

# Association between physical activity and general health in teachers of the universities of medical sciences of Fars Province

## Asociación entre actividad física y salud general en profesores de las universidades de ciencias médicas de la Provincia de Fars

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**Abstract:** The aim of this study was to examine the association between physical activity and general health in faculty members of the Universities of Medical Sciences of Fars (Iran). The sample of this cross-sectional analytical study was composed of 244 faculty members of the Universities of Medical Sciences of Fars (Iran) in 2018. The data collection instrument included a three-section questionnaire: 1) Demographic characteristics (age, gender, and household income). 2) Short questionnaire for the measurement of habitual physical activity in epidemiological studies. 3) Goldberg General Health Questionnaire. Data analysis was performed using SPSS 16. The results showed that there was no significant statistical relationship between physical activity and general health subscales in the sample studied. Future studies about this topic with larger samples and in other regions are recommended.

**Keywords:** physical activity, general health, teachers, university.

**Resumen:** El objetivo de este estudio fue examinar la asociación entre actividad física y salud general en profesores de las universidades de ciencias médicas de Fars (Irán). La muestra de este estudio analítico transversal estuvo compuesta por 244 profesores de las universidades de ciencias médicas de Fars (Irán) en 2018. El instrumento de recopilación de datos incluyó un cuestionario de tres secciones: 1) Características demográficas (edad, género e ingresos del hogar). 2) Cuestionario breve para la medición de la actividad física habitual en estudios epidemiológicos. 3) Cuestionario de salud general de Goldberg. El análisis de los datos se realizó con SPSS 16. Los resultados mostraron que no había relación estadística significativa entre la actividad física y las subescalas de salud general en la muestra estudiada. Se recomiendan estudios futuros sobre este tema con muestras más grandes en otras regiones.

**Palabras clave:** actividad física, salud general, profesores, universidad.

### 1. Introduction

Health is one of the basic needs of man (Chhea, Warren & Manderson, 2010) and plays a vital role in the sustainable development of societies (Safair & Fattahzadeh, 2003). The World Health Organization (WHO) estimates that the magnitude of behavioral and psychological problems in developing countries is rising and that the phenomenon is largely driven by population growth and rapid social changes such as the breakdown of extended families, urbanization, lifestyle changes and economic problems (Yaghubi, 1995). The World Health Organization defines health as a state of complete physical, mental and social well-being, not just lack of disease or organ failure (Alavi, Ahmadi, & Zar, 2018). Human health depends on many factors such as heredity, physical activity, living environment, personal patterns and habits, medical care, and family, cultural, economic, and social backgrounds (Ramazani Negad, Niazi, & Hemati Nezhad, 2010). Karimian and Shokrchizadeh (2007) state that the role of physical activity on mental and physical health is highly important as a factor in human development and progress.

Exercise refers to all forms of physical activity that people

can do on a regular, organized or occasional basis, in order to improve their fitness or to provide entertainment and recreation (Watt, 2003). Exercise helps to increase well-being and social adjustment (Alamdari, & Abdi, 2019; López et al., 2019; Sánchez, López, Sgroi, & Díaz, 2019). It can also improve the level of dignity, self-esteem, and self-efficacy (Bigdeli & KaramZadeh, 2006; Esfahani, 2002). Physical fitness exercises can have a positive impact on the treatment of the patients with symptoms of depression and increase their emotional and behavioral responses (Asci, 2003; Voderholzer et al., 2011). Insufficient physical activity and sedentary lifestyle is the cause of 20% of deaths from cardiovascular diseases, cancer and diabetes. Physical activity is an important factor in reducing mortality and increasing longevity (Brill, 2004, Sharifirad, Mohebbi & Matlabi, 2007). In fact, regular exercise can increase life satisfaction, quality of life and health (González, Nicolás, & López, 2020; Nicolás, González, & López, 2020; Sánchez, Cepeda, Díaz, Smith, & López, 2019; Sánchez, Zauder, & López, 2019). Generally, motor ability increases vitality (Garatachea et al., 2009). Gillison, Skevington, Sato, Standage, & Evangelidou (2009) explain that physical activity has a positive impact on both physical and psychological quality of life domains. Despite the results

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of various researches on the benefits of exercise and physical activity on physical and mental health, the relationship between them is still not clear.

Nowadays, the psychological and physical dimensions of exercise attract the attention of many researchers. Public health has been assessed in all aspects of life, focusing on occupational health and on desirable efficiency of work in organizations that are associated with maintaining and promoting the health of the workers (human resources). In this regard, university professors are considered the most important part of human resources of universities. They are supposed to maintain and promote health in order to achieve more desirable efficiency in transferring knowledge to their students (Solhjoo, Afroozeh, Afroozeh & Kargar, 2011). Improving the efficiency and productivity of the university faculty staff requires their mental and physical well-being and vitality.

Due to full-time teaching during the week and educational, administrative, economic problems and the conditions dominating the work environment of the faculty, most of the university faculty members are far below their scientific and research capability. This situation probably originates from an inappropriate working environment in Iran universities and it might provoke job dissatisfaction. It can also have a negative impact on the academic teachers' lives and may expose them to mental and physical problems and, in consequence, they may have a harmful influence on the generation under their education (Hashemi et al, 2011). It can be assumed that regular physical activity could solve the problems connected with the health of the academic staff and, based on this assumption, the aim of this study was to investigate the association between physical activity and general health among faculty members of the universities of medical sciences of Fars Province.

## 2. Methods

### 2.1. Participants

The sample of this cross-sectional analytical study was composed of 244 faculty members of the Universities of Medical Sciences of Fars (Iran). Sampling was carried out through stratified random method. Ethics approval was obtained from the Ethics Committee of Jahrom University of Medical Sciences (IR.JUMS.REC.2017.149).

### 2.2. Instruments

The data collection instrument included a three-section questionnaire:

- 1) The first section contained three questions about the demographic characteristics of the subjects under study, including age, gender, and household income.
- 2) The second section included the short questionnaire for the measurement of habitual physical activity in epidemiological studies (Baecke, Burema, & Frijters, 1982). This questionnaire was designed to record physical activity over the last twelve months, and it has three factors: 1) physical activity at work; 2) sport during leisure time; and 3) physical activity during leisure time excluding sport. The validity and reliability of this questionnaire were also investigated in a study of 26 physical education students in the city of Sao Paulo (Brazil), obtaining an internal consistency coefficient of 0.77 (Florindo & Latorre, 2003). The validity and reliability of this questionnaire has been repeatedly assessed and verified in different countries, as well as in Iran with different groups (Sadeghisani, Manshadi, Azimi, & Montazeri, 2016).
- 3) The third section included the Goldberg General Health Questionnaire (Goldberg, 1988). It is composed of 28 items, with 4 sub-scales of 7 questions. There is a score for each subscale and a general health score. The 4 sub-scales are: Physical Symptoms Scale, Anxiety Symptoms and Sleep Disorders Scale, Social Function Scale, and Depression Symptom Scale. The reliability of the split-half method for this questionnaire, completed by 835 individuals, was 0.95 (Goldberg, 1988). In the study of Taghavi, with three tests carried out in Iran, the reliability coefficients of this instrument were 0.93, 0.70 and 0.90 (Taghavi, 2001).

### 3. Data analysis

Data were analyzed through software SPSS 16. Descriptive statistics included mean, standard deviation and frequency distribution. Pearson correlation test was also used to evaluate the correlation between physical activity and general health (subscales and total general health score).

### 3. Results

A total of 133 out of 244 participants were males and 111 were females. The mean and standard deviation of age of the sample was  $39.84 \pm 6.58$  years. The mean and standard deviation of income were  $6270000 \pm 2870000$  Iranian Toman per month (equivalent to  $1881 \text{ USD} \pm 861 \text{ USD}$ ). The mean and standard deviation of the main research variables are presented in Table 1.

**Table 1.** Central and dispersion indexes of the main research variables.

Variables	Mean	SD	Max value	Min Value
Physical activity	2.8822	.60748	4.75	1.50
General health score	16.9016	4.94232	39.00	7.00
Physical Symptoms Scale	5.1107	3.18692	21.00	.00
Anxiety Symptoms and Sleep Disorder Scale	3.4795	2.23413	12.00	.00
Symptoms of Social Function Scale	5.1762	2.47741	18.00	2.00
Depression Symptom Scale	3.1762	1.31691	10.00	.00

No significant correlation was found between physical activity and age and income. In addition, there was no significant correlation between gender and general health levels and its subscales, except for the physical symptoms subscale with gender (Table 2). Chi-square test was used to examine this correlation (chi-square: 8.34, df: 1, p-value: 0.003).

There was no significant correlation between the workplace city of the faculty members in medical sciences universities and their health, except for levels of social function scale and overall general health levels. Chi-square test was used to examine the correlation, which is reported in the following table of frequency of the city in terms of social function levels (Table 3).

**Table 2.** Frequency of gender by physical health area of general health

General health Sex	Healthy		Sick	
	Frequency	Percent	Frequency	Percent
Male	100	75.2%	33	24.8%
Female	64	57.7%	47	42.3%

**Table 3.** The frequency of the city in terms of the social domain of health.

City	Social Health		Total number per city	Chi-square value	DF	Statistical value
	Healthy	Sick				
Shiraz	95(94.1%)	6(5.9%)	101	41.995	3	.000
Jahrom	52(62.7%)	31(37.3%)	83			
Fasa	19(61.3%)	12(38.7%)	31			
Lar and Gerash	29(100%)	0(0%)	29			

In this study, Pearson correlation test was used to investigate the relationship between physical activity and general health subscales (Table 4).

**Table 4.** Correlation between physical activity and health (general health and subscales)

Total General Health	Depression Symptoms	Social Function	Anxiety Symptoms and Sleep Disorders	Physical symptoms	Physical symptoms
.026	-.014	.030	.011	.018	r
.683	.830	.646	.858	.774	p-value
244	244	244	244	244	N

The results showed that there was no significant statistical relationship between physical activity and general health subscales. Based on the test between physical activity and physical symptoms scale (r = 0.018 and p-value = 0.774), anxiety symptoms and sleep disorders scale (r = 0.011 and p-value =

0.858), social function scale (r = 0.030 and p-value=0.646) and depression symptoms scale (r = -0.014 and p-value = 0.830), there were no statistically significant relationships.

#### 4. Discussion

One of the major assets of an organization are the human resources. Therefore, it is important to identify and determine correctly the factors that affect the health of the organization staff.

The present study was conducted on 244 faculty members of the universities of medical sciences of Fars Province and investigated the association between physical activity and general health. No significant differences were found according to gender, results that are not consistent with Sadeghi Brojerdi, Yousefi & Ghobadi (2007) study, where it was concluded that women's general health is poorer than men's.

The results also indicated that there was no significant statistical association between physical activity and general health. These findings are consistent with the results of Khaledan's (2000) research, which stated that participation in a variety of physical activities is likely to have a very small contribution to health. Also, the results of another study conducted by Kashf (2009) on faculty members at public universities showed that there was no significant relationship between health and physical activities. Moreover, in the study of Sharifirad, Mohebbi & Matlabi (2007) there was no significant relationship between physical activity and general

health. However, the results of many studies, such as Wu et al. (2017) and Tofighi, Babaei, Eloon Kashkuli & Babaei (2014) showed a significant relationship between physical activity and general health. Soltani Shal, Aghamohammadian Sharbat & Ghanaei Chamanabad (2003) examined the effect of exercise on general health, sleep quality and quality of life of students of Mashhad University and concluded that the difference between the experimental and control groups in all the variables was statistically significant.

The main strength of the present study is the use of validated instruments. However, the results of this study should be interpreted considering its limitations. The main limitations were that physical activity and general health were self-reported and the sample size. Therefore, future studies about this topic with objective measures, larger samples and in other regions are recommended.

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