



## Original Article

# Health Promoting Behaviors and General Health among the Elderly in Qazvin: A Cross Sectional Study

Leila Dehghankar<sup>1</sup>, Akram Shahrokhi<sup>2\*</sup>, Arina Qolizadeh<sup>1</sup>, Fatemeh Mohammadi<sup>3</sup>, Elnaz Nasiri<sup>4</sup>

<sup>1</sup>. Department of nursing, Faculty of Nursing & Midwifery, Qazvin University of Medical Sciences, Qazvin, Iran

<sup>2</sup>. Department of Critical Care nursing, Faculty of Nursing & Midwifery, Qazvin University of Medical Sciences, Qazvin, Iran

<sup>3</sup>. Department of Geriatric nursing, Faculty of Nursing & Midwifery, Qazvin University of Medical Sciences, Qazvin, Iran

<sup>4</sup>. Student research committee, Faculty of Nursing & Midwifery, Qazvin University of Medical Sciences, Qazvin, Iran

## ABSTRACT

### Article history

Received 16 April 2018

Accepted 9 June 2018

**Introduction:** Health promoting behaviors (HPBs) are one of the main criteria to determine health. HPBs have a complex nature and are influenced by several factors. The aim of this study was to determine the relationship between HPBs and general health in the elderly in Qazvin.

**Methods:** In this cross-sectional study, 372 older people were enrolled using convenience sampling. Data were collected using demographic information questionnaire, HPBs checklist, and Goldberg and Hillier's 12-items of the General Health Questionnaire. Data were analyzed by independent t-test and chi-square test.

**Results:** The results showed that 21% of the elderly were not in a desirable general health status. Walking (61%) and using low-fat foods (73.9%) were among the most uncommon HPBs while lack of alcohol consumption (97%) and blood pressure control (95.4%) were among the most common HPBs. The elderly who walked reported a significantly higher general health ( $P < 0.001$ ), while the elderly who reported using low-salt ( $P = 0.008$ ) and low-fat ( $P = 0.008$ ) diet had a significantly lower general health.

**Conclusion:** While the rate of doing certain HPBs, such as walking, was not good, almost 80% of the subjects were in a satisfactory general health status. Efforts to expand and improve HPBs, especially walking, in the elderly can affect their general health status.

**Keywords:** Health, Aged, Health Promotion, Behavior

**Citation:** Dehghankar L, Shahrokhi A, Qolizadeh A, Mohammadi F, Nasiri E. Health promoting behaviors and general health among the elderly in Qazvin: a cross sectional study. *Elderly Health Journal*. 2018; 4(1): 18-22.

### Introduction

Health promotion has recently been considered a necessary strategy to reduce inequalities in health and providing high quality primary care (1). Prevention and health promotion programs for the elderly have expanded greatly. These programs focus on improving the general health of the elderly and encouraging self-care for chronic diseases (2). Health Promoting behaviors (HPBs) are a set of behaviors that a person is following or believing in to promote his/her health or prevent disease (3).

HPBs, including no smoking, lack of alcohol consumption, walking and exercise, consuming low-salt and low-fat foods, fresh vegetables and fruits, milk, meat (2-3 servings a day), controlling blood pressure and controlling health status, are complex in nature and are influenced by several factors (4) so that those who adopt HPBs, can prevent disease and improve their physical functioning, quality of life, and life expectancy. Following proper nutrition programs and eating appropriate and adequate food as part of HPBs, provide a useful and enjoyable longevity. In

\* **Corresponding Author:** Department of Critical Care nursing, Faculty of Nursing & Midwifery, Qazvin University of Medical Sciences, Qazvin, Iran. **Tel:** +9828-33338034, **Email address:** a.shahrokhi@qums.ac.ir

fact, the maintenance of independent life and functioning is considered one of the HPBs among the elderly (5-7).

Several studies on the elderly's HPBs have shown that they are often aware of the benefits of consumption of fruits and vegetables, which is significantly associated with the perceived benefits of vegetable consumption (8), but with increasing age, HPBs rate decreases (4). A study by Sargazi et al. for example, showed that approximately 56% of the elderly did not use the recommended amount of dairy group (9).

Due to the dramatic increase in the population of the elderly, societies now have to think more and more about seeking out solutions to the general health of the elderly (10). General health of elderly people is one of the important variables in this period and requires careful evaluation of preventive measures, treatment, and increase of the level of well-being in the health domain (11). The study of Pasha et al. showed that the elderly did not have a desirable general health status (12). Barati et al. have find the relationship between mental health and no smoking, walking, consuming fresh vegetables, lack of drinking alcohol, controlling health status, and controlling blood pressure among the elderly (13).

Few studies have investigated the relationship between HPBs and general health in older people in Iran. Considering the fact that knowledge about the general health of elderly people helps satisfy their real needs and helps planners plan for their desires and needs (14), and Hence, it is expected that by identifying HPBs and their relationship with general health in the elderly, appropriate strategies can be adopted to improve these behaviors, and steps can be taken to achieve the goal of active aging. This study was therefore designed to investigate the relationship between HPBs and general health in elderly people in Qazvin.

## Methods

### *Study design and participants*

The study population for this cross-sectional study was the elderly aged 60 years and over in Minoodar district of Qazvin conducted from May to August 2014. The inclusion criteria were having the ability to communicate verbally to answer questions, lack of suffering from debilitating diseases, lack of having disability and surgery, and providing consent to participate in the study. With regards to the lowest frequency of elderly HPBs attained for doing exercise or walking (0.64) (7), accuracy of 0.05, and confidence level of 0.95, sample size was determined to be 372 and the participants were selected by convenience sampling from Comprehensive Health-care Center in Minoodar.

### *Measure*

Data were collected through interviews by using a questionnaires which consist of the following sections:

Demographic information questionnaire included age, gender, education, marital status, economic status, living status (alone, with spouse, or with child), and self-reported current health status (better than, similar to, or worse than the elderly of the same age).

The HPBs questionnaire consisted of nine two choice (Yes/No) questions, including smoking (cigarettes, hookahs, cheeks, and pipes), alcohol consumption (at the moment), exercise or walking (at least three 20-min sessions a week), consuming low-salt and low-fat foods, consuming fresh vegetables and fruits (3-5 servings a day), consuming milk and dairy (2-3 servings a day), consuming meat (2-3 servings a day), controlling blood pressure (over the past year), controlling health status (performing tests within the last 1-2 years). The Yes and No answers to the questions were scored 1 and 0, respectively (8, 10). Validity and reliability of the instrument have been confirmed by some studies in Iran (8-10)

Goldberg and Hillier's (15) 12-items of the General Health Questionnaire (GHQ-12) includes 12 questions to investigate four subscales of physical symptoms, anxiety and sleep disorders, social dysfunction and depression. In this questionnaire, the respondent is asked to state his/her status during the past month with respect to the items of the questionnaire. Questions are scored according to binomial scoring (0-0-1-1) (the two answers on the right side in each item are scored 0, and the next two answers are scored 1, and therefore the scores range from 0 to 12. A score of 3.7 is used as the cut-off point in the group research, and a higher score indicates lower general health. The Persian version of the GHQ-12 has been validated in previous studies in Iran (16-18).

### *Ethical Considerations*

The research protocol was approved by the Research Ethics Committee of Qazvin University of Medical Sciences (code: IR.QUMS.REC.1394.254 dated 1394/09/26). In addition, after explaining the research purposes to the elderly in person, obtaining their written informed consent, ensuring confidentiality of information and voluntarily answering the questions, the people who were willing to participate in the study were included. During the interview, the questionnaire was completed by the researcher.

### *Data analysis*

Data analysis was done using SPSS 16. For descriptive statistics, frequency, mean, and standard deviation were used. To determine the relationship between general health and HPBs, independent t-test was used, and to investigate the relationship between the HPBs and demographic variables, chi-square test was used.

## Results

Most of the participants were female (52.4 %) and in 60-64 years age group (44.7%). The demographic characteristics of participants is presented in Table 1. Regarding HPBs, regular walking or physical activity

(61%) and consumption of low-fat foods (73.9%) were among the most least common HPBs and lack of using alcoholic beverages (97%) and blood pressure control (95.4%) were among the most common HPBs (Table 2).

**Table 1. Frequency distribution of demographic variables of participants**

Demographic	N (%)
<b>Age</b>	
60-64	166 (44.7%)
65-69	79 (21.2%)
70 and higher	127 (33.5%)
<b>Gender</b>	
Male	177 (47.6%)
Female	195 (52.4%)
<b>Marital status</b>	
Bachelor	7 (1.9%)
Married	272 (73.1%)
Divorce	93 (25%)
<b>Education</b>	
Illiterate	183 (49.2%)
Elementary	141 (37.2%)
Intermediate	20 (5.4%)
Higher	28 (7.5%)
<b>Living status</b>	
Alone	46 (12.4%)
With spouse	273 (73.4%)
With child	52 (14%)
<b>Economic status</b>	
Independent	280 (75.3%)
Dependent	87 (23.4%)
<b>Current health status</b>	
Better than the elderly of the same age	187 (50.3%)
Similar to the elderly of the same age	124 (33.3%)
Worse than the elderly of the same age	56 (15.1%)

**Table 2. Frequently distribution of the health promoting behaviors (HPBs)**

HPBs	No N (%)	Yes N (%)
1 No smoking	29 (7.8%)	343 (92.2%)
2 Lack of drinking alcohol	11 (3 %)	361 (97%)
3 Doing exercise or walking	144 (38.7%)	227 (61%)
4 Consuming low-salt food	91 (24.5%)	281 (75.5%)
5 Consuming low-fat food	96 (25.8%)	275 (73.9%)
6 Consuming milk and dairy	37 (9.9%)	335 (90.1%)
7 Consuming fresh fruit and vegetable	34 (9.1%)	337 (90.6%)
8 Controlling health status	31 (8.3%)	341 (91.7%)
9 Controlling blood pressure	17 (4.6%)	355 (95.4%)

Regarding the relationship between HPBs and demographic variables, there was a statistically significant relationship between age ( $P = 0.03$ ), gender ( $P = 0.02$ ), self-reported current health status ( $P = 0.002$ ), economic status ( $P = 0.006$ ), and marital status ( $P < 0.0001$ ), so that male participants, the elderly with a better self-reported health status, independent, and married elderly did more regular exercise than those with a lower level of self-reported health status, dependent, and single and widowed, respectively.

Another feature was the relation Between consumption of low salt ( $P = 0.01$ ) and low fat ( $P = 0.03$ ) diet and gender, economical status, and family status, so that female subjects, financially independent people, and those who lived with their spouses followed low-salt and low-fat diet more than men, financially dependent people, and those who lived alone, respectively.

There was a significant relationship also between the health status control and age ( $P = 0.025$ ) and family composition ( $P = 0.031$ ), so that younger people, compared to older ones, and those who lived with their spouses, compared to those who lived alone, controlled their health status more.

The findings showed that 21% of the elderly were not in a favorable general health status (Table3). In examining the relationship between HPBs and general health, the elderly who walked had a significantly higher general health ( $P < 0.001$ ), while the elderly who followed low-salt ( $P = 0.008$ ) and low-fat ( $P = 0.008$ ) diet had a significantly lower general health (Table 4).

**Table 3. The general health status of the participants**

General health status	Number	Percent
Desirable	294	79
Undesirable	78	21
<b>Total</b>	<b>372</b>	<b>100</b>

**Discussion**

The aim of this study was to investigate the relationship between HPBs and general health in the elderly in Minoodar district. Adherence to not smoking cigarettes, controlling health status, lack of drinking alcohol, and controlling blood pressure was more prevalent among elderly people than other HPBs but did not correlate with their general health status, while people who exercised (walking) had significantly higher general health. Other studies also showed a significant relationship between exercise and general health (10, 19, 20).

**Table 4. Mean and standard deviation of the general health by HPBs in participants**

Health promoting behaviors	Yes	No	Test result
	<b>Mean ± SD</b>	<b>Mean ± SD</b>	
No smoking	2.54 ± 2.95	1.72 ± 2.40	P = 0.09
Lack of drinking alcohol	2.44 ± 2.90	3.45 ± 3.58	P = 0.37
Doing exercise or walking	1.91 ± 2.58	3.37 ± 3.20	P < 0.01
Consuming low-salt food	2.69 ± 2.99	1.81 ± 2.59	P=0.008
Consuming low-fat food	2.69 ± 3.03	1.84 ± 2.50	P = 0.008
Consuming milk·dairy and meat dishes	2.45 ± 2.88	2.65 ± 3.28	P = 0.73
Consuming fresh fruit and vegetable	2.43 ± 2.89	2.85 ± 3.26	P = 0.47
Controlling health status	2.43 ± 2.89	2.90 ± 3.22	P = 0.44
Controlling blood pressure	2.43 ± 2.89	3.41 ± 3.44	P = 0.26

The elderly people who reported consuming low-salt and low-fat diet surprisingly had lower general health. That could be attributed to increasingly prevalent co-morbidities among the elderly leading to greater adherence to low-salt and fat diet. (10).

In this study, the level of dairy consumption was desirable (90%), and people with a better health status reported higher dairy consumption. These results are in line with the results of Habibi et al. (7), while the study by Sargazi et al. indicated that almost half of the elderly did not use the recommended amount of milk and its products (9). In some cases, milk and its products are associated with problems such as bloating and indigestion, and this may be the reason for less milk consumption and products among the elderly

A majority of the participants in this study controlled their health status during the last year. there was a significant relationship between controlling health status and age and family composition, so that younger people compared to older people, and those who lived with their spouses compared to single people controlled their health more, which is consistent with the findings of Habibi et al. (7), but inconsistent with the findings of Sargazi (9) and Salehi (21), which may be attributed to culturally confounding factors governing the communities studied in these two studies.

The findings of the present study showed that 21% of the elderlies did not have a satisfactory general health status. The study by Pasha et al. also showed similar results to the degree study (12), while in the study by Barati et al. the level of general health impairment was reported to be higher than that in this study (13). This inconsistency in the findings can be explained by cultural differences that may affect expression of life satisfaction. Elderly people who were financially independent had better general health. Obviously, poverty and social deprivation are one of the biggest barriers to the acquisition and maintenance of comfort and safety in the elderly, while older people with an unsatisfactory economic status are at higher risk of developing disease, which itself reduces their general health (9).

## Conclusion

Although about 80% of the subjects had a satisfactory level of general health, but the rate of doing some HPBs, such as exercise (walking), were

not good, while older people who walked had higher general health. Different factors such as age, gender, self-reported current health status, economic status and marital status affect the HPBs and then general health among the elderly in Qazvin.

It is suggested that, in addition to the inclusion of training packages for HPBs in the Integrated Care Program for the Elderly (approved in 2009 by the Ministry of Health and Medical Education), studies on the impact of education, particularly peer education, on the quality and quantity of HPBs and general health of the elderly be conducted.

## Study limitations

The limitations of this study include self-report data, not including the whole city of Qazvin, and lack of studying nutritional behaviors using the food frequency questionnaire, which should be carefully taken into account in using the results of the study.

## Conflict of interest

The authors declare no conflict of interest.

## Acknowledgment

Hereby, we gratefully thank the elders who helped us conduct this work, and also the Research and Technology deputy of Qazvin University of Medical Sciences for financial support of the project and the officials of the Health Center of Minoodar, Qazvin.

## Authors' contribution

Conceived the study: LD, AS.

Conducted data analysis: EN, LD.

Interpreted the data: AG .

Critically reviewed and revised the draft: LD, AS, FM, AG.

The final manuscript was read and approved by all authors and therefore they are responsible for its content.

## References

1. Mayer CH, Williams B, Wagner EH, LoGerfo JP, Cheadle A, Phelan EA,. Health care costs and participation in a community– based health promotion

- program for older adults. *Preventing Chronic Disease*. 2010; 7(2): 1-8.
2. Senol V, Unalan D, Soyuer F, Argun M. The Relationship between health promoting behaviors and quality of life in nursing home residents in Kayseri. *Journal of Geriatrics*. 2014; 1-8.
3. Kim SH. Older people's expectations regarding ageing, health-promoting behaviour and health status. *Journal of Advanced Nursing*. 2009; 65(1): 84-91.
4. Harooni J, Hassanzadeh A, Mostafavi F. Influencing factors on health promoting behavior among the elderly living in the community. *Journal of Education and Health Promotion*. 2014; 3: 40.
5. Yeom HE. Symptoms, aging-stereotyped beliefs, and health-promoting behaviors of older women with and without osteoarthritis. *Geriatric Nursing*. 2013; 34(4); 307-13.
6. Ghorbani A, Karimzadeh T, Azadmanesh Y. Nutritional assessment in elderly hospitalized patients in Qazvin Teaching Hospitals in 2011. *Iranian Journal of Ageing*. 2013; 8 (1): 33-40. [Persian]
7. Habibi A, Nikpour S, Seyedshohadaei M, Haghani H. Health promoting behaviors and its related factors in elderly. *Iranian Journal of Nursing*. 2006; 19 (47): 35-48. [Persian]
8. Salehi L, Eftekhari H, Mohammad k, Tavafian SS, Jazayeri A, Montazeri A. Consumption of fruit and vegetables among elderly people: a cross sectional study from Iran. *Nutrition Journal*. 2010; 9(2): 1-9.
9. Sargazi M, Salehi S, Naji S. A study on the health promoting behaviors regarding hospitalized older adults' health in Zahedan. *Journal of Zabol University of Medical Sciences and Health Services*. 2012; 4 (2): 73-84. [Persian]
10. Aslankhani MA. The relationship between physical activity and general health of elderly men and women in Tehran. *Science of Human Movement Journal*. 2008; 1: 51-57. [Persian]
11. Ahamadi Tahoor M, Jafari I, Karami Nia R, Akhavan H. The effect of positive and negative perfectionism and type D personality on general health of the aged. *Journal of Hamedan University of Medical Sciences* .2010; 17 (3): 64-9. [Persian]
12. Pasha GH, Safarzadeh S, Moshak R. Comparison of elder's general health and social support living at homes and in public nursing homes. *Journal of Family Research*. 2008; 3(9):503-17. [Persian]
13. Barati M, Fathi Y, Soltanian AR, Moeini B. Mental health condition and health promoting behaviors among elders in Hamadan. *Journal of Hamadan Nursing & Midwifery*. 2012; 20 (3):12-22. [Persian]
14. Kalroozi F, Pishgooie AH, Taheriyani A. Health-promoting behaviours in employed nurses in selected military hospitals. *Journal of Health Promotion Management* .2015; 4 (7):7-15.
15. Goldberg D. *General Health Questionnaire (GHQ-12)*. Wind-sor, UK: NFER-Nelson; 1992.
16. Yaghobi H. Screening for mental disorders: Status and how to test and validate the cut score. *Journal of Mental Health*. 2008;1(1): 39-51 .[Persian]
17. Ebadi M, Harirchi AM, Shariati M, Garmaroudi GH, Conqueror A, Montazeri A. Translation, reliability and validity of the 12-item General Health(GHQ). *Payesh Journal* .2002;1(3): 39-46. [Persian]
18. McBee S, Cotugna N, Vickery CE. Fruit and vegetable consumption in an elderly population. *Nutrition for Elderly*. 2001; 21(1): 59-67.
19. Montazeri A, Harirchi AM, Shariati M, Garmaroudi G, Ebadi M, Fateh A. The 12-item General Health Questionnaire (GHQ-12): translation and validation study of the Iranian version. *Health and Quality of Life Outcomes*. 2003; 1(1): 66.
20. Lee TW, Ko IS, Lee kJ. Health promotion behaviors and quality of life among community-dwelling elderly in Korea. *International Journal of Nursing Studies*. 2006; 43(3): 293-300.
21. Salehi L, Eftekhari H, Mohammad K, Taghdisi MH, Shojaeizadeh D. Physical Activity among a Sample of Iranians Aged Over 60 Years: An Application of the Transtheoretical Model. *Archives of Iranian Medicine*. 2010; 13(6): 528-36.