



Levels of Physical Activity in Medical Students: A case study of *Shariati Hospital in Isfahan*

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Abstract: Adequate physical activity (PA) is an important factor that strongly affects the human health and well being. It is also reported that adequate PA has important role in academic achievements and health of students. So, medical student like other peoples and students needs to be active. Despite the importance of PA in medical students still there is paucity of researches to evaluate this issue in this population. This study was carried out to determine physical activity in medical students of NIA university. Forth year medical student of NIA university in Shariati hospital were studied. Sixty nine students aged 24.1+/-1.4(M+/-SEM) enrolled and completed the Persian version of International Physical Activity Questionnaire, Short last 7 days format .Demographic data and data about sitting periods and different level of physical activity including mild walking moderate and severe physical activity and frequency and duration of these kinds of activities were collected. Data were analyzed with SPSS using descriptive statistics. Study subjects reported severe, moderate physical activity and mild walking in 0.8+/-0.19(M+/-SEM), 1.43+/-0.25 and 5.6+/-0.22 days respectively. Duration of severe, moderate physical activity, mild walking and sitting was 82.2+/-10.0, 49.3+/-8.6, 93+/-14.4 and 475.2+/-24.5 minutes in order. The results of our study show that medical student who participated in our study do not have adequate physical activity for health according to international guidelines for adequate physical activity for health purpose. It is strongly recommended to perform more research in this field and find out the ways that we can make medical students to be more active.

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1. Introduction

Sedentary life and lack of physical activities are the most important reasons of debilitating and chronic diseases and deaths in the world, therefore, many of the current researches in the world are concentrating on recognizing the reasons responsible for lack of physical activities and ways to increase these activities among different groups of people. Medical students as the main elements of the future of the health system in each country are not an exception. On the contrary, for many reasons, physical activity for medical students is of great importance. The period of medical education is one of the longest; moreover, it is one of the heaviest and bulkiest periods of education, both quantitative and also qualitative. Normally, medical students are occupied with studying in this field from the age of 18 to 25 years, which is the period of maximum physical activity in each human being. Different researches which have been conducted on medical students after entering university and employment in the medical field have shown that they undergo a

descent in physical activities. In a study conducted by Ball and colleagues in 2002 in the University of Indianapolis in U.S.A. on 54 medical students, it was shown that after entering university, the health habits of these students had changed significantly in such a manner that the rate of exercising and their social interaction had decreased considerably(1). These studies also showed that after entering university, medical students underwent a negative change in their lifestyles. In a research done by Perry and colleagues in 2000 in Murker Medical School in U.S. on assistants in the field of Gynecology and Obstetrics, it was shown that sleeping hours, family relationships and the rate of exercising had decreased significantly more than before (2). Moreover, studies have shown that overweight in medical students is more than normal. In 2000, Ishikawa and colleagues conducted a study in the University of Environmental Health and Occupation in Kitakiosho, Japan with the intention of examining the physical characteristics of medical students in this school. The results concluded from this study showed that overweight is more

frequent in male medical students than expected (3). Different researches have shown that engaging in proper physical activities can play a helpful role in the educational achievement of students' studies. Allis and colleagues conducted a research in 1999 on 759 students in order to examine the effects of health education on their progress in studies. The results showed that physical education pertaining to health can have a positive effect on their progress in studies (4). In addition to the importance of physical activity for the medical students' health and also the significance of proper physical activity for students' progress in studies, doing enough exercises and having an active lifestyle in medical students is of great importance.

Medical students who become physicians in the future have a significant role in promoting a healthy lifestyle in the society. The studies conducted have shown that many patients choose their physicians as the first advisors in the field of learning ways to improve physical activities. Those physicians are successful in this field that, they have experience and proper physical activity habits (5). Despite the importance of physical activity among medical students, recognition of reasons and ways to improve it among students, studies on this subject are still few.

This study was conducted with the intention of determining the level of physical activity among medical students of NIA University.

2. Methods

This research was conducted on the medical students of NIA University. Sixty nine female and male students studying in their fourth year of medicine were included.

The average age of students in this research was 24.1 ± 1.4 (M \pm -SEM). All students were required to fill out the Persian version of Short Last 7 Days International Physical Activity Questionnaire. This questionnaire includes questions about the number of days that the person has spent on severe or moderate physical activities and walking during the past 7 days and also, the approximate time spent on this activity each day. In addition, the number of days during the past 7 days of inactivity spent on sitting and also, the approximate time spent on sitting is questioned. This study was conducted at a time that there had been no unusual studying periods such as exam periods or breaks for at least one week prior to answering the questionnaire, because in these situations, the normal duration of sitting or activity differs. Moreover, from the viewpoint of the quantity of studies and clinical activities, fourth year medical students in Iran rank average. The collected data in the questionnaires were extracted and classified and then analyzed by the statistics software SPSS version

18, descriptive statistics including frequencies, means, standard errors and standard deviation, and error bar plot were used to show the results.

3. Results

This study was conducted in Shariati hospital of NIA university. All of the medical students of this university pass their educational courses in medicine after third year of their education in this hospital. The students who studied in their fourth year of medical education were studied. Sixty-nine female and male students completed the study. The students aged 24.1 ± 1.4 (M \pm -SEM). Physical activity was determined according to Short Last 7 Days International Physical Activity Questionnaire. This questionnaire evaluates the total amount of physical activity of each participant. The questions evaluate the numbers of the day that each individual have severe, moderate or mild physical activity and also the duration of different type of physical activities such as severe, moderate, mild activities and the total duration that the individual spend on sitting activities. According to the total number of the days that students participated in physical activity different level of physical activity divided in three main groups. Number of the days that each students spent on severe physical activity, moderate type or mild walking during one week. Number of severe and moderate physical activity and mild walking days were 0.8 ± 0.19 (M \pm -SEM), 1.43 ± 0.25 and 5.6 ± 0.22 days respectively. In the other hand for better estimation of total amount of physical activity the results were divided into different groups according to the duration that each student spent in Severe, moderate, mild walking activities and sitting duration in one week.

Duration of severe, moderate physical activity, mild walking and sitting period was 82.2 ± 10.0 , 49.3 ± 8.6 , 93 ± 14.4 and 475.2 ± 24.5 minutes in order (Figure 1 and 2).

4. Discussion and Conclusion

In this study, according to recommendations for physical activity by United state Center for Disease Control, frequency of severe physical activity sessions during a week by students was low (0.8 ± 0.19 (M \pm -SEM)), also it was low for moderate physical activity (1.43 ± 0.25), but they have mild walking for 5.6 ± 0.22 days in a week which is good in frequency. This means that the most physical activity performed in a week period was mild walking. Moderate physical activity was performed for only 1 or 2 days a week and most of the student studied didn't have even one day of severe physical activity. The rest had severe physical activity only for one day or less. All of this are lower than

recommended level of exercise for health. The results of the study revealed that the mean duration of the time spent on walking, moderate and severe physical activity was also low (93+/-14.4, 49.3+/-8.6 and 82.2+/-10.0 minutes) in each day. Students who had walking as their physical activity spent approximately an appropriate time performing this

activity each day but the intensity of the activity was too low. The time spent on moderate physical activity is average but there is a few numbers of days in a week in which this activity is performed. The average time students spent sitting during each day is 475.2+/-24.5 minutes which is a great amount compared with other physical activities.

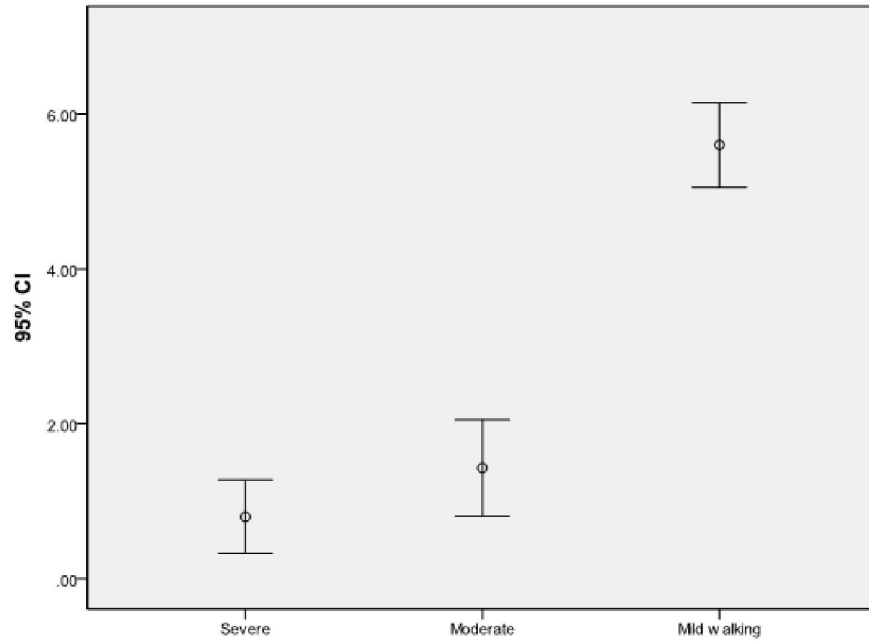


Figure 1. Severe, moderate physical activity, and mild walking days during week among medical students

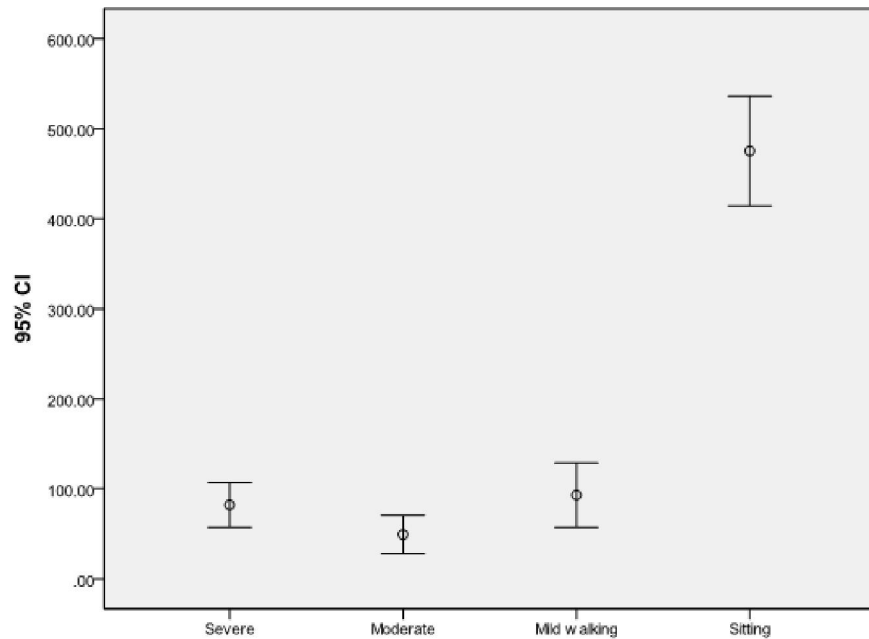


Figure 2. Duration of severe, moderate physical activity, mild walking and sitting among medical students

In one study that was performed in 2010 by Standford et al in University of South Carolina in order to determine the amount of physical activity among 1949 university attending and medical students ,residents of medical university of Baltimore and their adherence to recommended physical activity by the guideline of US department of health and human services, they concluded that residents and fellow physicians had lower amount of physical activity than attending physicians and medical students(6).

In other study that was performed by Hultz et al in 2007-2010 in University of British Colombia on 883 medical student who studied in fourth year of medicine to determine their physical activity level and their attitude toward physical activity counseling ,they found out that only 62% of medical student performed suitable amount of physical activity according to the Canadian society for exercise physiology recommendations 2011 for physical activity. The students who were more active had better attitude toward the physical activity counseling in their future medical practice(7).

In the study that was done by Gawlikowski Sroka-A et al in Pomeanian Medical University on 223 students in 2009,they found out the physical activity of medical students is poor and they use excessive smoking(8).

The study of German et al in 2008 in Palermo of Italy on 445 medical students also showed that only 58% of medical students had some kind of physical activity(9).

The study of Frank E. et al in 2008 on 2316 US medical students of 16 different medical universities showed that only 61% of medical students were active according to recommendations of United States Center for Disease Control for Physical Activity (10).

Majority of studies showed that physical activity counseling will help to enhance the healthy life style in community and will be accompany with the decrease of chronic disease in the population (11-19).The medical doctors who are more active can help more to their client(20-22).

The results of our study is similar to results of the above studies that evaluated the amount of physical activity among medical students. These results show that students in our study do not have appropriate physical activity. The results of this study concur with the results of previous studies showing poor physical activity levels in medical students and their sedentary lifestyle.

An appropriate planning with the intention of increasing physical activities and exercise habits in medical students is recommended. This program may

include; weekly walks, aerobics, group exercises, recreational tours, hiking, sports competitions and other activities to promote physical activity and exercise habits in medical students.

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