

The relationship between depression and older age life expectancy in hospitalized patients

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Abstract

Context: Elderly is regarded as a critical period of human life, which the related issues and needs in this period are socially necessitated to be taken into consideration, especially in the elderly with heart disease. Depression is an important problem in elderly period. Older age peoples with chronic disease such as cardiovascular disease experience less life expectancy.

Aims: Considering the importance of this issue, the present study was designed to determine the relationship between depression and older age heart patients' life expectancy in the heart center of Mazandaran.

Setting and Design: This descriptive-correlative study was conducted on 212 patients selected through simple random sampling heart center of Mazandaran in 2017.

Material and Method: Data collection tools included a demographic questionnaire, Beck Depression Inventory questionnaire, and life expectancy questionnaire (adult hope scale).

Results: The mean age of the participants was 67.15 ± 6.22 years. The mean depression scale was 21.5 ± 11.19 . Based on the results, 26.4% showed no sign of depression, 55.2% were slightly depressed, 13.8% were moderately depressed, and 4.7% were severely depressed. The total score of life expectancy in elderly age was 39.6 ± 6.31 . There was no significant relationship between depression and life expectancy ($P = 0.4$).

Conclusion: Based on the findings, slightly depressed was common among the elderly with heart disease. Thus, more attention is necessary to be paid to this specific topic, and some preventative measures are essential in the elderly with heart diseases. They had optimal practice toward life expectancy that needs to more attention and healthy communication and strong family connections in order to maintain and continue optimal life expectancy.

Keywords: Depression, Heart center, Life expectancy, Older age

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INTRODUCTION

Elderly is a sensitive period of human life that elderly people are at risk from problems such as increasing chronic diseases such as cardiovascular disease, and attention to

the problems and needs of this stage is a social necessity.^[1] According to the World Health Organization, elderly is a relative thing, and this term applies to people over the age of 60 years.^[2] Almost 31 countries each have more than 2

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million older people over the age of 60 years. In developing countries, elderly population is growing. Furthermore, in Iran, the population of the elderly is increasing rapidly due to the decline in birth and death rates.^[3,4] According to the census, the population of Iran in 2011 was about 74 million that about 8.2% of them were older than 60 years old.^[5]

The most important mental illness of the elderly is depression.^[6] The prevalence of depression and loneliness in the elderly of the whole country reported 22.4%.^[7] The prevalence of depression in the patients with heart failure is in the range of 13%–42%,^[8] and in patients with cardiovascular disease, it is in the range of 30%–45%.^[9] A study indicated that around 12% of elderly people in Europe had depressive symptoms.^[10] Life expectancy represents the average of years that a person will live, if the risk of death for future years of his life is similar to other people.^[11] The study indicated that 22% of elderly people had a major depression and 12% of them had a depressive mood disorder.^[12] The prevalence of depression in the elderly with cardiovascular disease was 2–3 times more than another.^[9]

Research indicated that the elderly who had a high degree of satisfaction with their psychological needs had significant aim in their life and had a personal growth and also reported lower depression.^[13] The results of study indicated that the elderly experience less hope than those who divorced, widowed, and rejected.^[14] Elderlies with heart diseases have a lower life expectancy than elderly without heart disease due to some of elderlies death because of heart disease.^[15] In a study, life without disabilities, physical health, healthy nutrition, and optimal physical activity have been shown to be the factors affecting life expectancy, and women report more life expectancy than men.^[16] Research indicated that optimal situations such as physical health, active free time, exercise, and lack of physical and mental constraints lead to an increase in life expectancy in the elderly.^[17]

According to the community health and the growth of the population of the elderly with cardiovascular disease, the study of older age heart patients' depression and their life expectancy as a base indicator in public health is important. Life expectancy seems to be related to physical and psychological well-being, high self-esteem, positive thinking, and social relationships.^[18] Therefore, this study was conducted to determine the relationship between depression and life expectancy in the elderly with heart disease.

MATERIAL AND METHODS

This research is cross-sectional study aimed at determining the relationship between depression and older age heart

patients' life expectancy in a heart center of Mazandaran in 2017. Sampling was a simple random type based on draw. All of the elderly referred to Mazandaran heart center clinics, according to the criteria for entering, were selected randomly and entered the study based on written consent. The criteria for entering were older age people over 60 years, ability to answer questions, lack of Alzheimer's disease, and personal satisfaction of the elderly to participate in the study, and the criteria for exiting were Alzheimer's disease and none personal satisfaction of the elderly in the study. In this study, the sample size was followed. According to a study entitled depression detection in the elderly living in Kermanshah in 2012, sample size was 212 people.^[19]

Demographic questionnaire, Beck Depression Inventory (BDI), and adult hope scale (AHS) were used to collect data. The demographic questionnaire included age, gender, marital status, education, occupation, and history of illness. The BDI questionnaire has 21 questions with four items that are scored between 0 and 3, and individuals must select an item that is more consistent with their current conditions. The questionnaire scores from 0 to 63. In this study, scores 46–63 indicate severe depression, scores 30–45 moderate depression, scores 15–30 mild depression, and scores 0–15 without depression. Validity and reliability of this questionnaire were confirmed by Rodin (1999) and Beck (2009).^[19] To assess the reliability of the questionnaire, a reliability coefficient was reported 0.78.^[20] The reliability of this questionnaire was calculated through Cronbach's alpha of 0.88 in the present study. AHS questionnaire has 12 questions with 4 items that scored from 1 = completely false to 4 = completely true. The questionnaire scores from 12 to 48. The total score obtained shows the overall score of hope for each individual. The score over than 30 indicates a higher life expectancy.^[21] Snyder *et al.* obtained the reliability of this questionnaire through the Cronbach's alpha 0.84 and through a test–retest 0.80 over a period of 10 weeks.^[3] The reliability of this questionnaire was calculated through Cronbach's alpha of 0.84 in the present study.

For data analysis, descriptive statistic (frequency, mean, and standard deviation) and *t*-test and regression, analysis of variance, Kolmogorov–Smirnov test, and Pearson's correlation test were performed using SPSS 16 (version 16-SPSS 16.0 Student Version for Windows Inc. SPSS©2009).

RESULTS

The results of the study indicated that the data are normal distribution based on the Kolmogorov–Smirnov test.

The average age of 212 elderlies with heart disease was 67.15 ± 6.22 years that the minimum and maximum age of the elderly has been 60 and 89 years, respectively [Table 1].

In this study, the average of depression scores in the elderly was 21.5 ± 11.19 . Furthermore, in terms of depression levels, 26.4% (56 persons) were nondepressed, 55.2% (117 persons) had mild depression, 13.7% (29 persons) had moderate depression, and 7.4% (10 persons) had severe depression.

The results of the study indicated that there is a significant relationship between depression and education ($P = 0.001$). In this way, depression in the elderly with under diploma was lower. Using Pearson test, there is no significant relationship between depression and gender ($P = 0.5$), and there is no significant relationship between depression and age ($P = 0.9$), too. There was no statistically significant relationship between depression levels with gender ($P = 0.3$) and between depression levels with age ($P = 0.7$), but the average of depression in the elderly with 60–70 years old was more. Depression in elderly widows was more than married people, but there was no statistically significant relationship ($P = 0.6$).

The results of this study indicated that the overall life expectancy score in the elderly was 39.6 ± 6.31 , indicating a high life expectancy in the elderly. Life expectancy in married elderly was significantly more than single elderly ($P = 0.03$). There was no significant relationship between life expectancy and age, but the average of life expectancy in the elderly was more in the age group of 70–89 years. The mean and frequency of depression and life expectancy in the elderly separated by gender and marital status are presented in Table 2.

Using Pearson test, there was no significant relationship between depression and life expectancy in the elderly ($P = 0.3$). The results of regression test of depression and related factors are presented in Table 2.

DISCUSSION

The results of the present study indicated that the correlation between depression and life expectancy in elderlies with heart disease was not statistically significant, but a study indicated that the elderly who had a higher sense of hope had a positive attitude to themselves and their past life and felt satisfaction in their talents, abilities, and activities, and they will have better psychological function.^[3]

Table 1: Demographic factors of elderlies with cardiovascular diseases in a heart center of Mazandaran in 2017

Demographic factors	Frequency (%)	Mean±SD	
		Depression	Life expectancy
Gender			
Woman	118 (55.7)	21.06±10.3	39.84±5.95
Man	94 (44.3)	22.04±12.25	39.29±6.76
<i>P</i>		0.5	0.3
Marital status			
Single	27 (12.7)	20.14±7.81	38.03±5.92
Married	130 (61.3)	21.9±11.86	39.58±6.64
Divorced	46 (21.7)	20.19±10.25	40.91±4.91
Widow	9 (4.3)	26.11±14.23	37.88±8.22
<i>P</i>		0.6	0.03
Education			
Under diploma	156 (73.5)	19.99±10.37	40.75±6.55
Diploma	44 (20.8)	26.79±12.91	39.22±7.12
BS	7 (3.3)	21.71±11.98	40.42±8.88
MSc and over	5 (2.4)	21.00±4.17	46.08±1.50
<i>P</i>		0.001	0.6
Occupation			
Employee	23 (10.8)	18.78±9.66	40.43±5.89
Worker	44 (20.8)	21.18±11.07	42.38±3.93
Self-employment	128 (60.4)	22.25±11.67	39.50±7.57
another	17 (8)	20.29±9.82	43.82±4.83
<i>P</i>		0.3	0.7
History of illness			
High blood lipid	80 (37.7)	21.28±9.95	39.28±7.07
Hypertension	45 (21.2)	18.35±10.19	40.00±6.60
Diabetes	46 (21.7)	21.53±12.90	41.78±5.63
Another disease	41 (19.4)	25.12±9.03	40.14±8.15
<i>P</i>		0.08	0.3

SD: Standard deviation

Table 2: The results of regression test of depression and related factors

Variable	Regression	
	β	<i>P</i>
Life expectancy	0.060	0.3
Age	0.005	0.9
Gender	0.043	0.5
Marital status	0.036	0.6
Education	0.143	0.03
Occupation	0.064	0.3
History of illness	0.127	0.06

In other words, who had a higher life expectancy, do not have psychological problems such as depression. But in this study the participations were elderly with heart disease and the heart disease plays an important role in depression and life expectancy. As a result, the relationship between these two variables is also affected.

In this study, most of the elderly with heart disease had a mild depression that was consistent with the study that conducted among the elderly of Mashhad nursing homes.^[22] It is important to provide primary prevention to prevent the onset of severe depression. Simple preventive measures are not comparable with the costs and time required for care and maintenance. The results of depression in the elderly can help families and politicians in future planning and

attaining higher levels of health in the elderly and also can help identifying risk factors and at-risk people.^[23]

In the Davoodi's study, depression in none educational elderly people was more.^[4] However, in this study, depression and its levels in peoples over diploma were more. In other words, this result is different from the findings of Davoodi.^[4] It seems that the reason for the difference is that in Davoodi's study, the population studied was elderly referred various locals' hospital, but this study conducted in the elderly in a heart center of Mazandaran. Furthermore, cardiovascular disease can affect depression.

In the present study, elderly widows had more depression than married elderly, which is consistent with another studies.^[24] This result indicated that married elderlies have more comfortable with psychological and family support than elderly widows and that can prevent the incidence of depression.^[25]

In this study, depression in men was more than women, which is not consistent with the other study.^[19] The reason for the difference is that they studied the severity of depression. In the present study, there was no statistically significant relationship between the two groups. In the study of Karami *et al.*, there was no significant relationship between depression and prevalence of depression too. Moreover, in terms of the severity of depression was more in woman than men.

In the current study, older age life expectancy was high. A research indicated that high levels of hope and life expectancy in the elderly lead to high self-esteem and positive thinking in them, which would lead to a better quality of life for the elderly.^[3]

The results of the study indicated that life expectancy in women was more than men, which is consistent with the findings of the other study. Furthermore, according to the global and national reports, life expectancy in women is more than men, which is consistent with the results of this study.^[26] Moreover, it is consistent with the results of the study by Kim and Kim.^[27]

According to the results of this study, life expectancy at married elderly was more than single elderly or spouse, which is similar to the results of another study.^[26] The presence of the elderly in the family and receiving social support from them has increased their life expectancy.

The limitation of this study is that it is only conducted in the elderly with heart disease. According to the growing

population of the elderly and the many problems with this life cycle, more research is needed on mental health in the elderly. In this regard, it is suggested to investigate the relationship between depression and life expectancy in the elderly, including cardiac and noncardiac older age.

CONCLUSION

According to the results of this study and previous studies, life expectancy increase older age heart patients desire to live better, spending more time with family and friends and think about their physical and mental health. It is necessary for the family and authorities to provide a basis for physical and mental health, respect for the elderly, create a sense of independence and self-affirmation, strengthen communication, and provide income for the elderly in order to increase their life expectancy. It can lead to an increase in their quality of life and a reduction in depression. One of the necessary measures to prevent and treat mental illness of the elderly is the inclusion of teaching how to care for the elderly in the medical group curriculum.

Conflicts of interest

There are no conflicts of interest.

Author contribution

All authors contributed to this research.

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REFERENCES

1. Darvishpoorekakhaki A. Aging quality of life and health measurement tools. *Iran J Res Med* 2009;33:162-73.
2. Sayedmirzaee M. Looking at the experience of aging concerns about Japan. *Iran J Hum Sci* 2007;53:201-22.
3. Nikdel F, Arabzadeh M, Ghazanfari N. The survey of relationship between memory self-efficacy and hope with quality of life in older adults of Kohgiluyeh and Boyer-Ahmad in 2016. *J Gerontol* 2016;1:19-26.
4. Davoodi F, Etemad K, Taheri TP, Khodakarim S. The relationship between depression and cognitive impairment with falls leading to fractures in elderly. *J Saf Promot Inj Prev* 2016;4:75-82.
5. Nabavi SH, Alipour F, Hejazi A, Rabbani E, Rashedi V. Relationship between social support and mental health in older adults. *Med J Mashhad Univ Med Sci* 2014;57:841-6.
6. Nejati V, Ashayeri H. Study of the relationship between cognitive

- disorders and depression among the elderly. *Salmand J* 2006;1:112-18.
7. Rahgozar M, Mohammad NasrAbadi M. The feeling of depression and stress among elderly. *J Hakim* 2008;2:103-13.
 8. Foroughan M, Akbarikamrani A, Taraghi Z. Psychosocial factors and self-care behaviors among elderly with chronic heart failure. *Iran J Nurs Res* 2017;12:59-66.
 9. Celano CM, Huffman JC. Depression and cardiac disease: A review. *Cardiol Rev* 2011;19:130-42.
 10. Li J, Theng YL, Foo S. Does psychological resilience mediate the impact of social support on geriatric depression? An exploratory study among Chinese older adults in Singapore. *Asian J Psychiatr* 2015;14:22-7.
 11. Snyder M. The discursive proportion of hope: A qualitative analysis of cancer patients' speech. *J Qual Health Res* 2006;12:173-93.
 12. Baker FM, Miller CL. Screening a skilled nursing home population for depression. *J Geriatr Psychiatry Neurol* 1991;4:218-21.
 13. Ferrand MP. Interacting effects of multiple roles on women's health. *J Health Soc Behav* 2014;22:216-36.
 14. Baily TC, Snyder CR. Satisfaction with life and hope: A look at age and marital status. *Psychol Rec* 2007;57:233-40.
 15. Shakeri N, Eskandari F, Hajsheikholeslami F, Momenan AA, Azizi F. Life expectancy of Tehranian elderly and its attributable risk factors – The Tehran lipid and glucose study (1998-2011). *Iran J Epidemiol* 2013;9:9-16.
 16. Muangpaisan W, Assantachai P, Intalaporn S, Richardson K, Brayne C. Health expectancies in the older Thai population. *Arch Gerontol Geriatr* 2011;53:3-7.
 17. Keeler E, Guralnik JM, Tian H, Wallace RB, Reuben DB. The impact of functional status on life expectancy in older persons. *J Gerontol A Biol Sci Med Sci* 2010;65:727-33.
 18. Griffin B, Loh V, Hesketh B. A mental model of factors associated with subjective life expectancy. *Soc Sci Med* 2013;82:79-86.
 19. Karami N, Rezai J, Jozanifar Y, Abdi M, Aghaei A, Astanegi S, *et al.* A survey of the depression rate among the elderly in Kermanshah, 2012. *J Clin Res Paramed Sci* 2016;5:23-30.
 20. Azkhosh M. Application of psychological and clinical diagnostic tests. *Ment J* 2008;12:224-6.
 21. Sanaee M, Zardoshtian SH, Hosseini SR. The effect of physical activity on quality of life and life expectancy of the elderly in Mazandaran. *Sports Manag Stud* 2013;5:135-56.
 22. Basseri V. The study of Mental Health and the Level of Depression Among Elderly of Mashhad Nursing Homes in 2006. Book of Abstract of the Third Congress on Elderly in Iran and the World; 2007.
 23. Nodehi Moghadam A, Ehsanifar F. Study of physical movement disorders among elderly who come to the rehabilitation center of Behzisti of Tehran. *Salmand J* 2006;1:1237.
 24. Mobasheri M, Moezy M. The prevalence of depression among the elderly population of Shaystegan and Jahandidegan nursing homes in Shahrekord. *J Med Sci Summer* 2010;12:89-95.
 25. Hsu HC. Does social participation by the elderly reduce mortality and cognitive impairment? *Aging Ment Health* 2007;11:699-707.
 26. Barzegar Bafrooei K, Kamali Zarch M, Afkhami Aghda M. Comparison of perceived social support and life expectancy in the elderly resident and nonresident of nursing homes in Yazd. *Two Mon Sci J Yazd Sch Public Health* 2015;14:56-64.
 27. Kim JI, Kim G. Socio-ecological perspective of older age life expectancy: Income, gender inequality, and financial crisis in Europe. *Global Health* 2017;13:58.