PATTERNS OF PHYSICAL ACTIVITY AMONG MEDICAL STUDENTS IN KHYBER PAKHTUNKHWA, PAKISTAN

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ABSTRACT

BACKGROUND: Physical activity is one of the leading health indicators. PA and sedentary lifestyle are considered among the main factors of health in relation to the lifestyle. Both are associated independently, with mortality and morbidity. Medical students should not only know the importance of physical activity but it is their ethical obligation to influence the patient's attitude towards physical activity and become role models for patients. The objective of this study was to evaluate the practice and patterns of physical activity among undergraduate medical students.

METHODS: This descriptive cross sectional study was conducted during the year 2016 among the medical students of Khyber Girls Medical College, Peshawar. Study group included 131 students from 3rd and 4th year, out of which 88 were day scholars and 42 boarders. In terms of age and gender it was a homogenous group i.e. aging between 20-24 and all female. The study tool was International Physical Activity Questionnaire (IPAQ).

RESULTS: Data of 131 undergraduate students was analyzed in Excel. All were undergraduate female students of 3rd year and 4th year from Khyber Girls Medical College. Out of the total, 88 students were day-scholars and 43 were boarders.20 students refused to participate. In day-scholar students, physical activity of low level was 36%, moderate was 37.5% and vigorous activity was performed by 21.5%. Whereas for boarders, physical activity of low intensity was performed by 44.2%, moderate was performed by 11.6% and vigorous by 44.2% of the students.

CONCLUSION: About 44.2% boarders and 36% day-scholars exhibited low physical activity. The trend of physical activity is slightly more in day-scholars than in boarders.

KEY WORDS: IPAQ, Physical activity, Medical students, Health.

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INTRODUCTION

Physical activity is defined as any bodily movement produced by skeletal muscles that require energy expenditure. Walking, running, dancing, swimming, yoga, and gardening are a few examples of physical activity[1]. Physical activity is defined by its duration, intensity, and frequency.

• Duration is the amount of time spent participating in a physical activity session.

• Intensity is the rate of energy expenditure;

• Frequency is the number of physical activity sessions during a specific time period (e.g. one week).

There are three levels of physical activities to classify populations which are high, moderate and low. For classification as 'high' are: a) vigorous-intensity activity on at least 3 days OR b) 7 or more days of any combination of walking, moderate-intensity or vigorous-intensity activities. The pattern of activity to be classified as 'moderate' is either of the following criteria: a) 3 or more days of vigorous-intensity activity of at least 20 minutes per day or b) 5 or more days of moderate-intensity activity and/or walking of at least 30 minutes per day or c) 5 or more days of any combination of walking, moderate-intensity or vigorous intensity activities. The lowest level of physical activity include those individuals who do not meet criteria for Categories of high or moderate and are considered to have a 'low' physical activity level[2]. The physical activity (PA) and sedentary lifestyle are considered among the primary factors of health in relation to lifestyle. They are seen as two different entities in the measure where both are associated independently to health status, and particularly the total mortality, at the risk of cardiovascular diseases or cancer 3. According to the Department of Health and Human Services' 2008 Physical Activity Guidelines for Americans, physical activities generally refer to movement that enhances health. Physical activity is good for many parts of your body. The more active you are, the more you will benefit. Physical activity is a cornerstone in the prevention and clinical management of chronic diseases.Frequent and regular physical exercise boosts the immune system and helps prevent the "diseases of affluence" such as heart disease, cardiovascular disease, Type 2 diabetes, and obesity. It may also help prevent stress and depression, help to promote or maintain positive self-esteem and improve mental health generally. Activities that involve the small skeletal muscles (e.g. playing board games, drawing and writing) are important, but they do not provide the health benefits of activities that involve the large skeletal muscles and require substantial energy expenditure. . Low levels of activity, resulting in fewer kilocalories used than consumed, contribute to the high prevalence of

obesity in the United States. Physical activities prevent obesity and osteoporosis[4,6]. Risk of cardiovascular complications increases transiently for persons who are habitually sedentary. In 2009-10, 42% of patients who had a heart attack (MI), bypass surgery (CABG), or an angioplasty (PCI) took part in physical activity programs crossways England, Wales and Northern Ireland, with the aim of reducing cardiac mortality, promoting self-management and improving quality of life[7]. According to WHO one of the Reasons of declining physical activity levels is the increasing use of "passive" modes of transport. Also increased urbanization has resulted in numerous environmental factors which can put off participation in physical activity such as violence, traffic, low air quality, pollution, and lack of parks, leisure facilities[7]. Many women suffer from disease processes that are associated with inadequate participation in physical activity:

• Cardiovascular diseases account for one-third of deaths among women around the world and half of all deaths in women over 50 years old in developing countries.

• Diabetes affects more than 70 million women in the world and its prevalence is projected to double by 2025.

• Osteoporosis is a disease in which bones become fragile and more likely to break and is most prevalent in post-menopausal women[8].

Adolescent girls report more barriers to participation than do boys including time, money, resources and a concern for safety. Lack of active, older role models has also been cited as a contributing factor to lower participation rates among girls[9].

Physical Activity has also been associated with improved psychological health by reducing levels of stress, anxiety and depression. This is particularly important for women who demonstrate an incidence of depression8. The American heart association together with WHO and the American College of Sport Medicine (ACSM) generally recommends 30 minutes of moderate-intensity physical activity 5 days per week or 20 minutes of vigorous-intensity physical activity 3 days per week for all adults. Amongst the college population, it is assumed that the medical students have a greater knowledge about healthy lifestyle and dietary habits when compared to other students. One of the most important factors for predicting the physical condition of medical students is their own attitudes toward health promotion, illness prevention, and exercise[10]. However, there is no evidence to indicate that this knowledge translates into practice in terms of maintaining physical activity. With this background in mind, the current study was designed to assess the attitude and practices of medical students regarding physical activity.

Many studies took in consideration the worldwide decline of physical activities and the increase of obesity and other disease risks. A descriptive cross-sectional study was conducted during the years 2012 and 2013, among medical students of Casablanca. The aim of this study was to describe physical activity and sedentary lifestyle in medical students in Casablanca. Results showed about 37% of students had a high level of physical activity, 46% had a moderate level, and only 17% had a low level, meaning 83% of students practiced a favorable health activity (corresponding to high or moderate level). The prevalence of sedentary lifestyle was 17%. The students spent an average of 6 hours per day in a seated position, including using computers and talking[3].

Physical Activity survey was also conducted in Students of the Medical University of Silesia in Poland and results showed that Physical therapist students demonstrated the highest level of physical activity, with 46% demonstrating a high level of physical activity, 54% a moderate level of physical activity, and none a low level of physical activity. The largest group of students with a low level of physical activity comprised students from the school of medicine (26%)6. Polish society is characterized with low physical activity. Medical university students, as future doctors, should not only understand the importance of physical activity, but also do all they can to actively propagate it.

Medical students (Men: Women = 116:143) in Bangalore, India in the age group of 18-22 yrs were interviewed using the official English long version of the International Physical Activity Questionnaire (IPAQ). In which 41.3 % showed high levels of physical activity, 43.2% and 15.4 % of students showed moderate level and low level of physical activity respectively. 84.6 %(n=219) were engaged in work related activity and 80.7% (n= 209) showed transport related activity. Domestic and gardening physical activity represented 63.7 % (n=165) of individuals' total activity and 67.2% of students showed leisure time activity. The average time spent in sitting was 7.06 hrs/day. There was significant gender difference observed with women having low physical activity[5].

In one of the European report is mentioned that participation in leisure sport and physical activity has remained relatively low in Romania; 8% of Romania's population was reported as being obese in 2008/2009 compared to the UK which was at the other extreme with 23.9%[11].

Another research was conducted to assess the level of physical activity among students of the final study year of medical and Dentistry Faculties of Wroclaw medical university. The study was conducted in summer term of 2011/2012 academic year. The study tool was international Questioner of Physical activity (iPaQ) – long form. Results basing on Mets values were distinguished on three levels of total physical activity and showed that 20% have high physical activity, around 35% have moderate physical activity and around 45% have low physical activity[12].

A research was conducted in B.J.Medical College, Ahmadabad in 2015, according to which the practice of physical activity was more among boys as compared to girls (68% v/s 32%). Lack of time (22%), laziness (57 %), and exhaustion from academic activities (7%) were identified as important hindering factors among medical students who did not exercise[13].

In Pakistan the physical activity level was evaluated in medical students

of Ziauddin University in Karachi. In which Medical students were found with satisfactory results of physical activity level. But the majority of students did not meet the recommended criteria of physical activity. Physical therapy students achieved the highest level of physical activity, with 33% performing high level of physical activity compared to medicine (18%), pharmacy (12%), dentistry (28%) and nursing (28%)[7].

Medical students were studied because of the presumption that they were knowledgeable about exercise and would have future influence on their patients. These health professionals play an important role in educating people about the hazards of physical inactivity, providing advice and motivating them for physical exercises. Thus their views and attitude are of great importance to be determined before implementing any physical activity measures in general population. Unfortunately there have been grossly insufficient efforts to promote physical activity in Pakistan and especially in our province Khyber Pakhtunkhwa (Peshawar). Now determining the levels of physical activity among students of Khyber Girls Medical College Peshawar, efforts should be taken to emphasize the benefits of physical activity to the students so that their activity is maintained in future and it demands for facilities and provision of physical education classes in the curriculum.

MATERIAL & METHODS

We conducted a descriptive cross sectional study, during the year 2016 among the medical students of Khyber Girls Medical College, Peshawar, Pakistan. Data of the practice of physical activity of 131 undergraduate students was analyzed in excel. All students were aware of the benefits of physical activity. All were undergraduate female students of 3rd year and 4th year from South East Asian background. The 3rd year students ranging from 20 to 22 years of age and 4th year students ranging from 22 to 24 years of age. Out of the total 151, 20 students refused to participate.

In order to collect the data, we used the short version of IPAQ (International Physical Activity Questionnaire).

It is a valid instrument of measuring physical activity which allows the international comparisons, and it studies physical activity in its totality (at work, at home, in the context of transports and hobbies). In its short version, it presents the specificity of measuring physical activity relying on intensity rather than type. The data analysis include total 151 undergraduate female medical students of age group 20-24 years, 75 students from 3rd year and 76 students from 4th year of Khyber Girls Medical College. Data analyses were done using Excel. Results were expressed in frequency and percentages.

RESULTS

The following research encompasses the levels of physical activity of the 3rd and 4th year students at Khyber Girls Medical College, Peshawar. There were approximately seventy five students in each class. Exactly one hundred and fifty-one edited IPAQ questionnaires were distributed among the students, with seventy five forms to the 3rd year class and seventy-six forms to the 4th year class. The questionnaires evaluate the students' levels of activity based on the IPAQ scoring system.

The 3rd year class consisted fully of female students from a South East Asian background, all between the ages of twenty to twenty-two years old. There were fifty-two day scholars and sixteen boarders in the class that chose to participate in the survey. Seven students refused to participate. All of the participating students were aware of the benefits of physical activity.

The 4th year class was also made up entirely of female students of a South East Asian background, between the ages of twenty-one to twenty-four. There were thirty-six day scholars and twenty-seven boarders that chose to participate in the survey. Thirteen students refused to participate. All of the participating students were aware of the benefits of physical activity.

According to IPAQ scoring protocols, students were divided into 3 different categories that include low intensity of physical activity, moderate intensity and vigorous intensity of physical activity.

The achieved data was then split into practice of physical activity among day-scholars and practice of physical activity among boarders. There were a total of 20 students that refused to participate in the study.

In day-scholar students, percentage of low level physical activity was 36%, moderate was 37.5% and vigorous activity was 21.5%. Where as for boarders, physical activity of low intensity was performed by 44.2%, moderate intensity of physical activity performed by 11.6% and vigorous by 44.2% of the students.

FIG 1: DISTRIBUTION OF STUDY PARTICIPANTS (n=131)

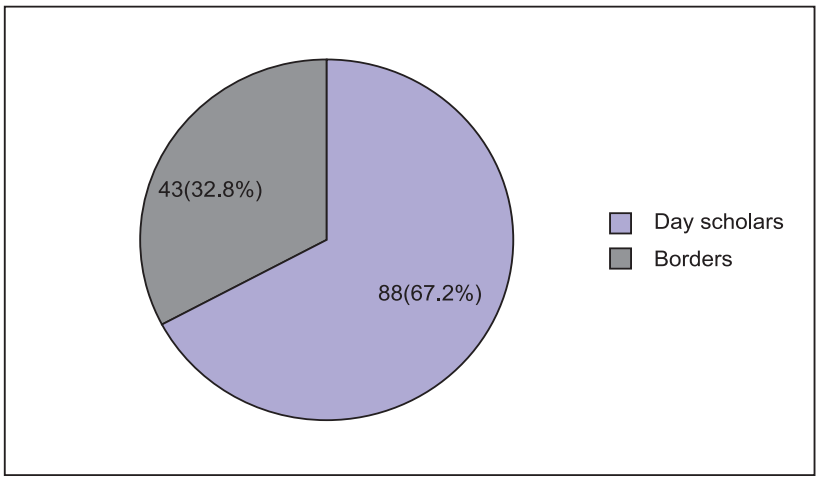
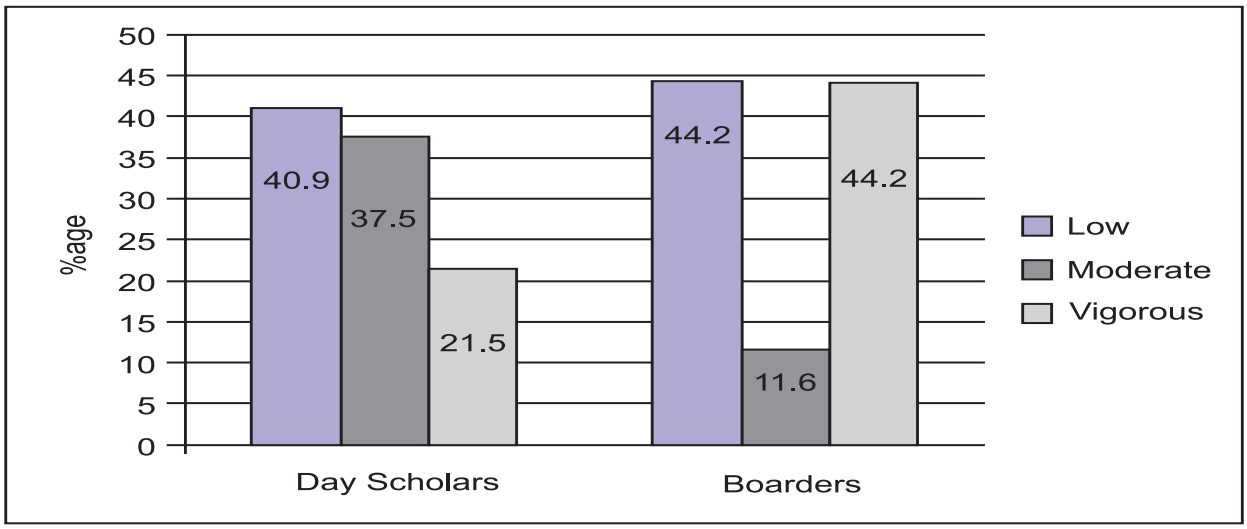


FIG 2: LEVELS OF PHYSICAL ACTIVITY (n=131)



DISCUSSION

A total of 131 students participated in the study, all were female. The age of students was between 20-24 years old. According to the results of research, in day-scholar students the physical activity of low levels was 40.9%, moderate 37.5% , and vigorous was 37.5%. Whereas for boarding students, the physical activity of low intensity was 44.2%, moderate intensity 11.6%, vigorous intensity 44.2%. Hence meaning that, in day-scholars 59% (corresponding to moderate and vigorous levels) were involved in favorable healthy activities while 40.9 fall in low level category of physical activity. In boarders 55.8% were involved in healthy favorable activities while 44.2% does not meet the recommended levels of the physical activity and high percentage of spending most of the hours in sitting (studying, using laptops, cell phones ,being lazy). In this study the physical activity of day-scholars and boarders of Khyber Girls Medical College was compared and it came in to notice that more day scholars were involved in healthy physical activities than boarders. Although all the students were aware of the advantages of physical activity, high percentage of low physical activity was seen both in day scholars and boarders (40.9 in day-scholars and 44.2 in boarders)

Many studies took in consideration the worldwide decline of physical activity and diseases associated with it. A review of literature indicated that research by Nada Otmani et al was conducted during the years 2012 and 2013 among medical students of Casablanca , Morocco. The results showed about 37% students having high physical activity , 46% moderate and 17 % had low levels of physical activity meaning 83% practiced favorable healthy physical activity[3]. In contrast, our study showed 59% favorable healthy activity in day scholars and 55% in boarders where as low physical activity levels were 40.9 and 44.2 in day-scholars and boarders respectively. This showed overall decline of physical activity in students of Khyber Girls Medical College.

Another study conducted by Magdalena Da¸ browska-Galas et all in 2012 in Students of the Medical University of Silesia in Poland and results showed that Physical therapist students demonstrated the highest level of physical activity, with 46% demonstrating a high level of physical activity, 54% a moderate level of physical activity, and none a low level of physical activity. The largest group of students with a low level of physical activity comprised students from the school of medicine (26%)[6]. Our study being conducted in the medical school also showed low levels of physical activity among the students. Medical students (Men: Women = 116:143) in Bangalore, India in the age group of 18-22 yrs were interviewed using the International Physical Activity Questionnaire (IPAQ). In which 41.3 % showed high levels of physical activity, 43.2% and 15.4 % of students showed moderate level and low level of physical activity respectively. 84.6 % were engaged in work related activity[5]. In contrast to this research, our research showed a relatively low level of physical activity which isnot satisfactory according to the international standards of healthy activity. According to our research, the amount of vigorous, moderate and low level physical activity among the day scholars was 21.5%, 37.5% and 40.9% respectively. While the amount of vigorous, moderate and low level of physical activity among the boarders was 44.2%, 11.6% and 44.2% respectively.

Although the previous studies performed among universities were conducted in different countries during different periods of time. The prevalence estimation of physical activity levels were mostly close to ours.

Another research was conducted to assess the level of physical activity among students of the final study year of medical and Dentistry Faculties of Wroclaw medical university and showed that 20% have high physical activity, around 35% have moderate physical activity and around 45% have low physical activity[12]. In

view of this, our research involving the medical students of Khyber Girls Medical College showed a similar data in which the amount of physical activity performed was not up to the international requirements. As seen in our results, the percentage of vigorous and moderate physical activity was kept low among the students. Whereas the percentage of low level of physical activity was high that is; 21.5% in day scholars and 44.2% in boarders.

This low level of physical activity depicts that although the students of Khyber Girls Medical College were well aware of the importance of physical activity and their international standards, they failed to perform the physical activities due to various reasons.

From this research it confers that this low potential graph of physical activity in our research is due to the fact that it involves only female students who face a lot of limitations in our society that is; social restrictions, lack of sufficient amount of gyms for women, laziness, increased household chores, academic burden and many more. The limitations of the study were the number of respondents being relatively small. The main study limitations included its cross-sectional nature and the possibility of self-report biases. The predictors of physical activity are widely determined by social, economic, and cultural factors and the physical environments which influence access, dispensability, and utilization. This study was conducted during the academic year; and a negative influence of courses and stages on the physical activity level were possible. Also, only one college was included. Thereby, the results cannot be generalized to all medical students.

CONCLUSION

Physical activity or regular sport is a major determinant of the health of individuals. Even moderate intensity decreases mortality and ameliorates life quality. Our survey analyze physical activity of the medical students in Khyber Girls Medical College; using the IPAQ, allowed on one hand, to estimate the proportion of students practicing a favorable activity to health (59% in day scholars and 55.2% in boarders) and draw their profile. On the other hand, we have proved that the approximately average number of hours spent in a seated position was high (7 h/day) in (44.2% boarders and 36% day scholars). In our study the group of medical students, despite being aware of the benefits of physical activity, did not meet the recommended level of physical activity and did not apply their knowledge in everyday life. All health care professionals should use their substantial knowledge of the benefits of physical activity into practice in order to gain credibility in their patients' eyes. Professional medical advice regarding physical activity may encourage patients to adopt and maintain new, healthy habits. Therefore, if students of medical schools improve their own habits, it may positively affect their attitude toward medical advice regarding physical activity. Regular physical activity contributes to good health, and healthy habits will help promote physical activity in future patients. The low leisure time activity observed in the present study may demand recommendation and facilities for provision of physical education classes in the curriculum.

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