

Research Paper

The Relationship Between Sleep Quality and Lifestyle of the Elderly



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ABSTRACT

Objectives Elderly lifestyle and factors such as physical activity, sleep quality, and nutritional patterns affect quality of life. The purpose of this study was to determine the relationship between sleep quality and elderly lifestyle with an emphasis on physical activity.

Methods & Materials A descriptive-analytic research method was used in which 130 elderly women aged 60-70 years old in Qazvin City in 1397 at the Sports and Health Consultation Center of Sports and Youth Department of Qazvin Province were selected by available sampling method. The nutritional analysis of the subjects was evaluated before the tests to control the effect of food intake on the results using N4 software. The sleep and physical activity recording device (Actiwatch-8) was used to collect data. Pearson correlation coefficient was used for data analysis.

Results The results of the study showed that there was a significant relationship between physical activity with sleep duration ($P=0.04$), awakening bouts ($P=0.038$), actual sleep ($P=0.003$) and time in bed ($P=0.035$).

Conclusion According to the results, the sleep patterns have a direct relationship with physical activity behavior; therefore, it is recommended to increase the duration of activity in order to improve the quality of sleep in the elderly.

Key words:

Life style, Aged, Sleep

Extended Abstract

1. Introduction

The increase in the elderly population and its consequence costs in different societies has consistently been considered in recent decades [1, 2]. The growing population of the elderly around the world is referred to as the graying population or forced aging [3]. Thus, it is necessary to allocate a major part of the health resources of any society to the elderly. The consequences of this age group have

been repeatedly supported in various studies in the form of deteriorating alternations in the physiological, cognitive, and psychomotor functions of the elderly. Accordingly, motor disorders and psychological issues are among the factors that cause various behavioral problems, including sleep disorders in the elderly. The process of aging and approaches to living healthy in this period are presented through relief from the disease, being active, and developing physical and biopsychological skills [4].

Sleep is a physiological behavior, i.e. part of the daily life of each individual. Sleep is an appropriate process to recover, renew, and restore the function of the nervous and physiological

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systems of the body. Sleep can also affect the biological clock. The biological clock is the part of the brain that regulates rhythmic and vital functions, such as blood pressure, heart rate, and hormone secretion [5]. Prior research suggests that sleep disorders are the third most frequent problem in the elderly after headaches and gastrointestinal conditions. In this regard, behavioral disorders occurring during sleep, such as frequent waking up during the night, waking up early, snoring, and decreased sleep hours have been reported in the elderly [8].

Proper physical activity and fostering an appropriate sleep-wake pattern are among the characteristics that can lead to successful aging. Sleep disorders and reduced sleep duration are prevalent issues in the elderly. They also encounter reduced physical activity. Thus, the present study aimed to investigate the relationship between sleep quality and physical activity and the quality of life in the elderly. The obtained data could provide effective solutions in this aspect.

2. Methods & Materials

Given the nature of the subject and the intended objectives, this was a descriptive-analytical research, i.e. conducted cross-sectionally in 2018 in Qazvin City, Iran. The statistical population of the study included all the elderly women who had referred to the Sports and Health Counseling Center of the General Directorate of Sports and Youth of Qazvin Province for sports counseling.

In total, 147 elderly women aged 70-60 years were selected by convenience sampling approach. Considering that the elderly present different gender-wise sleep behaviors, depression and physical activity level were selected as the inclusion criteria for controlling these factors. Moreover, the final number of individuals whose data were analyzed equaled 130 subjects.

3. Results

The results of the Kolmogorov-Smirnov (K-S) test indicated that the data had a normal distribution ($P \leq 0.05$). The general data of the study participants are presented in Table 1. As per Table 2, the distribution of the data related to micronutrient intake and daily calorie intake of the research subjects was normal ($P \geq 0.05$).

According to Table 3, there was a significant relationship between physical activity and sleep duration ($P=0.043$), waking phases ($P=0.038$), actual sleep ($P=0.003$), and time spent in bed ($P=0.035$).

4. Discussion

The current study investigated the relationship between sleep quality and lifestyle in the elderly with an emphasis on physical activity. The present study results indicated a significant relationship between an active lifestyle and sleep patterns. Averagely, 21% of the research participants had a vigorous continuous physical activity for 20 minutes per day; 33% reported moderate continuous physical activity for 96 minutes, and 45% of them had a low-intensity physical activity for 124 minutes daily for a week.

Evidence suggests the effectiveness of unorganized physical activity on sleep behavior in the elderly. However, it is undiscovered whether this applies to older people with severe sleep disorders. Conducting empirical studies as well as a larger sample size can probably be effective and help professionals better improve the quality of life of the elderly. The obtained data concerning the effect of physical activity on the quality of sleep in the elderly were in line with previous studies suggesting that less exercise causes sleep disorders [16, 17]. A study highlighted that low-quality sleep (poor sleep) predicts low levels of physical activity in the next 2-7 years [18].

In this regard, performing cohort investigations and implementing effective training protocols over long peri-

Table 1. Demographic and anthropometric characteristics of the study subjects

Characteristic	Mean±SD
Age, y	65.3±3.1
Height, cm	157.4±4.4
BMI, kg/m ² *	31.8±4.3
Body fat percentage	35.3

*BMI: Body Mass Index

Table 2. Consumption of micronutrients and daily calorie intake (K-S test)

Group Food Analysis	Mean±SD	P
Calorie intake	1523.3±59.6	0.32
Carbohydrates, g	194±35.5	0.24
Protein, g	29±4.2	0.41
Fat, g	23.1±5.2	0.19
Fiber, g	14.8±3.7	0.17
Cholesterol, mg	39.3±1.9	0.23
Calcium, mg	234.3±19.4	0.10
Vit C, mg	46.3±5.2	0.14
Vit E, mg	5.2±1.1	0.17
Selenium, µg	47.3±7.4	0.46

Table 3. Relationship between physical activity and sleep patterns

Characteristic	Duration of Movement in Sleep	Awakening Phases	Actual Sleep	Time Spent in Bed (Waiting for Sleep)	
Physical activity	r	0.42	-0.038	0.846	-0.049
	p	0.43	0.038	0.003	-0.035

ods are recommended. The distinction between the present study and the above-mentioned research is employing an ethnographic methodology (instead of the Pittsburgh questionnaire) as well as exploring daily physical activity (instead of specific exercise protocols).

In general, any intervention that involves the elderly in physical activity will enhance their sleep function. The present study findings revealed that lifestyle, in terms of physical activity, has a significant relationship with sleep behavior in the elderly; thus, this issue should be considered by health policymakers concerning knowledge transfer to this community. Accordingly, a suitable platform could be developed to enhance the performance of the elderly in these areas.

Ethical Considerations

Compliance with ethical guidelines

All ethical principles were considered in this article. The participants were informed about the purpose of the research and its implementation stages; they were also assured about

the confidentiality of their information; Moreover, They were allowed to leave the study whenever they wish, and if desired, the results of the research would be available to them.

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Authors' contributions

All authors equally contributed in preparing this article.

Conflicts of interest

The authors declared no conflict of interest.