.3%) (25) and maybe they cited the reason that men have difficulty in describing their feelings and distress (28). While the present study showed that psychological distress among elderly men (24%) is significantly higher than among women. Maybe because elderly women use emotional and avoidant coping styles more than men in stressful situations, and also the stereotype is that men are more capable and more successful than women (29). Although there is a need to conduct more studies in relation to the role of gender in psychological distress, the findings of the present study are an alarm for men's health policy makers in Iran and the need to pay more attention to identifying factors predicting psychological distress among men and developing interventions in this field is felt.

Previous studies have shown that the level of education directly or indirectly affects the levels of psychological distress (30, 31). The findings of the present study show that psychological distress is significantly higher among people with primary education (31.4%) and poor economic status (32.7%). Several studies support our findings (32-34). Poor education may be big barriers to dominant participation in society and being cognitively active (35). This finding emphasizes that the development of interventions to prevent and reduce psychological distress should focus more on economically-socially vulnerable elderly.

The findings of this study show that the average age of the elderly with psychological distress is significantly higher (66.74 years vs. 65.81 years). This finding is in agreement with the findings of a study conducted among the elderly living in the United States, which showed that adults aged 75 to 84 were less likely to have serious psychological distress than those aged 85 and older (36). This finding is consistent with other studies (36-38). This fact can be explained as the burden of co-morbidities increases with age, and this is the basis of mental injuries. In contrast, Chan et al., study in the United States of 37,842 people aged 18 years and older showed that older people generally had lower levels of psychological distress (39).

Another important finding in the present study was that 26.2% and 17.6% of the elderly were always or most of the time nervous and hopelessness during the last month. Reasons to be nervous in old age include physical pain, emotional health issues, insufficient rest, and frustration. In previous studies, it was also shown that hopelessness is common among the elderly (40). This evidence indicates that preventing hopelessness in older adults can help prevent or reduce psychological distress, ultimately improving their mental health.

5.1. Limitations

The findings of our study should be interpreted with several limitations in mind; first, the cross-sectional nature of this study limits our ability to make causal inferences from the analyses. Second, this study was conducted on a part of retired elderly people of Kermanshah city, and its results may not be generalized to all elderly people. However, the use of a standard short questionnaire can be one of the strengths of our study. The K6 is one of the most widely used tools for psychological distress. Kessler's questionnaire has also been used in global mental health surveys (41).

5.2. Conclusions

This survey provided valuable insights regarding the prevalence and demographic factors associated with psychological distress among the elderly in western Iran. The prevalence of psychological distress among the elderly is noticeable. It is important to teach methods to help the elderly cope with psychological distress. The development and implementation of interventions to prevent and reduce psychological distress among the elderly in western Iran should focus more on people with low economic status and men. These findings can be useful for health policy makers in Iran and be used in the planning and development of interventions to prevent and reduce psychological distress among the elderly. These findings not only increase the attention of health educators to the mental health of the elderly in Kermanshah, but also provide basic information for planners in developing more targeted interventions.

Acknowledgements

This document is a section of a master's thesis focusing on health education and promotion at Kermanshah University of Medical Sciences (KUMS) in the west of Iran. We would like to express our gratitude to the deputy vice-chancellor of research at KUMS. The authors appreciate the guidance provided by the Clinical Research Development Center of Motazedi Hospital in Kermanshah.

Footnotes

Authors' Contribution: M. M. A. and F. J. contributed to the idea of study interpretation; M. M. N. contributed to the data analysis; S. P. contributed to the set-out of the first draft of the manuscript; All authors participate in the final approval of the revised manuscript for publication.

Conflict of Interests Statement: No conflict of interest was reported by the authors.

Data Availability: The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethical Approval: The Ethics Committee of KUMS (code: IR.KUMS.REC.1401.363) has granted approval for this study.

Funding/Support: This research was supported by the Deputy for Research and Technology at KUMS (research code: 4010663).

Informed Consent: All participants had provided written informed consent, in accordance with the Declaration of Helsinki.

References

1. Zhang T, Yang K, Ji S, Ananiadou S. Emotion fusion for mental illness detection from social media: A survey. *Inf Fusion*. 2023;**92**(C):231-46. https://doi.org/10.1016/j.inffus.2022.11.031.
2. Abolfotouh MA, Almutairi AF, Almutairi Z, Salam M, Alhashem A, Adlan AA, et al. Attitudes toward mental illness, mentally ill persons, and help-seeking among the Saudi public and sociodemographic correlates. *Psychol Res Behav Manag*. 2019;**12**:45-54. [PubMed ID: 30679929]. [PubMed Central ID: PMC6338115]. https://doi.org/10.2147/PRBM.S191676.
3. Yaghoubi B, Nemati R, Agin K, Beigi Dehaghi AM, Gazmeh M, Rezaei F, et al. Mediating role of coping styles on the relationship between personality types and mental disorders in cardiovascular patients: a cross-sectional study in Iran. *BMC Psychiatry*. 2023;**23**(1):236. [PubMed ID: 37029344]. [PubMed Central ID: PMC10080519]. https://doi.org/10.1186/s12888-023-04742-8.
4. Kakaei H, Maleki F, Biderafsh A, Valizadeh R, Mansournia MA, Pakzad I, et al. High prevalence of mental disorders: a population-based cross-sectional study in the city of Ilam, Iran. *Front Psychiatry*.

2023;**14**:1166692. [PubMed ID: 37383610]. [PubMed Central ID: PMC10293629]. https://doi.org/10.3389/fpsyt.2023.1166692.

5. Guo H, Jiang J, Li Y, Long X, Han J. An aging giant at the center of global warming: Population dynamics and its effect on CO(2) emissions in China. *J Environ Manage*. 2023;**327**:116906. [PubMed ID: 36462488]. https://doi.org/10.1016/j.jenvman.2022.116906.
6. Sinha P, Hussain T, Boora NK, Rao GN, Varghese M, Gururaj G, et al. Prevalence of Common mental disorders in older adults: Results from the National Mental Health Survey of India. *Asian J Psychiatr*. 2021;**55**:102463. [PubMed ID: 33212298]. https://doi.org/10.1016/j.ajp.2020.102463.
7. Shao M, Chen J, Ma C. Research on the Relationship between Chinese Elderly Health Status, Social Security, and Depression. *Int J Environ Res Public Health*. 2022;**19**(12). [PubMed ID: 35742744]. [PubMed Central ID: PMC9223444]. https://doi.org/10.3390/ijerph19127496.
8. Liu X, Liu F, Ruan W, Chen Y, Qu S, Wang W. Mental health status and associated contributing factors among the Hakka elderly in Fujian, China. *Front Public Health*. 2022;**10**:928880. [PubMed ID: 35937219]. [PubMed Central ID: PMC9354451]. https://doi.org/10.3389/fpubh.2022.928880.
9. Abu-Kaf S, Nakash O, Hayat T, Cohen M. Social Support and Psychological Distress among the Bedouin Arab Elderly in Israel: The Moderating Role of Gender. *Int J Environ Res Public Health*. 2022;**19**(7). [PubMed ID: 35410038]. [PubMed Central ID: PMC8998207]. https://doi.org/10.3390/ijerph19074358.
10. Lee YC, Chatterton ML, Magnus A, Mohebbi M, Le LK, Mihalopoulos C. Cost of high prevalence mental disorders: Findings from the 2007 Australian National Survey of Mental Health and Wellbeing. *Aust N Z J Psychiatry*. 2017;**51**(12):1198-211. [PubMed ID: 28565923]. https://doi.org/10.1177/0004867417710730.
11. Mechanic D. Is the prevalence of mental disorders a good measure of the need for services? *Health Aff*. 2003;**22**(5):8-20. [PubMed ID: 14515877]. https://doi.org/10.1377/hlthaff.22.5.8.
12. Wagner J, Hoppmann C, Ram N, Gerstorf D. Self-esteem is relatively stable late in life: the role of resources in the health, self-regulation, and social domains. *Dev Psychol*. 2015;**51**(1):136-49. [PubMed ID: 25546600]. [PubMed Central ID: PMC4397980]. https://doi.org/10.1037/a0038338.
13. Islam FMA. Psychological distress and its association with socio-demographic factors in a rural district in Bangladesh: A cross-sectional study. *PLoS One*. 2019;**14**(3). e0212765. [PubMed ID: 30865656]. [PubMed Central ID: PMC6415806]. https://doi.org/10.1371/journal.pone.0212765.
14. Matud MP, Garcia MC. Psychological Distress and Social Functioning in Elderly Spanish People: A Gender Analysis. *Int J Environ Res Public Health*. 2019;**16**(3). [PubMed ID: 30691104]. [PubMed Central ID: PMC6388209]. https://doi.org/10.3390/ijerph16030341.
15. Bruzeguini MV, Corassa RB, Wang YP, Andrade LH, Sarti TD, Viana MC. The performance of K6 as a screening tool for mood disorders: A population-based study of the Sao Paulo metropolitan area. *Early Interv Psychiatry*. 2024;**18**(5):320-8. [PubMed ID: 37655542]. https://doi.org/10.1111/eip.13460.
16. Atkins J, Naismith SL, Luscombe GM, Hickie IB. Psychological distress and quality of life in older persons: relative contributions of fixed and modifiable risk factors. *BMC Psychiatry*. 2013;**13**(1):249. [PubMed ID: 24103220]. [PubMed Central ID: PMC3852717]. https://doi.org/10.1186/1471-244X-13-249.
17. Zhang L, Liu X, Tong F, Zhou R, Peng W, Yang H, et al. The prevalence of psychological disorders among cancer patients during the COVID-19 pandemic: A meta-analysis. *Psychooncology*. 2022;**31**(11):1972-87. [PubMed ID: 35950545]. [PubMed Central ID: PMC9538248]. https://doi.org/10.1002/pon.6012.
18. Bessaha ML. Factor Structure of the Kessler Psychological Distress Scale (K6) Among Emerging Adults. *Res Soc Work Pract*. 2015;**27**(5):616-24. https://doi.org/10.1177/1049731515594425.
19. Hajebi A, Motevalian A, Amin-Esmaeili M, Rahimi-Movaghar A, Sharifi V, Hoseini L, et al. Adaptation and validation of short scales for assessment of psychological distress in Iran: The Persian K10 and K6. *Int J Methods Psychiatr Res*. 2018;**27**(3). e1726. [PubMed ID: 29888523]. [PubMed Central ID: PMC6877187]. https://doi.org/10.1002/mpr.1726.
20. Liu X, Chen T, Chen S, Yatsugi H, Chu T, Kishimoto H. The Relationship between Psychological Distress and Physical Frailty in Japanese Community-Dwelling Older Adults: A Cross-Sectional Study. *J Frailty Aging*. 2023;**12**(1):43-8. [PubMed ID: 36629083]. https://doi.org/10.14283/jfa.2022.63.
21. Matsumura K, Kakiuchi Y, Tabuchi T, Takase T, Ueno M, Maruyama M, et al. Risk factors related to psychological distress among elderly patients with cardiovascular disease. *Eur J Cardiovasc Nurs*. 2023;**22**(4):392-9. [PubMed ID: 35816037]. https://doi.org/10.1093/eurjcn/zvac064.
22. Sujiv A, Kalaiselvi S, Tiwari MK, Deshmukh P. Social isolation, social support, and psychological distress among the elderly during the COVID-19 pandemic: A cross-sectional study from central India. *Indian J Public Health*. 2022;**66**(4):451-7. [PubMed ID: 37039173]. https://doi.org/10.4103/ijph.ijph_482_22.
23. Asante D, Rio J, Stanaway F, Worley P, Isaac V. Psychological distress, multimorbidity and health services among older adults in rural South Australia. *J Affect Disord*. 2022;**309**:453-60. [PubMed ID: 35490879]. https://doi.org/10.1016/j.jad.2022.04.140.
24. Salari M, Rahimi Z, Kalantari R, Jamali J. Evaluating the Agreement between k-median and Latent Class Analysis for Clustering of Psychological Distress Prevalence. *J Biostat Epidemiol*. 2023;**8**(4). https://doi.org/10.18502/jbe.v8i4.13353.
25. Cotton SM, Menssink J, Filia K, Rickwood D, Hickie IB, Hamilton M, et al. The psychometric characteristics of the Kessler Psychological Distress Scale (K6) in help-seeking youth: What do you miss when using it as an outcome measure? *Psychiatry Res*. 2021;**305**:114182. [PubMed ID: 34455216]. https://doi.org/10.1016/j.psychres.2021.114182.
26. Jamali H, Rahimi Z, Jamali J. [Evaluation of Demographic Factors Related to Psychological Distress in Military Personnel of Razavi Khorasan province, Iran]. *J Mar Med*. 2023;**5**(2):76-83. FA. https://doi.org/10.30491/5.2.76.
27. Sullivan P, Blacker M, Murphy J, Cairney J. Levels of Psychological Distress of Canadian University Student-Athletes. *Can J High Educ*. 2019;**49**(1):47-59. https://doi.org/10.47678/cjhe.v49i1.188192.
28. Rice SM, Kealy D, Oliffe JL, Treeby MS, Ogrodniczuk JS. Shame and guilt mediate the effects of alexithymia on distress and suicide-related behaviours among men. *Psychol Health Med*. 2020;**25**(1):17-24. [PubMed ID: 30950285]. https://doi.org/10.1080/13548506.2019.1601747.
29. Safarzadeh S, Savari K, Dashtbozorgi Z. [Comparison of Distress Tolerance, Coping Styles, Spiritual Intelligence and Happiness among Elderly Men and Women]. *Aging Psychol*. 2017;**2**(4):237-48. FA.
30. Sathyanath MS, Kundapur R. Epidemiological Correlates of Psychological Distress in a Rural Community of South India: A Cross-sectional Study. *Indian J Community Med*. 2020;**45**(2):240-3. [PubMed ID: 32905159]. [PubMed Central ID: PMC7467195]. https://doi.org/10.4103/ijcm.IJCM_129_19.
31. Cheon Y, Park J, Jeong BY, Park EY, Oh JK, Yun EH, et al. Factors associated with psychological stress and distress among Korean

adults: the results from Korea National Health and Nutrition Examination Survey. *Sci Rep*. 2020;**10**(1):15134. [PubMed ID: 32934275]. [PubMed Central ID: PMC7492217]. https://doi.org/10.1038/s41598-020-71789-y.

32. Sperandei S, Page A, Spittal MJ, Pirkis J. Low education and mental health among older adults: the mediating role of employment and income. *Soc Psychiatry Psychiatr Epidemiol*. 2023;**58**(5):823-31. [PubMed ID: 34357405]. https://doi.org/10.1007/s00127-021-02149-y.
33. Wippold GM, Tucker CM, Roncoroni J, Henry MA. Impact of Stress and Loneliness on Health-Related Quality of Life Among Low Income Senior African Americans. *J Racial Ethn Health Disparities*. 2021;**8**(4):1089-97. [PubMed ID: 32940896]. https://doi.org/10.1007/s40615-020-00865-w.
34. Ribeiro-Goncalves JA, Costa PA, Leal I. Loneliness, ageism, and mental health: The buffering role of resilience in seniors. *Int J Clin Health Psychol*. 2023;**23**(1):100339. [PubMed ID: 36168598]. [PubMed Central ID: PMC9485034]. https://doi.org/10.1016/j.ijchp.2022.100339.
35. Lotfalinezhad E, Momtaz YA, Foroughan M, Sahaf R. Psychological distress among a sample of Iranian older adults. *J Gerontology Geriatrics*. 2019;**67**(1).
36. Han B, Gfroerer JC, Colpe LJ, Barker PR, Colliver JD. Serious psychological distress and mental health service use among community-dwelling older U.S. adults. *Psychiatr Serv*. 2011;**62**(3):291-8. [PubMed ID: 21363901]. https://doi.org/10.1176/ps.62.3.pss6203_0291.
37. Nguyen LH, Vu HM, Vu GT, Tran TH, Pham KTH, Nguyen BT, et al. Prevalence and Factors Associated with Psychological Distress among Older Adults Admitted to Hospitals After Fall Injuries in Vietnam. *Int J Environ Res Public Health*. 2019;**16**(22). [PubMed ID: 31731721]. [PubMed Central ID: PMC6888520]. https://doi.org/10.3390/ijerph16224518.
38. Dehghanpouri H, Ebrahimi S, Chavoshi S. [Investigate the Effect of Death Anxiety on the Psychological Distress of Ecotourist Elderly by the Mediation Role of Mindfulness]. *J Soc Work*. 2021;**10**(3):15-26. FA.
39. Chan K, Moller M, Marsack-Topolewski C, Winston P, Jennings R, Prifti A. Age Differences in Non-Medical Prescription Opioid Use and Psychological Distress. *Subst Use Misuse*. 2020;**55**(11):1808-16. [PubMed ID: 32441182]. https://doi.org/10.1080/10826084.2020.1765808.
40. Choudhary P, Naz S. Social Connectedness, Spirituality, Quality of Life, and Hopelessness among Older Adults. *Ann Rom Soc Cell Biol*. 2021;**25**(6):12241-53.
41. Lotfalinezhad E, Barati F, Sahaf R, Shati M, Abolfathi Momtaz Y, Forughan M, et al. Psychometric Properties of the Persian Kessler Psychological Distress Scale Among Iranian Older Adults. *Iran J Health Sci*. 2023;**11**(1):21-8. https://doi.org/10.32598/ijhs.11.1.909.2.