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The Relationship between Lifestyle and General Health of Elderly People Covered by HealthCare in Babol city

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ABSTRACT

BACKGROUND AND OBJECTIVE: The better understanding of lifestyle and elderly health can be helpful in designing and prioritizing interventions for chronic diseases. The overall aim of this study was to determine the relationship between lifestyle and general health in elders.

METHODS: In this cross-sectional study, 500 elders over the age of 60 who had no cognitive problems were selected from the health center in Babol city; according to the systematic cluster random sampling method. Sampling was done from April to July 2018. The research tools were the demographic questionnaire, the Iranian elderly lifestyle questionnaire and the general health questionnaire (GHQ) that were completed by interviewing.

FINDINGS: The results showed that the Mean±SD age of the participants was 68.36 ± 6.5 years and 51.4% of the elderly had a favorable lifestyle and 66.4% had a desirable general health. The results showed that lifestyle and its domains had statistically significant reverse relation ($p<0.001$, $R= -0.503$) with general health and its subscales, except nutrition ($p=0.06$). The results of multivariable logistic regression analysis showed that income, location and lifestyle variables had a significant effect on general health.

CONCLUSION: The findings of this study showed that half of the elderly who participated in this study were at a desirable lifestyle status and general health. Lifestyle, location and income were effective variables the general health of the elderly. It seems that along with educational-counseling interventions to improve lifestyle and raise the health of the elderly, the need for financial support also should be considered.

KEY WORDS: *Lifestyle*, *General Health*, *Aged*.

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Introduction

Aging is a natural process that starts from the embryonic time and continues until death and naturally leads to a gradual decrease in the function of most tissues of the body until the end of life (1). As a result, the health and development of knowledge and the socio-economic status of the aging population have increased (2). According to United Nations Fund for Population Activities, the proportion of elderly people in the world is said to increase from about 10.5% in 2007 to about 21.8% in 2050 (3). In Iran, Statistical indicators show that the older adults' population has also begun to rise, according to the census of 2016, 7228367 people in the population were over 60. It is estimated that this number will reach 10 million in 2021 (4).

With this increasing of the proportion of elderly people, their health problems have gained importance. The World Health Organization defines health as: a state of complete physical, mental and social well-being (5). General health is determined by multiple factors such as Psychology, the environment, the economy and social indicator, health services and lifestyles (6). In many older adults, reducing social communication, losing relatives, and mental and physical illnesses have made obtaining a healthy lifestyle a major challenge (7, 8).The statistics on the main causes of mortality show that 53% of the causes of death are related to lifestyle and unsafe behaviors, 21% to environmental factors, 16% to genetic factors, and 10% to the health care system (7). Among these components, lifestyle has the highest percentage of causes of mortality (9, 10).The World Health Organization has described a healthy lifestyle as an attempt to gain a complete physical, mental and social well-being, which includes physical and mental dimensions (11).

Such as a healthy diet, exercise, stress management, social and productive activities, leisure activities, daily activities of life, avoidance of high-risk behaviors (tobacco, alcohol, substance abuse and unhealthy sexual behaviors) and prevention of accidents (12). Loneliness and social isolation in the elderly is associated with failing physical and mental health (13). Findings from a study in our country showed that one of the most important reasons for elderly depression is lack of social support and the reduction of a communication network (14). Active lifestyles, exercise and physical activity can delay the aging process (15). Having mobility, sports and entertainment for the elderly create a happy and satisfying life (16). In addition regular physical activity can prevent cardiovascular diseases, diabetes and other acute and chronic diseases (17). It is also effective in providing mental health to the elderly (16). In Iran, there are few studies on the lifestyle and general health of the elderly (6,18). Considering that lifestyle behaviors are influenced by cultural-social factors (19), the present study was designed to determine the relationship between lifestyle and general health in older adults living in Babol city. Researchers are hoping that better understanding of life style and the health of the elderly will be useful in designing and prioritizing interventions for chronic diseases such as diabetes, hypertension and cardiovascular diseases.

Methods

This article was derived from a Master's thesis of Gerontological Nursing, which has been approved by the Code of Ethics IR.MAZUMS.REC.1396.1137 at Mazandaran University of Medical Sciences. In this cross-sectional study, 500 older adults above the age of 60 were selected from the health center in Babol city, according to the systematic cluster random sampling method from April to July 2018.

Ten health centers were randomly selected from 43 health centers. Each center was considered a cluster and in each cluster, taking into account the ratio of the elderly to the total population, the sample was selected. The list of elderly was received from each center and samples were selected by systematic from people over 60 years old. Subjects were invited to participate in the study by telephone. Older adults were visited at the centers to complete the questionnaires, the eligible elderly people were entered into the study based on their consent; if unwilling to contribute, and they were replaced with another person.

The purpose of the research was described to them and they were also assured that the results of the study would be confidential. Since most elderly people were illiterate or poorly educated, the researcher used the interview method to complete the questionnaire. The inclusion criteria were age over 60 years old, no have psycho and neurological disorders that require medication, have no cognitive impairment based on abbreviated mental test scores 7 and higher (This questionnaire contains ten questions. In this tool, for each correct answer, one point is given. The ideal cut-off point is equal to 7, its sensitivity is 85% and its specificity is 99%, and score of 7/10 is cognitive impairment) (20), and willingness to participate in the study. The exclusion criteria were: severe hearing loss and having psychiatric disorders, which, with the diagnosis of a specialist physician, led to the use of a

psychiatric medicine. The data collection tools were used the demographic questionnaire, the General Health Questionnaire (GHQ-28) and the Iranian elderly lifestyle questionnaire which were designed and validated by Eshaghi et al. (2010). The Iranian elderly lifestyle questionnaire is consisted of 46 items and 5 domains, 16 items related to prevention, 5 items related to exercise and recreation, 13 items related to nutrition, 5 items related to stress management and 7 items related to relation. Then the total score is categorized into 3 classes. A score of 42 to 98, 99 to 155, and 156 to 211 is labeled as an undesirable, moderate and desirable lifestyle, respectively. This questionnaire has been used in various studies (6, 21) to assess healthy lifestyle and elderly health planning. Its validity has been confirmed by content validity and its reliability was 0.76 with Cornbrash's coefficient (22).

The second questionnaire used the general health questionnaire (GHQ-28). This tool is a questionnaire of 28 questions that was developed by Goldberg and Hiller in 1979 and has 4 sub-scales (Physical function, anxiety symptoms, social function, and depression symptoms). Each scale has 7 questions and each question has a score of 0-3; with zero points being assigned to either no or minimum, 1 to mild, 2 to medium and 3 to severe. The total score of the questionnaire is between 0-84; the score 0-22 indicating the highest general health score, the score 23-40 indicating the general average health, the score 41-60 indicating a mild general health, and the score of 61-84, showing none or a lower overall health. Its reliability was assessed by Taghavy with the three methods of re-evaluation, bisection method and Cronbach's alpha, with the reliability coefficients of 70%, 93% and 90% , respectively (23). In this study, the young old (aged 75-60), the old (76-90 years old) and old old (over 91 years old) are considered and aim of income, is the amount of spend in the elderly people. The data was analyzed using descriptive distribution (mean and standard deviation), and inferential statistics (logistic regression was used to analyze the undesirable general health and desirable general health with other variables, Pearson correlation coefficient was used for analysis of lifestyle and general health with quantitative variables) via SPSS17 software and the level of significance was considered significant ($p<0.05$).

Results

A total of 500 samples were studied, 282 (56.4%) were female and 218 (43.6%) male. The mean age of the participants was 68.36±6.5 years and was 68.61±6.7 in males and 68.17±6.4 years in females (Table1). After categorizing the lifestyle score into three levels (undesirable, moderate and desirable) it was found that 257 people (51.4%) had a favorable lifestyle and 243 people (48.6%) had moderate lifestyle. And after the division of the general health score into two levels (undesirable and desirable), it was determined that (66.4%) 332 elderly had desirable general health and (33.6%) 168 people had undesirable general health. (Table 2).

Table 1. Distribution of mean and percentage in terms of demographic variables in older people under study

Variables		Frequency (%)
Gender	male	218(43.6)
	female	282(56.4)
Age	Young old 60-75	423(84.6)
	Old 76-90	77(15.4)
location	Rural	250(50)
	Urban	250(50)
Educational Level	illiterate	281(56.2)
	As diploma	193(38.6)
	Academic	26(5.2)
Marital status	Married	410(82)
	Single	3(0.6)
	Widow	81(16.2)
	Divorced	6(1.2)
Income level	Less than the expenditure	166(33.2)
	Equaled expenditure	290(58)
	More than expenditure	44(8.8)
Chronic disease	yes	420(84)
	No	80(16)

Table 2. The mean standardized scores for lifestyle and general health (and its dimensions) in older people under study

Variable	Mean±SD
Exercise	62.57±17.9
Prevention	80.5±7.38
stress management	69.18±16.76
Nutrition	68.81±8.57
Relationships	77.04±17.45
lifestyle	155.73±16.28
Physical function	26.08±18.62
Anxiety	20.58±17.55
Social function	40.32±14.33
Depression	5.75±11.83
General health	23.06±11.47

The results of the Pearson correlation coefficient showed that all lifestyle domains with general health and its subscales had a significant relationship (p<0.001); except nutrition that was not significantly related to anxiety (0.544), depression (0.116) and physical function (0.957) (Table 3).

The findings of this study showed that the mean score of lifestyle and general health were (155.73± 16.28) and (19.48±9.73) respectively. The results of a Pearson correlation coefficient showed that there was a significant negative relationship between lifestyle and general health in the elderly covered by Babol health centers (p<0.001, r=-0.503) (Fig1). The results of variable logistic regression showed that in the first stage, the variables of the favorable lifestyle were 4.1 times, male gender was 2.9 times, the age of the elderly was 1.6 times, diploma education and higher 4.3 times, have no chronic disease 2.2 times, urban location 1.9 times, living arrangement with spouse and child 3.2 times, marital status 4.7 times, free and retired job 3.2 times, personal housing 3.5 times, good income 12.7 times, compared to another situation affects the favorable general health. The results of multivariable logistic regression analysis showed that income, location and lifestyle variables had a significant effect on general health. In such a way that the favorable lifestyle (p<0.001, CI-95%= 2.2-5.7, OR= 3.5), location in the city (p<0.001, 1, CI-95% = 1.3-3.4 OR = 2.2) and having appropriate income ((p<0.001, CI-95%=3.1-29.9 OR=9.7) were effective variables on general health. That means that the elderly with a favorable lifestyle had 3.5 times more favorable general health than the elderly who had an unfavorable lifestyle (Table 4).

Table 3. The results of Pearson correlation coefficient for the relationship between independent variables and lifestyle domains in older people under study.

Variable		Exercise	Prevention	Stress management	Nutrition	Relationships	Life style
Physical function	p-value	<0.001	<0.001	<0.001	0.957	<0.001	<0.001
	r	0.265	0.355	0.355	0.002	0.220	0.347
Anxiety	p-value	<0.001	<0.001	<0.001	0.544	<0.001	<0.001
	r	-0.205	-0.275	-0.530	0.027	-0.189	-0.330
Social function	p-value	<0.001	<0.001	<0.001	0<001	<0.001	<0.001
	r	-0.447	-0.320	0.389	-0.258	-0.354	-0.504
Depression	p-value	<0.001	<0.001	<0.001	0.116	<0.001	<0.001
	r	-0.243	-0.264	-0.357	-0.070	-0.236	-0.343
General health	p-value	<0.001	<0.001	<0.001	0.06	<0.001	<0.001
	r	-0.370	-0.292	-0.551	-0.084	-0.324	-0.493

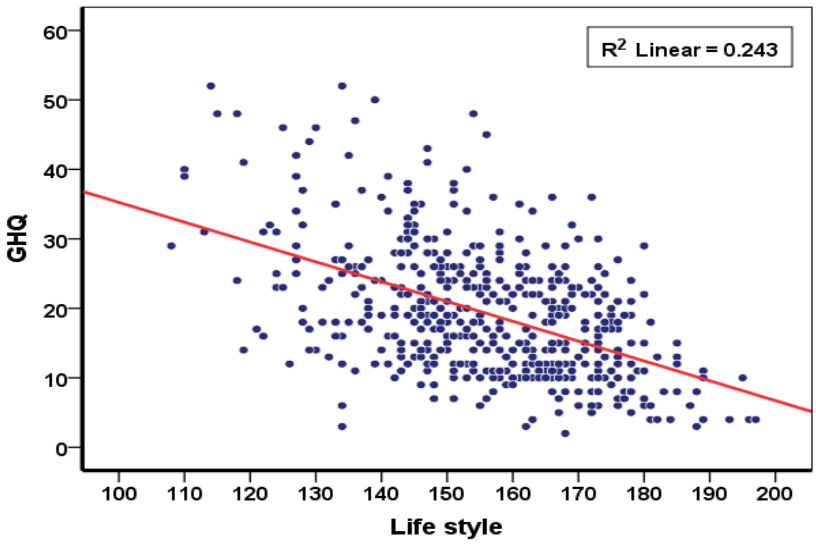

Figure1. The relationship between lifestyle and general health in older people under study

Table 4. Odds ratio and confidence limits 95% of variables affecting general health in older people under study

Variable		variable logistic regression OR (CI-95%)	P-value	Multivariable logistic regression analysis OR (CI-95%)	P-value
Lifestyle	moderate	1			
	favorable	4.1 (2.7 -6.1)	<0.001	3.5 (2.2 – 5.7)	<0.001
Gender	Female	1			
	Male	2.9 (1.9 -4.4)	<0.001	1.3 (0.4–4.58)	0.65
Age	Old 76–90	1			
	Young old 60–75	1.6 (1.0 – 2.6)	0.036	1.6 (0.8-2.9)	0.11
Education	Illiterate	1			
	As diploma	0.8 (0.5 -1.2)	0.34	0.5 (0.3–0.8)	0.004
	Academic	4.3 (1.9 –9.3)	<0.001	1.8 (0.6 –5.1)	0.22
Chronic Disease	Yes	1			
	No	2.2 (1.3–4.0)	0.005	0.9 (0.008-112.9)	0.9
Location	village	1			
	city	1.9 (1.3 -2.9)	<0.001	2.2 (1.3 –3.4)	<0.001
Living arrangement	Alone	1			
	With spouse	2.7 (1.4–5.4)	0.004	1.7 (0.4–7.9)	0.5
	With children	1.2 (0.5 –2.8)	0.63	6.1(0.4 –2.9)	0.9
	With spouse and children	3.2 (1.6 –6.5)	<0.001	1.5 (0.3 –7.3)	0.6
Marital status	Single and Divorced	1			
	Widowed	2.0 (0.5 –8.7)	0.33	4.6 (0.75 –9.0)	0.09
	Married	4.7 (1.1 –19.1)	0.03	2.0 (0.3 –14.1)	0.47
Job	Housewife	1			
	Retired	3.2 (1.9 –5.6)	<0.001	1.1 (0.32 –4.0)	0.82
	Free	3.2 (2.0 –5.1)	<0.001	2.45 (0.66–9.0)	0.17
taking medicine	Yes	1			
	No	2.2 (1.2–4.0)	<0.001	0.5 (0.005 -61.4)	0.8
Housing status	Rental	1			
	Personal	3.5 (1.3–9.2)	0.005	1.6 (0.4 –7.3)	0.43
Income level	Less than the expenditure	1			
	Equaled expenditure	3.9(2.6 –5.9)	<0.001	3.7 (2.4 –5.7)	<0.001
	More than expenditure	12.7(4.3 –37.2)	<0.001	9.7 (3.1 – 29.9)	<0.001

Discussion

The present study showed that a significant reverse negative relationship between lifestyle scores and general health scores. In similar our study, the overall lifestyle score with a general health score was significantly reversed (6, 24). Also all lifestyle domains with general health subscales had a significant relationship, except nutrition that was not significantly related to anxiety, depression and physical function. In a similar study, lifestyle with general health and its subscales had a significant relationship except social function with stress management (6). In another study, all general health domains with all lifestyle domains except prevention and anxiety had a significant relationship (24). Of course; our measurement tools in assessing nutritional status may not be able to accurately measure the state of anxiety, depression and physical functioning. The data indicated that the majority of the elderly had a favorable lifestyle. In other studies, lifestyle of the elderly was reported to be desirable (18, 25). While in the study by Mahmudi et al (26). and Movahedi et al. (27) the elderly lifestyle was reported to be moderate. The high percentage of the elderly desirable lifestyle in this study may be related to the culture and the economic and social conditions of the elderly living environment. The findings of this study showed that more than half of the elderly had desirable general health that was in line with other studies (6, 28). In the study of Hosseini et al. (29), more the elderly had moderate general health. The high general health of the

elderly in this study, can be due to the favorable lifestyle of most elderly people. The study also showed that income, location and lifestyle variables had a significant effect on general health. For each increase the score in the lifestyle score, reduced the general health score by 0.24, meaning that the older people with a desirable lifestyle had a higher general health.

The elderly living in the city had a higher chance of having a higher general health than the rural population. In a study in Nigeria (30), the general health of the elderly living in the rural was lower than the elderly living in the city. While in a study in New Zealand (31), the elderly living the rural had a higher general health than the elderly living in the city. The reason for the high general health of the elderly living in the city in this study can be due to the higher access of the elderly living in the city to the health centers and the medical centers.

In the present study, the older people with higher income had higher general health which is consistent with the study by Canam et al.(32) and Abedi et al. (12) Income is an important environmental factor that is related to the health and performance of the individual, and people with lower income have lower levels of health and more functional limitations. Furthermore, the lack of financial support for many elderly people leads to a lack of acceptance of medical treatment and the adoption of health behaviors.

The elderly men had a higher general health than the elderly women, which could be because of that physical and social activity and leisure-time in the elderly men are better than that of the elderly woman, which improves the quality of life and improves their physical and psycho health. The findings of this study were consistent with Hosseini et al. (29) and Brennan et al.(33). However, in Cybulski et al. (34) study, general health in women was higher than that of men. Older people with a diploma and higher education had a better chance of having a better general health that was consistent with Banihashemian et al. (35) which could be in line with the data that mentioned education as an effective factor in a dynamic, aging life. This finding can be attributed to increased awareness of higher education and the ability to study or use scientific sites, which can affect the health of the elderly. The results of this study showed that the mean scores of the elderly lifestyle in the prevention and interpersonal and social relationships domains were higher than other domains. Also the mean of general health scores of the elderly showed that depression rate of the older people covered by Babol health centers was low.

While in the study by Zare et al. (36) and Cybulski et al. (34), depression was common among the elderly population. And in the other study, the highest general health was social subscale (29). Reducing depression in the elderly can be due to family support and interpersonal and social relationships. Participation in social activities reduces loneliness among older adults and could act as a buffer against the adverse effects of depression. The lack of social support in the elderly alone causes psycho problems and depression, which affects their lifestyle as an adverse effect. The findings of this study showed that half of the elderly who participated in this study were at a desirable lifestyle status and general health. And lifestyle, location and income were effective variables the general health of the elderly.

It seems that along with educational-counseling interventions to improve lifestyle and raise the health of the elderly, the need for financial support also should be considered. The limitation of this study was the lack of participation of the oldest range group (90 and older) due to their age. Also physical and emotional conditions of the elderly can affected the elderly response to questionnaire, to reduce these effect researchers tried to complete the questionnaire for some demographic data elderly families provided information.

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