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Original Article

Evaluation of physical and mental health status of elderly residents and non-residents in nursing homes of Chaharmahal and Bakhtiari province in 2018

Zahra Karimi[1], Marjan Sadat Seghayat[2], Fatemeh Fatahian[3], Masoud Lotfizadeh[4*]

[1]Epidemiology Student, Students Research Committee, Shahrekord University of Medical Sciences, Shahrekord, Iran
[2]Internal Medicine/Endocrinology, Faculty of Medicine, Bioscience and Nursing - MAHSA University, Malaysia
[3]Department of Health Education and Promotion, School of Health, Isfahan University of Medical Sciences, Isfahan, Iran
[4]Social Determinants of Health Research Center, Shahrekord University of Medical Sciences, Shahrekord, Iran

*Corresponding Author: Masoud Lotfizadeh, Email: masoud_lotfizadeh@yahoo.com

Abstract

Background and aims: The average age of the population and the number of elderly people have increased with increasing life expectancy. This study aimed to investigate the physical and mental health of the elderly in Chaharmahal and Bakhtiari province, which can provide important evidence for future interventions.

Methods: This cross-sectional (descriptive-analytical) study was performed on 345 elderlies in Chaharmahal and Bakhtiari province in 2018. Census methods were used to select the samples according to the type of residence. Statistical analysis was performed using the Statistical Package for Social Sciences (IBM SPSS statistic, Chicago, IL, USA, version 22). Descriptive and analytical tests were performed using Chi-square, independent t-test, and analysis of variance.

Results: The mean age of participants and the mean score of their mental health were 71.13 and 55.29±11.57, respectively. Diabetes and hypertension (HTN) (27.8%), followed by skeletal problems (11.3%), were the most frequent disorders in the participants. The findings of the study demonstrated a significant difference between depressive status, as well as anxiety and sleep disorders of the elderly in the home and those kept in the nursing home ($P<0.05$).

Conclusion: Overall, the elderly living in nursing homes had more unfavorable mental, emotional, and physical conditions than the elderly living in the home. Therefore, long-term planning to minimize the problems of elderlies is essential. Lifestyle modifications, health education, and screening for this age group are recommended to maintain independence, especially for the elderly in nursing homes.

Keywords: Physical health, Mental health, Elderly

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Introduction

Medical and health advances such as vaccination, increased life expectancy, reduced mortality, and birth rates have led to changes in the demographic of aging globally. This phenomenon is one of the most important economic, social, and health challenges in the 21st century (1-3).

As age increases, health status changes and the probability of contracting physical and mental diseases and related disabilities in the last years of life will be higher (4).

Although aging is a normal lifelong process, there is no typical presentation for it, and it varies from one person to another. These gradual declines in organ functions are not identical in all systems and organs. They would differ from one person to another in terms of severity and extension due to lifestyle, nutrition patterns, environment, and hereditary factors. People over 60 years old are mainly considered old (5,6). According to the World Health Organization (WHO), "Health" is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. Therefore, psychological well-being is one of the cornerstones of a healthy society (7,8).

Psychological disorders are common in the elderly due to various social deprivations, low quality of life, cognitive problems, disabilities, and increased risk of physical disorders. As a result, in the field of global health, it is necessary to consider and address these issues and the needs of this age group (9,10).

It is predicted that if the trend of fertility indices continues, more than 20% of the population of Iran in 2050 will consist of old people (11). In addition, according to the 2016 census, the elderly age group made up 6.1% of the population of Iran, and the share of the elderly in Chaharmahal and Bakhtiari province is 5.8% of the total population of Iran (12).

Niazi et al indicated that the elderly living at home has a better quality of life, compared to the one living in public and private nursing homes in terms of physical and mental health (13). The severity of organ dysfunction and disability increases with increasing age. The movement is the most commonly affected function, which increases the likelihood of requiring help and support in their daily activities, thus consequently transferring the elderly to care centers (14,15). Based on our results in the study conducted in Chaharmahal and Bakhtiari province, 64.9% of the elderly had mild depression, and there was a statistically significant relationship between depression score and age and marital status (16). The study by Sadeghi and Baz Qale demonstrated a higher depression score in elderly nursing home residents than in non-resident elderly (17). Similarly, Zeraati et al concluded that elderly people living in nursing homes have more feelings of depression and death anxiety compared to elderly people who are not living in nursing homes (18).

Maintaining and improving the physical and mental health of the elderly prevent chronic disease and contribute to their independence and participation in family and social activities (19). Abundant information regarding various aspects of the health status of the elderly in each community is needed to recognize their most common diseases and assess the health status of the community to strategize the type of interventions and educational and therapeutic planning for reducing the impacts of aging (20,21). This study was designed and conducted to evaluate the physical and mental health status of elderlies in Chaharmahal and Bakhtiari province.

Materials and Methods

This cross-sectional (descriptive-analytical) study investigated the physical and mental health status of the elderly living in a nursing home or with their families in Chaharmahal and Bakhtiari province.

The sample size of this study was 345 people over 60 years old, of which 34.2% (n = 118) were living in family houses, and the rest (65.8%, n = 227) lived partially (daycare) or entirely in nursing homes. They have been recruited by the census method based on the inclusion criteria and expression of their interest.

We cooperated with the Welfare Organization (Behzisti) in Chaharmahal and Bakhtiari province with an official letter of introduction from this panel (or committee). According to their database, nine nursing homes were under their supervision (including Shahrekord, two boarding houses in Brojen, Pirbaloot, Arjenak, Lordegan, Vardanjan, Ben, and Kharaji). Relevant data were collected from care providers in these centers. The inclusion criteria in this research were being over 60 years (males and females), being residents and non-residents in nursing homes in different parts of Chaharmahal and Bakhtiari province, and being interested in participating in the study. The other criteria were having orientation on time and place, having an ability to speak Persian (for different ethnicities), having no cognitive, speech, or hearing impairments, and being able to attend interviews.

Participants were excluded from the study if they could not answer questions for any reason such as Alzheimer's disease, used medications that affect the level of consciousness and thinking, and did not cooperate with the interviewer. In addition, elderlies with advanced diseases were interviewed based on the discretion of their treating physician. Participants were reassured that their information would be kept confidential. Further, if they are interested in knowing about the study's results, they could be converted to them.

Data were collected using two questionnaires as follows:

The Persian version of the standard 28-item Goldberg General Health Questionnaire was used to assess general health. This validated questionnaire has four general sections, and its reliability has been confirmed in various studies (22-25). This questionnaire measures scales in 4 areas (domains), including physical signs/symptoms, depressive signs/symptoms, social activities, anxiety, and sleep problems. Each part consists of 7 questions that are measured with the 4-point Likert-type scale; in each part, a score of 6 and above and a total score of 23 and above indicate pathologic (Table 1).

Demographic data and contextual information such as age, gender, weight, height, marital status, spouse health situation, level of education, type of accommodation, number of children, employment status, and income were also extracted from a checklist. The other extracted data were elderly lifestyle after the death of the spouses, willingness, and reason for living in the nursing home, underlying diseases, and any physical disabilities. Statistical analysis was performed using the Statistical Package for Social Sciences (IBM SPSS statistic, Chicago, IL, USA, version 22), and descriptive and analytical tests, including Chi-square, independent t-test, and analysis of variance (ANOVA), were performed finally.

Results

A total of 345 participants were included in this study, with an age range of 60-97 years old and an average of 71.13 years. Moreover, 71.3% and 49.6% of them were women and married (or their spouses were deceased), respectively. Based on, descriptive statistics, 87% of the elderly who are kept in daycare centers were illiterate, 9.1% did not complete high school, and 3.9% had a bachelor's degree or higher. Further, 77.3% of the elderly who are kept in nursing home centers were illiterate, 20.7% did not complete high school, and 2% had a bachelor's degree.

Table 1. Cutting scores in each subscale of the GHQ questionnaire

Subscale	Score in subscale	Total score
No or minimum limit	0-6	0-22
Mild	7-11	23-40
Moderate	12-16	41-60
Sever	17-21	61-84

Based on the findings, 80% of the elderly kept at home and with their families were illiterate, 34% did not complete high school, and 4% had a bachelor's degree or higher. The result also represented that 74%, 2.6%, 20.8%, and 2.6% of the elderly in daycare centers were housewives, retired, self-employed, and unemployed, respectively. Furthermore, 74% of the elderly in nursing home centers were housewives, 15.3% were retired, 10.7% were self-employed, and 0% were unemployed. Moreover, 51.2%, 14.4%, 24.6%, and 9.3% of the elderly who were kept at home and with their families were housewives, retired, self-employed, and unemployed, respectively. A total of 17% of the elderly who are kept in daycare centers had pensions, 53% had no income, 7% had non-government income, and 0% had both pension and non-government income. Moreover, 52.7% of the elderly in nursing home centers had pensions, 38.7% had no income, 8% had non-government income, and 0.7% had both pension and non-government income. The obtained data also indicated that 34.7% of the elderly who are kept at home and with their families have pensions, 59.3% have no income, 1.7% have non-government income, and 4.2% have pensions and non-government income.

The findings of this study showed that 55.8% of the elderly who live in daycare centers are willing to live in elderly care centers, while 19.5% are reluctant and 24.7% are indifferent. In addition, 82% of the elderly who live in nursing home centers are willing to live in care centers for the elderly, whereas 8% are reluctant and 10% are indifferent. Regarding the elderly living at home and with their families, 16.9% are willing to live in elderly care centers, while 82.1% are reluctant and 0.8% are indifferent to this issue.

Further, the results of the present study revealed that 72.7% of the elderly who live in daycare centers considered the lack of people to take care of them, 20.8% mentioned loneliness, 2.6% noted the facilities of the centers, and 3.9% mentioned the lack of ability to prepare food as the reasons for visiting elderly care centers. Furthermore, 18.7% of the elderly who lived in nursing home centers considered the lack of people to take care of them as the reason for going to the care centers for the elderly, and the other reasons were loneliness (56%), the facilities of these centers (24%), and lack of ability to prepare food (1.3%). Finally, 19.5% of the elderly who lived at home and with their families considered the reason for visiting the elderly care centers to be the lack of people to take care of them, 78.8% mentioned loneliness, 0.8% mentioned the facilities of the elderly care centers, and 0.8% were also unable to prepare food (Table 2).

The mean and standard deviation (SD) of the number of children in the elderly who are kept in nursing homes and daycare centers were 2.97 ± 2.93 and 5.39 ± 2.64, respectively, and in the elderly who are kept at home with their families, it was 5.62 ± 2.30. Additionally, the findings of this study showed that the mean (SD) of the body mass index (BMI) in the elderly who are kept in the nursing home, daycare centers, and the ones in the home was 25.78 ± 4.80, 25.68 ± 6.09, and 26.79 ± 11.04, respectively (Table 3).

Based on the results (Table 4), diabetes and hypertension (HTN) were the most frequent (27.8%) disorders in the study group, followed by skeletal problems and fractures (11.9%), heart problems (10.1%), stroke and related

Table 2. Demographic information of research participants

Place of residence parameter		Daycare	Nursing home	Home
		Number (%)		
Income	Pension	17 (22.1)	79 (52.7)	41 (34.7)
	No income	53 (68.8)	58 (38.7)	70 (59.3)
	Non-government income	7 (9.1)	12 (8)	2 (1.7)
	Non-government income and pension	0 (0)	1 (.7)	5 (4.2)
Job	Housewife	57 (74)	111 (74)	61 (51.2)
	Retired	2 (2.6)	23 (15.3)	17 (14.4)
	Self-employment	16 (20.8)	16 (10.7)	29 (24.6)
	Unemployed	2 (2.6)	0	11 (9.3)
Education level	Illiterate	67 (87)	116 (77.3)	80 (67.5)
	Did not complete high school	7 (9.1)	31 (20.7)	34 (28.8)
	Bachelor's degree or higher	3 (3.9)	3 (2)	4 (3.4)
Desir to be in elderly care centers	Willingly	43 (55.8)	123 (82)	20 (16.9)
	Reluctant	15 (19.5)	12 (8)	97 (82.1)
	Unconcerned	19 (24.7)	15 (10)	1 (0.8)
Reasons to refer to elderly care centers	Lack of care provider at home	56 (72.7)	28 (18.7)	23 (19.5)
	Loneliness	16 (20.8)	84 (56)	93 (78.8)
	Access to suitable facilities	2 (2.6)	36 (24)	1 (0.8)
	Inability to prepare food	3 (3.9)	2 (1.3)	1 (0.8)

movement disorders (9.3%), genetic disorders (3.8%), and vision, hearing, and nerve problems (9.3%).

According to our findings in this study, the mean score and SD of general health for elderly men (50.7 ± 10.3) was lower than for women (57.2 ± 11.56), implying that men had better general health. Moreover, the elderly living in nursing homes had a more unfavourable mental and emotional state than the elderly living at home (Table 5). It should be noted that the higher average score of a person's general health represents a lower level of the general health of the person.

Based on the information in Table 6, in this study, the average general health score was 55.29. Among the areas of general health, the area of physical signs/symptoms, and the area of social activities, with an average of 15.8 and 14.95, respectively, had the greatest effect on the incidence of mental disorders. The findings also demonstrated that considering the cut-off point (score 23 and above) of the general health questionnaire, all the elderlies (100%), regardless of their residence, were suspected of mild to severe mental disorders and were not in good general health. In addition, 28.11% of them suffered from severe mental disorders (score 61 and above). Information on the other aspects of health is provided in Table 6.

In this study, ANOVA and Chi-square tests showed no significant relationship between the type of residence of the elderly with age, gender, occupation, BMI, and education ($P > 0.05$), but a significant relationship was observed between the type of residence with the number of children, spouse life status, income, disease, the reason for attending the nursing home, willing to attend the nursing home, and desire to visit the family ($P < 0.05$).

In addition, a significant relationship was found between gender and physical illness ($P = 0.033$). Based on our findings, the prevalence of the disease in females was higher than in males. The results also revealed a significant correlation between the willingness of the elderly to attend nursing homes and the female gender, indicating that women were significantly more likely to attend nursing homes than men ($P = 0.003$).

However, Pearson and ANOVA statistical tests also represented no significant relationship between age, occupation, education, marital status, income, physical illness, and desire to live in a nursing home with any general health areas. On the other hand, the findings represented a significant association between the type of residence with depression ($P = 0.004$), anxiety, and sleep disorders ($P = 0.02$), representing that the longer duration between family visits leads to a higher incidence of depression. Notably, there was no significant association between BMI and any of the domains of general health, but there was a significant correlation between BMI and gender ($P = 0.01$).

Table 3. Mean and standard deviation of loneliness after the death of a spouse, number of children, and BMI

Place of residence parameter	Daycare	Nursing home	Home
	Mean ± standard deviation		
Loneliness period after the death of the spouse (year)	11.5 ± 7.6	12.4 ± 10.7	9.45±5.1
The average number of children	5.39 ± 2.64	2.93 ± 2.97	5.62 ± 2.30
BMI	25.68 ± 6.09	25.78 ± 4.80	26.79 ± 11.04

Note. BMI: Body mass index.

Discussion

Health is one of the most important concerns in old age, and due to the significance of this matter, researchers are strongly encouraged to study the physical and mental health status of the elderly. In this study, the physical and mental condition of the elderly have been studied, and findings indicated that the literacy status, occupation, and income of these elderly participants were not appropriate. This shows the importance of being literate in education and training to achieve necessary life skills. On the other hand, having a suitable job and income is highly effective in providing favourable living conditions, physical health, and mental satisfaction to the elderly. These results are consistent with those of other studies on elderly groups, including studies by Afzalei et al (21).

In the present study, most of the elderly willingly were residents in nursing homes or attending daycare centers (day and night); their justification for this preference varies case by case. Physical problems, loneliness, and lack of care providers at home were among the most frequent reasons that they had for their decision. In this regard, Salarvand and Abedi studied the causes and motives of staying in a nursing home among elderlies in Tehran (26). Their findings are also in line with our results. Seo and Hollis (27) reported that family pressures, a sense of security, access to formal and informal services, and a sense of deteriorating health led older people to stay in nursing homes.

Based on the results of this study, the elderly, with a mean score of 55.29, did not have good mental health, as

Table 4. Frequency of Diseases Based on the Place of Residence

Variables	Diabetes and HTN, No. (%)	Stroke-related movement disorders, No. (%)	Fractures, No. (%)	Neurologic / Psychologic, No. (%)	Hearing and visual, No. (%)	Genetic, No. (%)	Cardiac, No. (%)	Skeletal, No. (%)	No disease, No. (%)
Nursing home	50 (33.3)	10 (6.7)	1 (.7)	9 (6)	2 (1.3)	6 (4)	25 (16.7)	21 (14)	26 (17.3)
Daycare	15 (19.5)	7 (9.1)	1 (1.3)	14 (18.2)	5 (6.5)	7 (9.1)	6 (7.8)	10 (13)	12 (15.6)
Home	31 (26.3)	15 (12.7)	-	1 (.8)	1 (.8)	-	4 (3.4)	8 (6.8)	58 (49.2)
Total	96 (27.8)	32 (9.3)	2 (0.6)	24 (7)	8 (2.3)	13 (3.8)	25 (10.1)	39 (11.3)	96 (27.8)

Table 5. Mean and standard deviation of general health score and its different dimensions in the elderlies' base to their place of residence

Place of residence	Parameter	Mean ± SD	The maximum amount	The minimum amount
Daycare	General health	55.6 ± 12.6	91	34
	Physical signs	15.3 ± 4.6	26	7
	Anxiety and sleep disorders	14.8 ± 5.4	26	7
	Social activity	15.7 ± 3.6	27	7
	Depression sign	9.8 ± 4.3	27	6
Nursing home	General health	57.6 ± 12.5	86	35
	Physical signs	15.5 ± 3.8	23	7
	Anxiety and sleep disorders	15.4 ± 4.8	26	7
	Social activity	14.4 ± 3.4	24	7
	Depression sign	12 ± 4.8	24	7
Home	General health	53.4 ± 9.1	79	37
	Physical signs	14.5 ± 3.5	24	8
	Anxiety and sleep disorders	14.4 ± 3.8	25	7
	Social activity	14.3 ± 2.5	25	8
	Depression sign	10.1 ± 3.1	20	7

Table 6. Mean score and standard deviation of different areas of general health in the elderly

General health	Elderlies' score in each area of GHQ
	Mean ± standard deviation
Physical signs/symptoms	15.08 ± 4.08
Anxiety and sleep disorders	14.82 ± 4.76
Social activity	14.95 ± 3.29
Depression sign	10.44 ± 4.15
Total health score	55.29 ± 11.57

Note. GHQ: Goldberg General Health Questionnaire.

all the elderly in Chaharmahal and Bakhtiari province, to some degree, were suspected of having mental disorders. Among the four criteria of mental health, physical area/domain and depression were the most important mental health disorders in the elderly. However, Pasha et al (28), in their study on the elderlies in Ahvaz, reported the average mental health score of the elderly living with their families as 15.58, and social dysfunction was found as the most serious harm to their mental health. Barati et al (29) concluded that the elderlies of Hamedan, with an average score of 22.3, have moderate mental health, whereas 42% of the elderlies in Hamedan were suspected of some kind of mental disorder. Moreover, among the four criteria of mental health, depression, and impaired social activities had the greatest impact on the elderly's perception of their mental health. The mean score obtained in the study of Pasha et al and Barati et al (28,29) was lower than the one obtained in the present study. It indicates that the elderlies in Ahvaz and Hamedan had better mental health, but it should not be overlooked that the above studies were performed on the elderlies living with families. These results confirm that the living conditions of the elderly can affect their mental health.

The results of the mental health status of the elderly in this study confirmed their moderate mental disorders. They experienced some degree of sadness, nervousness, anxiety, restlessness, feeling of despair and emptiness, worthlessness, and difficulty in performing their personal tasks for at least a month before the study. More than half of the elderlies in this study felt depressed most of the time, while in Alizadeh and colleagues' study in Tehran, most of the elderlies (56.3%) had mild mental distress (30). This difference could be due to cultural differences, living conditions, environmental and supportive matters, as well as different socio-economic characteristics that could affect the mental health of people, especially the elderly age group. These findings had been highlighted in other studies such as Borhaninejad et al (1). Other findings of this study indicated better general health in men than women based on the mean total score of general health. However, the statistical test demonstrated no significant relationship between general health and gender, which conforms to the results of some studies (7,29,31). The finding could be due to the role and social status of men in social structure, which gives them more rights, power, and opportunity; therefore, they had a higher sense of self-efficacy and better mental health than women.

On the other hand, this difference could be due to more attention and obsession of women with their health status and experience of different life situations that make them more vulnerable than men in general (29,30). In the study of Tajvar et al (32), the elderly who lived with their families had a better quality of life and health compared to the elderly who lived alone. In our study, participants who lived with their relatives had a better health status than the elderly in the nursing home.

The findings indicated that most elderly (72.2%) had at least one type of physical illness. Further, the WHO reports that the most common disorders of elderlies in Eastern Mediterranean countries are HTN and cardiovascular disease (33), which are consistent with the results of the present study. According to the "U.S. Elderly Program" study, the treatment of HTN prevents mortality and disability due to cardiovascular disease (34). Owing to the high prevalence of HTN in the studied elderlies, follow-up and regular control of the blood pressure in the elderlies, provision of appropriate preventive measures, and treatment of HTN are among the healthcare requirements for the elderlies in Iranian society.

Considering that the living conditions of the residents of nursing homes are generally more unfavourable than those of the elderly who live with families in the community, it is suggested that families reconsider providing care for elderlies. Furthermore, family education about supervising elderly care in nursing homes is crucial. Moreover, improving the quality of services provided by nursing homes and daycare centers and increasing environmental and welfare facilities in nursing homes may help make the nursing home environment as similar as possible to the family environment. The regular

visit of elderly's family members and friends should be encouraged as well.

It is recommended that elderly patients receive care and be followed up on time by the staff of welfare and health centers. Elderly with disabilities should be referred to specialized centers. Additionally, today's young population will be elderly tomorrow, and age-related disorders and diseases can be prevented and controlled easily. Therefore, it is recommended that regular nutrition and proper lifestyle training should be provided through workshops, bulletins, and educational pamphlets for all age groups as prevention measures.

There was a possibility of bias in the self-report questionnaire. Individual differences, including personal beliefs, psychological characteristics, interests, and the like, which are effective in learning, were out of the researchers' control. The other limitation included the cross-sectional nature of this study.

Conclusion

According to the results of the present study, the elderly living in nursing homes has more unfavourable mental, emotional, and physical conditions than the elderly living at home. Therefore, long-term planning to minimize the problems of elderlies is necessary. Thus, it is recommended that lifestyle modification, screening, and health education for this age group should be performed to help maintain the elderly's independence, especially the elderly living in nursing homes.

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Authors' Contribution

Conceptualization: Zahra Karimi, Marjan Sadat Seghayat, Fatemeh Fatahian, Masoud Lotfizadeh.
Data curation: Zahra Karimi and Fatemeh Fatahian.
Formal analysis: Masoud Lotfizadeh.
Investigation: Zahra Karimi, Marjan Sadat Seghayat, Fatemeh Fatahian, Masoud Lotfizadeh.
Methodology: Zahra Karimi, Marjan Sadat Seghayat, Fatemeh Fatahian, Masoud Lotfizadeh.
Project administration: Masoud Lotfizadeh.
Resources: Zahra Karimi.
Software: Zahra Karimi.
Supervision: Zahra Karimi, Marjan Sadat Seghayat, Fatemeh Fatahian, Masoud Lotfizadeh.
Validation: Zahra Karimi, Marjan Sadat Seghayat, Fatemeh Fatahian, Masoud Lotfizadeh.
Visualization: Zahra Karimi, Marjan Sadat Seghayat, Fatemeh Fatahian, Masoud Lotfizadeh.
Writing–original draft: Zahra Karimi, Marjan Sadat Seghayat, Fatemeh Fatahian, Masoud Lotfizadeh.
Writing–review & editing: Zahra Karimi, Marjan Sadat Seghayat, Fatemeh Fatahian, Masoud Lotfizadeh.

Competing Interests

The authors declare no conflict of interests.

Ethical Approval

The study protocol was approved by the Research Ethics Committee of Shahrekord University of Medical Sciences (IR.SKUMS.REC. 92-10-30).

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