

EXERCISE AND PHYSICAL ACTIVITY AMONG HEALTHY ELDERLY IRANIANS

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Abstract. The aim of this qualitative study was to explore the experiences of elderly Iranians regarding exercise. Sixteen healthy elderly people participated in semi-structured interviews conducted in 2009 in Tehran, Iran. A qualitative content analysis was used to analyze the participants' experiences and perceptions regarding physical activity. Five main categories were studied: 1). kinds of exercise activities, 2). common activities, 3). engaging in reasonable activities, 4). barriers to physical activity, and 5). effects of exercising on life. Distinctive themes within each of the categories were identified. The findings of this study show the current perceptions regarding physical activity and exercise in elderly Iranians.

Keywords: elderly people, physical activity, exercise, qualitative content analysis

INTRODUCTION

The increase in life expectancy because of socioeconomic progress has produced a population of elderly people that is growing in size throughout the world (Tas *et al*, 2007) including in Iran. The elderly in Iran are expected to reach 14.7% of the population by 2025 (Mirzaei and Shams, 2007).

The increase in the elderly population has medical and economical consequences for the individuals and society (Tas *et al*, 2007). The inability to carry out some physical activities, such as bathing, dressing, toileting, moving and feeding,

is associated with advanced age (Jagger *et al*, 2001). Disability leads to increasing health costs and diminishing quality of life for the elderly (Tas *et al*, 2007). Preventing or reducing disability is important in an aging society (Hirvensalo *et al*, 2000).

Exercise, as a subcategory of physical activity, is defined as a planned and structured physical movement performed to obtain a better or maintain a physical condition (National Institutes of Health Consensus Development Conference Statement, 1996).

Some geriatricians have suggested approximately half of all physical deterioration can be avoided through healthier lifestyle, such as having sufficient physical activity (O'Brien Cousins, 2003). Physical activity and exercise have both physical and psychosocial benefits in the elderly (Ringsberg *et al*, 2001). They can enhance functional performance, improve survival

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(Buttery and Martin, 2009), enhance quality of life, prevent osteoporosis, prevent coronary artery disease and non-insulin-dependent diabetes mellitus, decrease the risk of falling (Brady and Nies, 1999; Resnick, 2001; Duchman and Berg, 2006), improve sleep (Alessi *et al*, 1999), decrease the risk of dementia (Rovio *et al*, 2008, unpublished data), enhance mood and general well-being, improve blood pressure and decrease relative abdominal fat (Brady and Nies, 1999; Resnick, 2001).

Better physiological and psychological performance help to preserve personal independence and decrease the need for care services (Brady and Nies, 1999). Glass *et al* (1999) found subjective well-being is associated with physical and social activities and the number of health conditions. Understanding the significance of regular exercise in protecting function and prolonging active life expectancy (Brady and Nies, 1999) is important for increasing regular physical activity and exercise.

Physical activity in older adults has become an important goal of gerontologists (Booth *et al*, 2000), since evidence shows low level of normal physical activity in this group (Fox and Rickards, 2004). In spite of the known benefits of exercise, only one-third of elderly report regular exercise (Clark, 1999).

Some elderly people find physical activity enjoyable. The elderly have more leisure time but the level of activity is still less than expected. Research has shown people want to have longer, healthier lives but few make the effort to increase their activity. Physical activity decreases considerably with age. Only a small number of elderly people meet the optimal activity goal of 30 to 60 minutes of moderate exercise daily (O'Brien-Cousins, 2003).

Some authors reported elderly people

have been cautioned to refrain from physical activity (Grant, 2001). There is evidence indicating health professionals do not give advice to elderly people regarding physical activity (Buttery and Martin, 2009).

The majority of the Iranian population consists of young people; Iranian elderly people have been neglected to a great extent (Hasanpour *et al*, 2007). A review of the literature shows there are quite a few studies related to age group exercise patterns in Iran. Research regarding healthy lifestyles and exercise among Iranian elderly people is of utmost importance (Sadat Madah *et al*, 2009). We explored exercise and physical activity among Iranian elderly using a qualitative approach since qualitative study researchers can go beyond numbers and listen to the words and rationalizations people employ to "talk themselves" into or out of motivational states related to health information (Cousins, 2003).

MATERIALS AND METHODS

Participants recruitment

Participants in the study were selected through purposeful sampling. The participants were 16 elderly people aged 65-86 years found in the workplace, at home, in clinics, parks, and mosques in Tehran, Iran. The following criteria were applied to choose the participants: age ≥ 65 years old, living with family, not having any cognitive problems, not having any physical limitations in activities at daily living (ADL) and willingness to take part in the study. All the participants were Shiite muslims.

Research ethics

Permission to conduct this study was obtained from the Ethics Committee of

Table 1
Interview question focus.

Beliefs, attitudes, values and experiences of elderly people about exercise and activity.
Problems, difficulties, barriers and obstacles to exercise and activity.
Expectations, solutions and suggestion for exercise and activity in the elderly.

Tarbiat Modares University, Faculty of Medical Sciences. The researchers also obtained the participants' permission to audiotape each interview. All the participants were informed regarding the purpose of the study and written consent was obtained. Assurance of confidentiality was made.

Data collection

The data were collected through semi-structured interviews. The interview was carried out when convenient for the participant. The interviews were carried out in a private room in the participant's, house, at the park, worksite or mosque.

The interview consisted of open-ended questions to allow respondents to describe their opinions, perceptions and experiences. The participants were asked to describe one day of their life and then to explain their own experiences and perceptions about "physical activity of elderly people". The major focus of the questions was on the participant's experiences with physical exercises in adulthood. To measure the validity of the interview questions (Table 1), we used content validity by means of a panel of experts.

Most interviews took place in one session, except in two cases which took place in two sessions. Each interview lasted 30 to 90 minutes with an average of 55 minutes as shown in Table 2.

The audio data were immediately transcribed verbatim and analyzed using qualitative content analysis. The data

were analyzed using qualitative content analysis. Qualitative content analysis is a method for the subjective interpretation of the content using a systematic classification process of coding and identifying themes or patterns. Categories in content analysis are developed from data analysis. The benefit of conventional content analysis is determining the experience of the study participants without compelling presupposed categories or theoretical perspectives (Hsieh and Shannon, 2005). Qualitative content analysis focuses on the subject and context, and emphasizes differences between and similarities within codes and categories. With qualitative content analysis categorizing the data into meaning units is a way of interrupting the ongoing communication in a text and is important for latent content when beginning and ending a meaning unit (Graneheim and Lundman, 2004). In this study, the technique of coding according to qualitative content analysis was used to derive themes and categories from the data. Each interview was analyzed before the next interview occurred. Thereby, the data were tested and revised during analysis of the following interviews.

Trustworthiness

Credibility was recognized through prolonged engagement with the participants, field note writing, participant revisions using member checking and peer checking. The transcripts with open coding were sent to some of the interviewees,

Table 2
Interviews and length of time.

ID code	Number of interviews	Length of time (min)
A	1	30
B	2	90
C	1	75
D	2	90
E	1	55
G	1	45
H	1	63
I	1	43
J	1	50
K	1	40
I	1	70
J	1	55
K	1	65
L	1	54
M	1	75
N	1	90
Total	18	990 mean = 55

to ensure accuracy and for better validity of the research. All participants agreed with the codes and, in some instances composed supplementary comments that were used as data. The findings and explanations of this study were reviewed by two supervisors who are associate professors in nursing having a good background in qualitative research methods and several international publications. Maximum variation in sampling established the conformability and credibility of the data. This study provided sufficient descriptive data for researchers to critique whether the results were transferable.

RESULTS

The 16 participants consisted of eight men and eight women. A demographic history of the subjects interviewed is shown in Table 3.

Several main themes and categories were extracted from the data and 3-6 distinctive subcategories within each category were identified. These categories and their subcategories are representative of the main factors influencing physical activity among elderly Iranians.

The categories were: kinds of exercise activities, common activities, engaging in reasonable activities, barriers to physical activity and effects of exercising on elderly life. These categories and their subcategories are shown in Table 4.

Kinds of exercise activities

One of the main categories that emerged from data analysis was "kinds of exercise activities". Five subcategories were observed from participant responses: morning exercise, playing ping pong, swimming, walking and jogging, and exercising to decrease lethargy.

A few participants reported daily morning exercise and all participants reported some exercise, such as walking, swimming and in one case playing ping pong. The following comments exemplify this theme.

"Early in the morning, I wake up exercise for at least 20 minutes before breakfast. In the morning I come to Laleh Garden to watch the sunrise and exercise there. I also play ping pong in the evening three times a week. This sport has a lot of movements and I burn a lot of fat." (A 72 year old, male participant).

"In the morning after saying my prayers I exercise for one hour. When I get back home at 7, I sleep until 8, then I get up and eat breakfast." (An 80 year old male participant).

"Because I exercise, my medical tests do not show anything. In the mornings I exercise while watching

Table 3
Participant demographics.

ID code	Age (years)	Sex	Education	Marital status	Occupation
A	67	F	Primary	Widowed	Housewife
B	72	F	Illiterate	Widowed	Housewife
C	65	F	Diploma	Married	Employer
D	80	M	Illiterate	Married	Pensioner-Active
E	70	M	Illiterate	Married	Pensioner-Active
G	72	M	Diploma	Married	Pensioner-Active
H	65	F	Illiterate	Widowed	Employer
I	68	M	Diploma	Married	Pensioner
J	67	M	Illiterate	Married	Pensioner-Active
K	66	M	Diploma	Married	Pensioner-Active
I	65	F	Diploma	Married	Pensioner-Active
J	65	F	Diploma	Single	Housewife
K	86	M	Primary	Married	Pensioner
L	78	M	Primary	Married	Worker-Active
M	65	F	Bachelor	Married	Pensioner-Active
N	76	F	Bachelor	Widowed	Pensioner-Active

a Sport Show on TV for 20 minutes. When I get up I move my hands and legs to revive and refresh them." (A 72 year old female participant).

"If the weather is good and my lungs are in good condition I come to this park, stroll a bit, exercise, walk around, gambol and frolic, then I get back and bring breakfast to the park, take a walk on the street and go home at night. I exercise well during the day so my body does not get numb. In summers I go to my garden and fool around there so I can get some exercise." (A 65 year old male participant).

"I go to a swimming pool twice a week and walk in the pool. I walk for 40 minutes a day. Sometimes I walk in the afternoon. It takes 20 minutes to go to the pool and 20 minutes to get back." (A 67 year old female participant).

Common activities

The next theme was common activities. Three subcategories include: doing house chores, volunteering activities, exercise during work and personal activity.

The majority of participants stated their activities included house keeping, participating in volunteer activities, being physically active at work and doing personal and private activities.

The following are some comments made by participants to elaborate on this theme.

"I do most of the household chores; there is nobody else to do household chores so I have to do them during the day to keep myself busy." (Two 65 year old, and one 80 year old male participants, and a 72 year old female participant).

"The day after our marriage I started sewing and continue until

Table 4
Themes, main categories and subcategories

Theme	Having dynamic spirits	Confusion in doing optimum physical activities	Toward healthy lifestyle
Category	Kinds of exercise activities	Engaging in reasonable activities	Barriers to physical activity
Subcategory	<p>Doing house chores, volunteering activity, exercise during work, personal activity</p> <p>Morning exercise, playing ping pong, swimming, walking and jogging, exercising for getting rid of lethargy</p>	<p>Doing exercise with regard to physical and environmental conditions, curing a disease with exercise, knowledge of the method of exercise</p>	<p>Effect of exercising on elder life</p> <p>Exercise an important factor in reducing elder problems, work and exercise two reasons underlying the improvement of elder life, exercise helping to resolve family problems, exercise leads to physical and mental health, exercise the basis for vivacity</p>
Codes	<p>Home activity</p> <p>Having volunteer work</p> <p>Doing personal works</p> <p>Having morning exercise in park</p> <p>Play ping pong with peers</p> <p>Going to park</p>	<p>Having attention to your situation</p> <p>Self management</p> <p>Having knowledge</p>	<p>Do not have enough time</p> <p>Do not have encouragement</p> <p>Do not have support</p> <p>Do not have power</p> <p>Being occupied</p> <p>Exercise reduces elder problems, jogging reduces elder problems, having good mood with exercise, exercise reduces family problems</p>

today. When I go home I do house-work then I sew. If I do not have any shopping, I say my prayers and then do the household chores that I could not finish the night before. Sometimes I sweep the floor at 7 in the morning or wash the yard." (A 67 year old female).

"I engage in voluntary work when I can help other people and feel alive because of it; it has benefits for the mind and the body." (A 65 year old and a 72 year male participant).

"I am interested in work outside the home; I have part time work in a private company. When I go to work I obtain a sense of independence, self confidence and self sufficiency in my life." (A 67 year old male participant).

"For the time being, I do two things for the sake of God. I have always said 'Oh God, please do not make me useless or a burden to people.' I hope to die while helping people or giving them service. Sometimes we collect money or goods for charity and give them to needy people on special religious occasions." (A 72 year old male).

"I walk at work until work time is over then go back home. I take a bus home and it takes 3 hours. I come here for a walk in the evenings; It makes me feel alive." (A 70 year old male).

Reasonable activities

Another important category was "engaging in reasonable activities" with 3 distinctive subcategories: exercising with regard to physical and environmental conditions, curing a disease with exercise and knowing how to exercise.

"I used to go to work after prayer but now if the weather is good and my

lungs are in good conditions I go to the park and walk unless the weather is cold. I do not put myself under a lot of pressure. Generally, I try to get some exercise." (A 65 year old male participant).

"When I had active rheumatism I started body building, I do not do this now because it hurts my neck, knees and hands and the doctor has told me not to do this kind of exercise. Once I washed a 12 meter carpet, lifted and dried it. These heavy tasks had bad effects on me. You should not do these things alone, they should be done with others." (A 67 year old female participant).

Barriers to physical activity

One of the categories that emerged from data analysis was "barriers to physical activity." Six subcategories were: time limitation, encouragement by others, social support, physical strength, work limitations and ailments.

Some elderly participants reported lack of sufficient time, lack of encouragement by family members and peers, lack of social support, physical weakness, limitations due to employment and illness were the most important barriers to physical exercise in Iran.

"I do not go out too often, and when I do I take a cab. My daughter does the shopping for me because I cannot carry things. I do not have anybody to encourage me. They tell me not to go out but I go and return with a painful back. I get tired easily, even if I take just two steps I get tired". (A 72 year old female participant).

"Some have lost their mental and physical strength for particular reasons, such as lack of support by others. They just receive advice from

TV programs." (A 65 year old male participant).

"I went for body building but my legs became painful and my knees hurt and I gave it up. I am tired and do not like to go anywhere, but I go in spite of what I want. Work does not let me rest; I have to do the job. I really do not want to leave the job undone." (A 67 year old female participant).

"I do not have time; walking here in the evening makes me feel refreshed. I should say I do not have even one day of the year off." (Another participant).

Effects of exercise

Another most important category that emerged was "the effect of exercise on the life of the elderly". This included five sub-categories: exercise to reduce problems in the elderly, work and exercise improve the lives of the elderly, exercise helps to resolve family problems, exercise leads to physical and mental health and exercise is the basis for vivacity.

"Walking, exercise, healthy nutrition and healthy thoughts are vital elements in older life. One problem is leg pain, others are high cholesterol and diabetes. You always suffer from one of them. Healthy nutrition solves half the problem." (A 65 year old female participant).

"There are 3 or 4 age groups: a group who can still work, they bring things home and work at home, a group 50 to 60 years old, many of whom are still active, they still work outside the home, and another group who cannot go out and are unemployed. There is another group who are really ill, they are weak or have suffered from a heart attack and they cannot work. What can they do?"

(A 72 year old male participant).

"My wife has been in a wheelchair for 33 years and has had various ailments which have led to her psychiatric problems. I try to raise her spirits. If I can stand on my own feet, then she will stand on her own feet and that is why I started exercising. I love exercise because exercise is a means for improving my family condition, I became my wife's physician and put a stop to many of her disorders. I have been exercising now for 15-16 years every morning in the park." (One male participant).

"If you go to the swimming pool and walk in the water, it is good for you. It has been good for me. An elderly person should live in a comfortable place. The building should not have stairs. When my kitchen was in the basement I kept forgetting what I wanted to do there. When you are an athlete you will have high spirits. If you know your body is healthy you can always go mountain climbing, or jogging and face no problems, then when you come home, you are calmer. First take care of your own body then consider your future welfare, work is very good. When a person works it is as if life is breathed into him or her. He or she feels they are alive." (A 67 year old female participant).

"I work out to prevent my body from going numb. I take a walk in the morning and feel refreshed until evening." (A 65 year old and a 70 year old male).

DISCUSSION

Physical activity and exercise have been linked to both physical and psychosocial benefits in elderly people (Ringsberg *et al*, 2001). The Department of Health

and Human Services (DHHS) suggested that all adults should have at least 30 minutes of physical activity daily or 150 minutes of moderate physical activity per week (Lin *et al*, 2007). Despite the known benefits of exercise, only a few elderly people reported getting regular exercise in our study.

Clark (1999) found the elderly had lower activity levels and exercise scores. He also reported the elderly were encouraged not to have physical activity by their primary health care provider.

Wu *et al* (1999) reported exercising gave a relative risk of 0.52 for morbidity involving activities of daily living. Burke *et al* (2001) reported high intensity exercise had a relative risk of 1.42.

Elders recognize the physical and psychological benefits of exercise. Qualitative studies have confirmed the beneficial effects of knowledge about exercise in the elderly (Resnick and Spellbring, 2000).

In all previous studies, elderly participants have declared physical activity as effective in preserving physical independence and good health (Kubota *et al*, 2005). There is a gap between a knowledge of the benefits of exercise in the elderly and exercise activity (Resnick, 2001).

Inadequate exercise can increase the cost of caring for and decrease the well-being of older adults. Therefore, nurses and health professionals must understand this and promote exercise in older people (Parotta, 1999). Promoting healthy behavior in this population is a challenge (Parotta, 1999). Health care professionals have the influence to develop useful interventions to improve physical activity in the elderly (Lin *et al*, 2007).

The majority of our participants reported they spent much of their time in caring for their spouses, doing household

chores, going shopping and workday activities. They did not have enough time for physical activity. This finding is consistent with that of Eyler *et al* (1998).

The main barriers to physical activity identified in this study were lack of time and lack of support by others. One participant stated he was advised by an expert to exercise. This finding is consistent with previous studies (Brady and Nies, 1999; Grant, 2001; Ringsberg *et al*, 2001). Health professionals' advice has been related to enhanced activity in the elderly (King *et al*, 1998). This finding suggests a lack of sufficient advice by health professionals regarding exercise (Buttery and Martin, 2009).

Some researchers believe developing interventions to reinforce self-efficacy may promote exercise behavior in the elderly (Resnick, 2001). One study showed that social support, self efficacy and motivation stimulate the interest to exercise (Walcott-McQuigg and Prohaska, 2001). Lin *et al* (2007) found elderly with good social support for physical activity were more likely to be healthy. Social support significantly influences leisure physical activity. Social support is an important factor for increasing physical activity in the elderly (Eyler *et al*, 1998). Lin *et al* (2007) found the majority of participants reported their family encouraged them to exercise and they received social support from their children. They had a better sense of control in their lives.

Barriers to exercise include loss of motivation and lack of encouragement. Im and Choe (2001) found women's attitudes about physical activity were affected by their culture. Some women's cultures prevent them from getting moderate exercise during pregnancy and the postpartum period, and sometimes during menstrual periods.

Participation of a retired person in voluntary work may be affected by their physical health status. Retirees are more likely to have poorer physical health, less mobility, ability and time to volunteer (Wu *et al*, 2005). Researches regarding volunteering indicates volunteering is related to life satisfaction (Van Willigen, 2000; Musick and Wilson, 2003), psychological and social resources (Musick and Wilson, 2003), a sense of competence and control (Thoits and Hewitt, 2001), good health and lower mortality risk (Van Willigen, 2000).

In this study some participants reported participating in voluntary work after retirement and indicated participating in this kind of work had a positive impact on their health. Wilson (2000) indicated that volunteering enhances both physical and mental health. Volunteering seems helpful for the well-being of the elderly who are active volunteers, especially among those who are reported to have informal social interactions or who are volunteering for religious organizations. Wu *et al* (2004) found older volunteers reported higher levels of self-efficacy and better physical health. Morrow-Howell *et al* (2003) found multiple voluntary roles result in a good quality of life, increases social participation and enhancement self-esteem and self-efficacy.

The main limitations of this study were the illiteracy of nearly all the participants and difficulties in keeping in contact with the elderly, which resulted from the loneliness and /or mental problems of the elderly. In this study, we did not take into account the promotion model of physical activity which has a significant role in the life style of the elderly. Therefore, it is important to develop a model for promoting physical activity in the elderly appropriate to the context of their life.

In conclusion, interventions, such as educational programs and physical activity instructions by health professionals may encourage the elderly to be physically active and have a healthier life. Educational programs using mass media can play an important role in providing basic information about the advantages of physical activity. The education can lead to the creation of a social-cultural norm of good physical activity in the elderly. Providing information about the benefits of physical activity, encouraging older people to volunteer and forming a supportive culture for elderly people would be valuable interventions to increase older adult physical activity. Health professions should encourage the elderly in health-promoting behaviors, especially physical exercise.

ACKNOWLEDGEMENTS

We would like to thank the participants for their generous help in this research.

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