

# Assessment of physical activity in medical and public health students

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## ABSTRACT

**Background:** Reduced level of physical activity, as an important problem of urbanization and industrial development, has a considerable impact on the population morbidity and mortality. The rate of inactivity has been reported to be 60–85% in adults worldwide. Considering the importance of physical activity among youth, the aim of this study was to evaluate the physical activity among university students. **Materials and Methods:** In this cross-sectional study physical activity was assessed in 399 medical and public health students of Isfahan University of Medical Sciences, Iran. Physical activity was evaluated by standard questionnaire in four fields containing job, transport, work, and leisure time at home. **Findings:** Regarding moderate physical activity, 48.6% of students were active and the rest were inactive. Regarding severe physical activity, 32.6% were active and the rest were inactive. Mean number of hours for moderate activity per day was  $1.96 \pm 0.19$  h/day in the last 7 days. There was a significant relationship between physical activity and sex and students' course of study. **Conclusion:** The results indicated that the level of physical activity was not sufficient among students; therefore, considering its importance among students, it is necessary to educate them regarding lifestyle modification specially to increase the level of physical activity during their leisure time.

**Key words:** Inactivity, physical activity, student

## INTRODUCTION

Sedentary life is a global problem in line with promotion of community health. According to the studies of the World Health Organization (WHO), inactivity is one of the ten major causes of mortality in the world so that approximately 2 million deaths annually occur due to it. Lack of physical activity increases all the mortalities and doubles the risk of

cardiovascular diseases, type II diabetes and obesity. Moreover, it increases the risk of breast and colon cancer, hypertension, lipid disorders, osteoporosis, depression, and anxiety. The rate of inactivity and sedentary is high in all the developed and developing countries and this issue is considered as a major problem in large cities and industrialized communities.<sup>[1]</sup>

According to statistics provided by the WHO, physical inactivity modified from the eastern Mediterranean region estimated to be 1,240,000 deaths and 1,243,000 lost life years.<sup>[2]</sup>

In Iran, inactivity is in 65% of adults and is considered as one of the effective factors in prevalence of cardiovascular diseases and cancer.<sup>[3]</sup>

Regular physical activity has many benefits for human's health. At least 30 min of moderate physical activity per day is adequate to achieve many of these advantages. Furthermore, regular physical activity improves mental health of young people.<sup>[4]</sup>

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Inactivity problem in a society is of high importance particularly in the young population and it is necessary to evaluate the amount of their physical activity to improve lifestyle of this group. The present study was conducted aiming to evaluate the physical activity status of the university students in department of medical sciences and health which by itself can have an effective role in healthy life education in society and it is hoped that officials and planners, particularly those involved in cultural and welfare affairs, and also other organizations such as Organization of Physical Education, municipalities, etc., pay attention to the obtained results.

In addition, the present study would be useful and effective in developing an educational program to encourage youths for doing physical activity, different types of these activities, regulating the educational programs of physical education, publishing and spreading the data and information about benefits of physical activity, encouraging private and public sectors for investment in this regard, and legislating the laws and local policies for supporting regular physical activity.

## MATERIALS AND METHODS

This was a cross-sectional study in which moderate and severe physical activity of the students were evaluated in four domains of job, home chores, spending leisure time, and moving from one place to another. Moderate physical activity means that their physical effort requires a moderate level and individual's breathe a little faster than normal breathing. For instance we can name normal sweeping and regular walking. Severe physical activities are those which make breathing more than normal such as running and the duration of these activities were evaluated in terms of minute and hour per day and day per week.<sup>[5]</sup> The studied group were the students of Schools of Medicine and Health of Isfahan University of Medical Sciences including medical course of study, public health, occupational health, environmental health, and nutrition in BSc to PhD degrees. According to the formula, 399 students from each semester in each grade were randomly selected and the number of students was selected according to their number in each course of study.

Data were collected through completing the standard questionnaire.<sup>[5]</sup> This questionnaire had 27 questions in four domains of job, home chores, spending leisure time, and

moving, which was completed in Winter 2008 as self-played. The reliability of the questionnaire calculated after completion of 10 items as pilot study through Cronbach's alpha coefficient ( $\alpha = 0.85$ ). Thereafter, the data were analyzed through the software SPSS by chi-square, Pearson correlation coefficient, and multivariate relationship between the independent variables of age, sex, course of study, and social class of students with their physical activity.<sup>[6]</sup> Considering that only 4.5% of students studied were employed, no comparison was done between employed and nonemployed groups.

## RESULTS

The age range of the students was 18–35 years with mean and SD of  $21.7 \pm 2.5$  years and median age of 22 years (mean and SD of age in females and males was  $21.61 \pm 2.6$  and  $21.94 \pm 3.08$  years, respectively). In terms of educational degree, 25.6% were in base courses, 8.3% in clinical courses, 21.1% in public health, 16.5% in occupational health, 5% in environmental health, 15% in nutrition, and 8.5% in MSc. Moreover, 87.2% of them were single and 12.8% married.

The results indicated that 93.7% of the students used vehicles for commuting (i.e., had no physical activity for transferring) and on average spend 1.5 h a day transferring with vehicle. Moreover, 2.5% of the students used bicycle irregularly for transferring. Furthermore, although 91.7% of them used to walk, it was not enough and irregular so the mean was not calculable in terms of days per week. However, on an average they walked an hour a day from one place to another.

Physical activity status of the students at home or their leisure time is illustrated in Table 1. The result indicated that 25.3% of students had severe physical task for more than 3 days a week and 34.1% had moderate physical tasks at home.

In this relationship, 24.4% of the students had severe physical activity more than 2 h a day and 28.5% of them had moderate physical activity more than 2 h a day in their leisure time.

On an average, the duration of sitting while studying in students was 7.64 h a day. As many as 93.5% of the students used to sit more than 2 h a day during a week and 92.2% used to sit more than 2 h during holidays.

**Table 1: Distribution of physical activity in the study subjects at home chores and leisure time**

| Activity areas | Activity circumstance   | They have activity |            | Mean duration of activity (minute per day) |
|----------------|---|--------------------|------------|--|
|                |   | Number             | Percentage |  |
| Home chores    | Home chores with moderate activity such as sweeping and washing dishes        | 255                | 63.9       | 60   |
|                | Home chores with severe activity such as carrying heavy objects and gardening | 91                 | 22.8       | 15   |
| Leisure time   | Walking in leisure time   | 276                | 69.2       | 36   |
|                | Severe activity in leisure time such as sport exercises                       | 160                | 40.1       | 29   |
|                | Moderate activity in leisure time such as swimming                            | 172                | 43.1       | 35   |

In contrast, the overall status of students in terms of moderate and severe activities in related domains as well as its relationship with age, course of study, social class, and sex was assessed through multivariate analysis [Table 2].

Generally, moderate activity in MSc students and severe activity in BSc of public health were observed. Medical students of basic sciences had the lowest rate of activity at home and students of public health had the highest rate of walking among other students studied.

## DISCUSSION

Generally, the study results indicated that regardless of age, sex, and even social class, regular physical activity is low among students and mechanical lifestyle somehow involved all the people at any age and class. A study on people over 15 years in Isfahan showed that 70% of people somehow engaged in some activity, 14% engaged in severe activity, 70% walked in their leisure time and 12% rode a bicycle.<sup>[7]</sup> In the present study, approximately 30–50% of students were involved in some kind of physical activity; among whom 32.6% had severe physical activity, 48.6% had moderate physical activity, and 69.2% used to walk 10 min a day.

A study that evaluated the physical activity in university students of Italy, Canada, China, Germany, Nigeria, the United States of America, and 21 European countries showed that more than half of the students did not have adequate physical activity required for their health.<sup>[8]</sup> A study in Yazd University of Medical Sciences on 152 PhD students also showed that 32% of the students had no exercise during the week nor did they have moderate physical activity in leisure time.<sup>[9]</sup> A study in Shahid Beheshti University of Medical

Sciences on physical activity in youths showed that more than 70% of students had no exercising program in their daily activities.<sup>[10]</sup> These conclusions were in accordance with the results of the present study that more than 50% of the students were physically inactive. While another study on physical activity in Canadian pupils and students showed that 20.5% of the boys and 24.4% of the girls were inactive.<sup>[11]</sup> In a study in California on frequency of moderate and severe physical activity and its association with demographic variables on 40,261 people showed that 27.4% of people had no moderate or severe physical activity and this result did not differ much from the results of the present study.

Moreover, reviewing the demographic variables such as age, educational level, and socioeconomic status statistically showed a significant correlation with moderate and severe physical activity.<sup>[11]</sup>

In various studies, global estimates of physical inactivity showed it was 17% in adults, which also varied in different regions from 11% to 24%. In terms of physical activity it was less than 2.5 h a week, this ratio varied from 31% to 51% and its global average was 41%.<sup>[12]</sup> Therefore, given the role of regular physical activity on health, which the simplest way is walking for 20–30 min a day, it is necessary to put more effort in educating people. Medical and paramedical students who are the pioneers of health in the society need special attention. Therefore, implementation of methods such as organizing physical education programs, training and encouraging students for activity through providing educational content in health courses, emphasizing the benefits of walking from dormitory to the university classes and also walking for other movements, informing society through mass media, educating the helpful advantages of physical activity in association with

**Table 2: Distribution of types of physical activity in the study subjects and its association with age, course of study, social class, and sex**

| Type of activity | Moderate physical activity |            | P-value | Severe physical activity |            | P-value |          |
|------------------|----------------------------|------------|---------|--------------------------|------------|---------|----------|
|                  | Number                     | Percentage |         | Number                   | Percentage |         |          |
| Age (year)       | 18-20                      | 67         | 46.2    | P = 0.20                 | 91         | 62.8    | P = 0.30 |
|                  | 20-22                      | 56         | 53.9    |                          | 70         | 67.3    |          |
|                  | 22-24                      | 68         | 58.6    |                          | 86         | 74.1    |          |
|                  | 24-26                      | 7          | 36.8    |                          | 11         | 57.9    |          |
|                  | 26-35                      | 7          | 46.7    |                          | 11         | 73.3    |          |
| Course of study  | Basic Medical Sciences     | 54         | 52.9    | P = 0.02                 | 36         | 35.3    | P = 0.03 |
|                  | Clinical Medicine          | 19         | 57.6    |                          | 8          | 24.2    |          |
|                  | Public Health              | 35         | 41.7    |                          | 34         | 40.5    |          |
|                  | Nutrition                  | 28         | 46.7    |                          | 19         | 31.7    |          |
|                  | Occupational Health        | 30         | 45.5    |                          | 13         | 19.7    |          |
|                  | Environmental Health       | 8          | 40      |                          | 8          | 40      |          |
|                  | MSc in Health              | 20         | 58.8    |                          | 12         | 35.3    |          |
| Social class     | Low                        | 35         | 58.3    | P = 0.03                 | 22         | 36.7    | P = 0.06 |
|                  | Average                    | 115        | 45.6    |                          | 84         | 33.3    |          |
|                  | High                       | 44         | 50.6    |                          | 24         | 27.6    |          |
| Sex              | Female                     | 120        | 45.3    | P = 0.04                 | 63         | 23.8    | P = 0.00 |
|                  | Male                       | 74         | 55.2    |                          | 67         | 50      |          |

job, home chores, and leisure time are recommended to promote the amount of students' physical activity.

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