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Prevalence of depression, anxiety and stress disorders in elderly people residing in Khoy, Iran (2014-2015)

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Abstract

Introduction: Psychiatric disorders such as depression, stress, and anxiety are factors that affect the quality of life, suicide and many physical problems, and socioeconomic in elders. Considering the importance of the issue and increasing the number of elderly people in this County, researchers decided to investigate the levels of stress, anxiety, and depression in the elderly health centers of Khoy, Iran.

Methods: This cross-sectional study was done on 383 elderly people referred to health centers in Khoy County. A random cluster sampling was used in this study where each health care is considered as a cluster. The Depression, Anxiety, Stress Scale 21 (DASS-21) standard questionnaires was used for data collection. The SPSS software was used for all computations. Data were analyzed using descriptive statistic, t-test, and one-way ANOVA. P < 0.050 was determined to be significant.

Results: The results of this study showed that 1.3% of the elderly people suffer from very severe stress, 1.3% from severe depression, and 3.1% from severe anxiety. Likewise, the comparison between anxiety, stress, and depression disorders with demographic variables showed that there is a significant association between these disorders and sex, education, marital status, medical condition, as well as their housing conditions (P < 0.050).

Conclusion: The results of this study indicated anxiety disorders, depression, and stress prevail among the elderly. In addition, some factors such as education, housing, medical condition, and marital status had significant effects on anxiety disorders, depression, and stress. Therefore, more attention is deserved in these aspects. Moreover, appropriate measures need to be taken to improve the mental health of elderly people.

Introduction

Depression and anxiety are psychological symptoms of stress. These disorders are important factors affecting mental health that interferes with the professional roles or responsibilities assumed by individuals.[1]

Depression is one of the most common psychiatric disorders and suicide risk factor in the elderly that cause 24% of completed suicides, reduction of quality of life, increase in drug consumption, care costs and many other social and economic problems in the elderly.[2-4]

It should be noted that aging is a stage in

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human life that is normally associated with a decrease in physical and mental abilities. The reduction in these abilities together with sedentary, present day lifestyle increase the problems facing the elderly and impose economically, socially and psychologically heavy costs to a given society.[5] One of the important indices in elderly people, which make them to have a good quality of life, is their mental health. Some of the most important factors determining their state of mental health are loneliness and lack of social connections.[6] For instance, there is some study which shows a negative relationship between loneliness and physical and mental health in the elderly people.[7] However, elderly people's awareness about ways of reducing stress and anxiety such as relaxation techniques, can reduce their anxiety, and stress.[8]

The world's population is aging rapidly. According to research conducted in 2006, suggested that people 60 years old and above, will be around 650 million in 2025. In 2050, more than two billion people worldwide will be 60 years of age or beyond.[9] It is possible that this increase in the elderly people's population will bring about serious problems for communities and special attention should be paid to their physical and mental needs.[10] Health problems along with other issues such as limited financial resources will make them feel they have no control over their lives. As a result, these problems will lead to negative emotions such as sadness, anxiety, low self-esteem, social isolation, despair and dejection in the elderly person. Depression, the biggest mental problem, is the most serious consequence of such emotions.[11]

Mental health is an important indicator of the health status of the elderly and it has great importance in achieving successful aging and having a good quality life among the elderly in different communities. Older people, particularly people with Alzheimer disease, are more likely to develop mental illness. These people impose a lot of emotional and financial pressures on their families and about 70% of them are stay-at-homes and family members are responsible for taking care of them. In addition, in another line of research, variables of age and sex are mentioned to be among the main factors affecting their mental health status. Above all, other variables such as unfavorable living conditions, marital status as well as the educational level of the participants, especially in the elderly can lead to an adverse mental condition.[6] As noted earlier, social isolation and living alone are among factors that affect the incidence of depression in elderly persons. In contrast, participation in social activities is suggested to reduce their risk of death even in care centers.[12]

In one of the study, the results diagnosed 17.8% of women and 9.4% of men beyond 60 years of age to be suffering from depression, according to Diagnostic and Statistical Criteria and Mental Disorders-4th Edition (DSM-IV). Furthermore, epidemiological studies have shown that the prevalence of depression is 10-30% with families who do not have elder people, however, the corresponding value families with elderly people is about 30-45%.[13]

One study reported. The prevalence of major depression was 2-4% in people over 65 years in America and mild depression was 22-44%.[14] Furthermore, the study conducted in Iran by Ghafari et al. indicates the prevalence of depression, anxiety, and stress among the elderly in Tehran, Iran.[9] Alizadeh et al. in their study[6] reported that one out of every 10 elderly people is suffering from anxiety and severe depression.

According to the foregoing paragraphs and the importance of aging and the problems associated with them, proper planning should be carried out to reduce the effects of aging. This needs an awareness of the health status of the elderly in society. Hence, along this line the present study aims at examining stress, anxiety, and depression status in the elderly that were referred to health centers in the Khoy, Iran, in 2014-15.

Methods
This cross-sectional study was carried out in health centers in the county of Khoy in 2014-2015. The study sample consisted of the elderly people. The sample size was estimated 383 persons according to P = 0.500, confidence interval (CI) = 95%, d = 0.05 and power of 80%. However, a total of 390 subjects participate in this study. A random cluster sampling was used for selecting the subjects from 5 urban health care centers. In the first stage, 5 urban health centers were considered as 5 clusters and then the necessary sample size was selected randomly from the list of files in the health centers. Finally, 78 patients were selected from each cluster.

The inclusion criteria were the consent of the participants; their ability to read and write and to be of age 60 or above. The exclusion criteria were a history of confusion and amnesia, a psychiatric history, consumption of drugs used in psychiatric disorders, loss of a close relative in 1 month, and not to be willing to participate.

Two instruments were used in this study. First Depression, Anxiety, Stress Scale 21 (DASS-21) was used to gain an understanding about the level of stress, anxiety, and depression the participants undergo. Further, another instrument was used to further seek the participants' demographic information such as age, sex, marital status, health, educational level, and housing conditions. DASS-21 is a standardized questionnaire which includes 21 questions which use 7 questions to measure any of the symptoms of depression, stress, and anxiety. The questionnaire has been used in different countries including England and its reliability and validity have been confirmed.[15]

The validity of this questionnaire was checked through factor analysis and its internal consistency reliability was investigated by Sahebi et al.[16] on 1070 samples in Iran by simultaneous implementation of Beck depression Inventory (BDI), Zhang anxiety, and perceived stress tests. In general, the obtained reliability and validity coefficient of this instrument with Iranian context were found to be reasonable. Based on this study, the questionnaire was validated to be used in psychological research and clinical situations. Likewise, a study entitled "the study of reliability and validity of the short form of DASS" on 638 persons helped establish the reliability and validity of the scale.[17] The Persian version of the questionnaire DASS-21 translated by Sahebi et al.[16] was used to measure the stress of participants in this study on the ground that this questionnaire had been repeatedly validated in Iran and approved by psychologists. This was a Likert type questionnaire with 4 options on a continuum ranging from no, low, high, and very high levels, indicating levels of stress which were completed through self-report. A score of 0, 1, 2 and 3 was assigned to no, low, high and very high, respectively.

The study protocol was registered with code IR.TBZMED.REC.1393.208 and reviewed and approved by the Institutional Review Board which is the Ethics Committee of Tabriz University of Medical Sciences, Tabriz, Iran. The patients' information was kept confidentially.

Data were analyzed using SPSS software (version 21, SPSS Inc., Chicago, IL, USA), descriptive statistics [n (%)], one-way ANOVA and independent samples t-test. A $P < 0.050$ was considered significant.

Results
In this study, a total of 390 subjects participated in this study. Of them 178 (45.4%) were male. The mean age of the participants was 68.22 (69.18 for male and 67.42 for female). 223 of them (58.2%) were married and 160 of the total participants (41.8%) were single. Regarding their educational status, 263 (68.7%) of the participants were under high school, and 120 (31.3%) had a high school diploma or higher (Table 1).

Based on the findings of the study, 1.3% of the elderly people suffered from very severe stress, 1.3% severe depression, and 3.1%

severe anxiety (Table 2).

A comparison of anxiety, stress, and depression disorders with context variables showed that the disorders significantly associated with gender, education, marital status, diseases and housing (Table 3).

Table 1. Demographic characteristics of the participants

Variables	Sub groups	n (%)
Sex	Male	174 (45.4)
	Female	209 (54.6)
Education	Below diploma	263 (68.7)
	Diploma and higher	120 (31.3)
Marital status	Married	223 (58.2)
	Single	160 (41.8)
Diseases	Yes	268 (70.0)
	No	115 (30.0)
Housing	Personal	265 (69.2)
	Impersonal	118 (26.4)
Activity physical	Yes	123 (32.1)
	No	260 (67.9)

Discussion

This study aimed at evaluating the level of depression, anxiety, and stress among elderly residents of the Khoy County. Likewise, the relationships between depression, anxiety, and stress, with variables of gender, physical activity, education level, disease and marital status were also assessed.

The findings of this study showed that 1.3% of elderly persons in the Khoy County had severe stress, 1.3% severe depression, and 3.1% had severe anxiety. By the same token, the results of a study conducted by Ghafari et al.[9] on the elderly in Tehran also have shown that 4.8% of elderly patients have severe stress, 4.8% severe depression, and have 11.5% severe anxiety. However, the findings of this study are inconsistent with the study conducted by Ghafari et al.[9] One explanation is that the present inconsistencies between the results of different studies may be the function of different environmental conditions in which the elderly persons live. For example, Tehran's environment is more stressful and more anxious than the environments of Khoy.

Table 2. Frequency of stress, depression and anxiety in the elderly based on the levels of variables

Normal	Mild	Moderate	Severe	Very severe	Levels of variables
Variables classification	n (%)	n (%)	n (%)	n (%)	n (%)
Stress	26 (58.2)	75 (19.6)	74 (19.3)	6 (1.6)	5 (1.3)
Depression	167 (43.6)	71 (18.5)	134 (35.0)	6 (1.6)	5 (1.3)
Anxiety	2 (0.5)	55 (14.4)	157 (41.0)	157 (41.0)	12 (3.1)

Table 3. Comparison of mean scores of depression in the elderly referred to health centers in terms of context variable

Variables	Sub groups	Stress	Depression	Anxiety
		Mean ± SD	Mean ± SD	Mean ± SD
Physical activity	Yes	12.26 ± 5.2	11.25 ± 4.44	11.88 ± 3.61
	No	14.6 ± 5.01	12.93 ± 5.73	15.04 ± 3.31
	P	< 0.001	0.002	< 0.001
Gender	Male	15.16 ± 3.47	13.06 ± 4.6	13.63 ± 3.47
	Female	12.75 ± 4.06	11.88 ± 5.95	14.35 ± 3.87
	P	< 0.001	0.043	0.062
Level of education	Below diploma	14.97 ± 5.23	13.24 ± 5.87	15.01 ± 3.46
	Diploma and higher	11.39 ± 4.1	10.53 ± 3.55	11.84 ± 3.31
	P	< 0.001	< 0.001	< 0.001
History of disease	Yes	14.71 ± 5.12	13.19 ± 5.77	15.01 ± 3.59
	No	11.83 ± 4.73	10.53 ± 3.85	11.72 ± 2.87
	P	< 0.001	< 0.001	< 0.001
Married statues	Married	13.15 ± 4.82	12.03 ± 5.78	13.33 ± 3.72
	Single	14.81 ± 5.5	12.9 ± 4.79	15.01 ± 3.47
	P	0.121	0.002	< 0.001
Housing	Personal	12.88 ± 4.67	12.08 ± 4.51	14.01 ± 3.47
	Impersonal	14.27 ± 5.33	12.53 ± 5.75	14.03 ± 3.82
	P	0.015	0.455	0.950

SD: Standard deviation

There are, however, significant associations between these variables: exercise and stress and anxiety and depression. In fact, the elderly persons who did not exercise have more stress, anxiety, and depression compared with those who take some exercise. For instance, the study conducted by Arman[18] on active and inactive elderly women showed that the rates of depression, anxiety, and stress among active and passive elderly peoples are significantly different. In other words, in comparison with inactive elders, active older people have less stress, anxiety, and depression. The reasons behind feeling less stress, anxiety, and depression in active elderly people may be their great health conditions as well as their vitality.

Moreover, the findings of this study showed that the educational level of the elderly people can influence the anxiety, stress, and depression disorders of them. The elderly people who were below the high school diploma had the highest level of anxiety, stress, and depression disorders. The reason of the undesirable symptoms mentioned could be that people who have a higher education level, have easier access to information resources about control of stress, anxiety, and depression. Another line of research which agrees with the findings of our study is the research carried out by Alizadeh et al.,[6] Alizadeh et al.[19] and Motamedi Shalamzari et al.[20] and Manzouri et al.[21]

In addition, the findings of this study showed that stress and depression rate in elderly men and women have statistically significant difference. To be more exact, the older women had higher levels of stress and depression than older men. One of the reasons for the lesser stress disorders, depression, and anxiety experienced by men may be that this gender group has more social support compared with females. For example, a study done by Fuhrer et al.[22] in England showed that men have relatively more intimate relationships and larger social networks than women. However, the results of the study conducted by Alizadeh et al.[6] are inconsistent with the results of our study. In other word, the study conducted by Alizadeh et al.[6] showed that the risk of depression, in women is 1.7 times more than men. Different results may be the result of the mood of the participants in completing questionnaires, gathering information, and so on.

In this study, the relationships between the participant condition (health condition) and stress disorders, anxiety, and depression were significant. The results suggested that the patients with symptomatic of stress disorders, anxiety, and depression are worse. The results of this study are consistent with the study done by Ghafari et al.[9]

Another variable examined in this study was the marital status of the participants. Marital status had a significant effect on the depression and anxiety levels in the elderly participants. The people who had lost their spouses had more depression and anxiety. Although in this study there was not found a statistically significant association between stress level and marital status, the stress rate among seniors who had lost their spouse, were higher. Future studies can further investigate this issue. The results of this study are consistent with the study conducted by Mobasheri and Moezy.[23] Their study showed that elderly people who lived with their wives had a better mental status. Equally, a study conducted in China found that elderly people who lived alone had more anxiety in everyday life.[24]

Based on the findings of this study, housing of the elderly has a significant effect on the stress rate experienced by the participants of this study. Peoples, who lived in their own homes, had lesser stress than those who lived in impersonal homes. The results of the current study are consistent with the findings reached by Alizadeh et al.[6] and Afzalei et al.[25] For example, the results of the study done by Alizadeh et al.[6] showed that elderly people without private housing have depression and anxiety disorders 1.85 times more than those with private housing.

Limitations
This study suffers from two basic limitations. First, the self-reporting technique used for

data collection purposes in measuring stress, anxiety, and depression in the elderly is not a completely reliable method of data collection. It is better to use triangulated data in future studies, which is to use different sources of data such as clinical interviews and other sources. Furthermore, different moods of the elderly to reply to the questionnaire that could confound the result of the study.

Conclusion

According to the findings of this study, several variables seem to affect the mental health of the elderly people, which in turn, can influence the whole society in different ways. Based on the findings discussed above,

it is necessary to be aware of the psychological states of the elderly people and take measured steps to help find solutions and effective strategies through intervention programs to reduce stress disorder, anxiety, and depression in society, especially, in the elderly population.

Conflict of Interests

Authors have no conflict of interest.

Acknowledgments

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