ORIGINAL ARTICLE

EVALUATION OF PHYSICAL ACTIVITY LEVELS AMONG UNDERGRADUATE PHYSICAL THERAPY STUDENTS

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ABSTRACT

Objective: To evaluate level of physical activity among undergraduate physical therapy students and to compare differences in physical activity level between males and females.

Material and Methods: A cross sectional survey study was carried out to evaluate the level of physical activity among undergraduate physical therapy students in Pakistan. 311 students responded to the study questionnaire. The data was gathered by using demographic Performa and International physical activity "IPAQ" questionnaire. An independent-samples t-test was conducted to compare scores for male and female participants.

Results: The mean age of the participants were 21.67 years ± 1.7 SD, Overall 36.6%, 45.9% and 19% students had high, moderate and low levels of physical activity. Male showed higher level of vigorous physical activity versus female participants (45.9% vs. 33.3%) while female participants showed higher level of moderate physical activity versus male participants (49.4% vs. 29.7%). High means scores of walking (1872.8±5458.5), moderate (1608.5±2658.95) and total physical activity (4299.7±6614.74) were observed among male versus. Female participants.

Conclusion: Majority of the undergraduate physical therapy students had moderate to vigorous level of physical activity. Male participants present higher level of vigorous physical activity while female participants showed higher level of moderate physical activity.

Keywords: Physical, activity, inactivity, Undergraduate, Students.

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INTRODUCTION

Physical activity is carried out by skeletal muscles which results in energy expenditure above resting level[1]. Physical activity can vary in intensity, duration, frequency and muscle group involved in activity e.g. aerobic exercises enhance oxygen transport, improve endocrine function thereby improving blood circulation and helps in relieving depression and stress, improve high density lipoprotein thereby improving cholesterol ratio. Resistive exercises improve strength, endurance, power, bone density, motor performance, self-esteem and body image increasing overall energy level of a body. Physical activity also helps in to enhance our cognitive skills by increasing concentration capability and reduces anxiety, stress and depression[2]. World Health Organization (WHO) defines heath as ''Health is a complete state of physical, mental and social wellbeing and not merely the absence of disease or infirmity''[3]. Many research evidences indicates that regular physical activity is a key determinant of health[4,5]. Physical activity has positive effect on different systems

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of body e-g musculoskeletal system, cardiovascular system, nervous system and immune system. Physical activity during leisure time plays an important role in preventing the chronic diseases e.g. diabetes, obesity, hypertension, coronary heart diseases, osteoporosis, colon cancer, breast cancer and psychological disorders6. Physical activity is widely accepted as an effective preventive measure for a variety of health risk factors. Different studies have proved the benefits of physical activity in reducing the rate of diseases and number of deaths[7]. Physical inactivity among university students is prevalent[8]. Overall Physical inactivity is one of the most important worldwide problems of the 21st century[9]. For students it is very important to stay active and healthy to carry out their academic activities well. Brain and body mutually works to enhance ones academic performance. So the present study was conducted among undergraduate's physical therapy students to evaluate the level of physical activity and to compare differences in physical activity level between males and females. In future this can provide additional evidence to literature about the doctor of physical therapy students' level of physical activity. The findings can also provide new insight to determine how to maintain level of physical activity and to find which factors are associated with the low level of physical activity.

MATERIAL AND METHODS

A cross sectional study was carried out on doctor of physical therapy students of Isra institute of rehabilitation sciences, Islamabad campus, Islamabad Federal College (Sarhad University) and Margalla institute of health sciences, Pakistan. The duration of study was nine months, from April 2017 to December 2017. This study was performed after getting approval from Institutional ethical committee. The sample size was 377 calculated using Rao soft. Out of 377 students, 311 students of doctor of physical therapy responded to the study questionnaires. The parameter used for the evaluation of physical activity in this study is International physical activity questionnaire (IPAQ). International physical activity questionnaire (IPAQ) assesses the level of physical activity through duration and frequency of walking, moderate and vigorous activities reported by the individual. Inclusion criteria of the study were: undergraduate physical therapy students, age of 18-30 years,

both male and female gender. Non probability convenience sampling technique was used to collect data. Data collection was done after taking permission from the head of the institutions and then written consent form was signed from those participated in study. The data was gathered by distributing demographic Proforma and international physical activity "IPAQ" questionnaire among students. Physical activity levels were scored following "IPAQ" scoring guidelines. A score in "MET-minute/week" is obtained by multiplying minute, day and MET (multiples of resting oxygen consumption) values. Physical activity levels are classified as low level of physical activity (<600 MET-minute/week), moderate level of physical activity (600-3000 MET-minute/week) and high level of physical activity (>3000 MET-minute/week). All data and results were analyzed using the SPSS software version 22. Data results were analyzed using the descriptive statistic, frequencies, percentages, mean and p-values. Independent-samples t-test was conducted to compare scores for male and female participants.

RESULTS

76.2% (237) were females and 23.8% (74) were males. The mean age of the male students was 22.02±1.67 years and female students were 21.09±91.90 Years. Majority of the participants were unmarried. Based on the body mass index (BMI) data, 95(65.3%) were normal, 20 (14 %) students were underweight, 22(15.4 %) were overweight and 8(5.6%) students were Obese.Based on general health data, 22.8% students were in very good health state, 53.8% were in good health, 16.4% were in fair health, 1.3% in poor health and 0.6% students were in very poor health condition. 0.3% was diabetics and none of the participants had heart problem. Figure 1 shows Prevalence of study respondents based on physical activity level. Based on level of physical activity it is determined that maximum no (49.4%)of female students were attending moderate level physical activity while 45.9% male participants were attending high level physical activity. Results are summarized in table 1; Percentage, mean, standard deviation and p-value of male, female and overall participants regarding walking, moderate vigorous and total physical activity in term of MET-mins/week based on International physical activity questionnaire are presented in table 2.Results revealed no statistical

significant difference regarding walking, moderate and vigorous physical activity among male and female participants.(p=0.05) Percentage, meanand standard deviation of male, female and overall participants in different chores physical activity in term of MET-mins/week based on International physical activity questionnaire are presented in table 3.MET-mins/week mean scores regarding job-related physical activity, house work, house maintenance and caring family and time spent in sitting during weekend were found to be higher among female vs. male participants while MET-mints/week mean scores regarding transportation physical activity, recreation, sport and leisure-time physical activity and time spent in sitting during weekdays were found to be higher among male vs. female students.

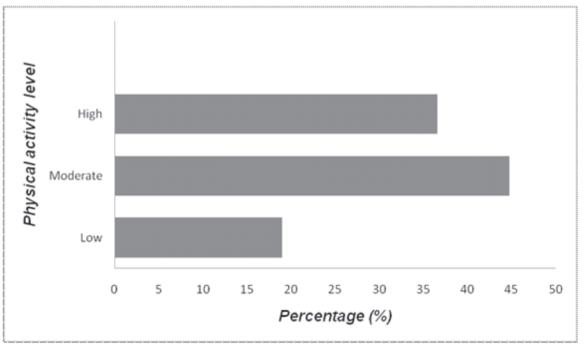

Fig 1: Percentages of overall respondents based on the physical activity levels (N=311).

Table 1: N and % of Physical activity level among male and female participants (N=311).

Physical activity level		N(%)	Frequency	%
Low	Male	74(23.8)	18	24.3
	Female	237(76.2)	41	17.3
Moderate	Male	74(23.8)	22	29.7
	Female	237(76.2)	117	49.4
High	Male	74(23.8)	34	45.9
	Female	237(76.2)	79	33.3

DISCUSSION

The present study was conducted to evaluate level of physical activity among undergraduate physical therapy students and to compare differences in physical activity level between males and females. The current study findings showed that overall 36.6%, 45.9% and 19% students had high, moderate and low levels of physical activity. The present study findings were consistent with the study conducted among medical students (n=256) in Bangalore. They found that 41.3 % had high levels of physical activity, 43.2% and 15.4 % of students had moderate level and low level of physical activity respectively[10]. The present study findings were also consistent with the study conducted among medical students (n=392) in morocco with an average age of 20.72± 2.42 years, which reported the prevalence of high, moderate and low level physical activity to be 37%, 46% and 17% respectively[8]. But the current study findings regarding moderate to high level physical activity was low in comparison with the study conducted among students of the Medical University of Silesia in Poland (n=300). It is concluded that 46% and 54% physical therapy students had a high and moderate level of physical activity, and none of the students had a low level of physical activity[11]. The present study findings was better than the findings reported by a study conducted among Colombian university students (n=900) with an average of 20±3 years. They found that 22% student had a high level and 54.8% had a low level of physical activity[12].

The current study found that percentages of high level of physical activity were high among male versus female participants while moderate level of physical activity was high among female students versus male students. The present study findings were supported by previous studies i.e. Padmapriyaet al[10], Bergieret al[13], and Appalanaidu et al[14]. The present study findings regarding different categories of physical activity revealed that means scores (Met/mints) of walking, moderate and total physical activity was higher among male versus female participants. Similar findings were observed in previous researches conducted by Fagaraset al[15] among Alexand ruloan Cuza university students and Bergieret al[16] at National University in Lutsk, Ukraine.

CONCLUSION

Majority of the undergraduate physical therapy students had moderate to vigorous level of physical activity. Male participants present higher level of vigorous physical activity while female participants showed higher level of moderate physical activity.

RECOMMENDATIONS

On the basis of results there is a need of en-

Table 2: N (%), Mean, standard deviation and p-value of participants in different categories of physical activity based on International physical activity questionnaire (N=311).

			N(%)	Mean	S.D	P value
walking	MET-mins/week	Male	74(23.8)	1872.8	5458.52	0.19
		Female	237(76.2)	1311	2110.44	
		Overall	311	1444.7	3234.89	
Moderate physical activity	MET-mins/week	Male	74(23.8)	1608.5	2658.95	0.62
		Female	237(76.2)	1399.9	3396.99	
		Overall	311	1449.5	3233.85	
Vigorous physical activity	MET-mins/week	Male	74(23.8)	818.37	1636.02	0.99
		Female	237(76.2)	819.7	3983.02	
		Overall	311	819.38	3564.79	
Total Physical activity	MET-mins/week	Male	74(23.8)	4299.7	6614.74	0.39
		Female	237(76.2)	3530.6	6911.2	
		Overall	311	3713.6	6839.15	

Table 3: N (%), Mean, standard deviation and p-value of participants based on International physical activity questionnaire (N=311).

			N(%)	Mean	S.D
Job-related physical activity	MET-mins/week	Male	74(23.8)	73.4459	220.9273
		Female	237(76.2)	147.4051	543.7506
		Overall	311	129.8071	487.4171
Transportation physical activity	MET-mins/week	Male	74(23.8)	719.3243	766.5236
		Female	237(76.2)	709.5063	602.637
		Overall	311	711.8424	644.0939
Housework,house maintenance and caring family	MET-mins/week	Male	74(23.8)	302.0946	901.0234
		Female	237(76.2)	331.4768	650.1521
		Overall	311	324.4855	716.3301
Recreation,sport&leisure-time physical activity	MET-mins/week	Male	74(23.8)	297.6351	530.1145
		Female	237(76.2)	259.9578	1219.335
		Overall	311	268.9228	1094.671
Time spent in sitting during weekdays	MET-mins/week	Male	74(23.8)	3077.027	2455.441
		Female	237(76.2)	2836.498	1035.394
		Overall	311	2893.73	1498.812
Time spent in sitting during weekend	MET-mins/week	Male	74(23.8)	1177.297	535.4739
		Female	237(76.2)	1277.928	646.8972
		Overall	311	1253.984	622.8521

couragement in future for the maintenance of physical activity especially in female students and for the identification of factors associated with low level of physical activity among students. Furthermore, we recommend that it is appropriate to conduct future researches to get more significant, clearer more generalized results with larger representation about public and private university students level of physical activity.

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REFERENCES

1. Westerterp KR. Physical activity and physical activity induced energy expenditure in humans: measurement, determinants, and effects. Frontiers in physiology. 2013;26(4):90-93
2. Warburton DE, Nicol CW, Bredin SS. Health benefits of physical activity: the evidence. Canadian medical association journal. 2006;174(6):801-9.
3. Callahan D.The WHO definition of'health'.Hastings Center Studies. 1973;1:77-87.
4. Hisam A, Rahman MU, Khan R, Ilyas S, Jabbar A, Kazmi SA, Mushtaq U. Association of Physical Activity with Co-morbid Conditions in Geriatric Population. International Journal of Public Health. 2016;5(4):444-9.
5. Hills AP, Street SJ, Byrne NM. Physical activity and health:"what is old is new again". In Advances in food and nutrition research 2015 Jan 1 (Vol. 75, pp. 77-95). Academic Press
6. Martinez-Gonzalez MA, Varo JJ, Santos JL, Irala JD, Gibney MJ, Kearney J, Martinez JA. Prevalence of physical activity during leisure time in the European Union.2001;33(7):1142-1146.
7. Tremblay MS, LeBlanc AG, Kho ME, Saunders TJ, Larouche R, Colley RC, Goldfield G, Gorber SC. Systematic review of sedentary behaviour and health indicators in school-aged children and youth. International journal of behavioral nutrition and physical activity. 2011;8(1):98.
8. Otmani N, Serhier Z, Housbane S, Othman MB. Physical activity among medical students in Casablanca, Morocco.Imperial Journal Interdisciplinary Research. 2016;2(2):566-76.
9. Blair SN. Physical inactivity: the biggest public health problem of the 21st century. British journal of sports medicine. 2009;43(1):1-2.
10. Padmapriya K, Krishna P, Rasu T. Prevalence and patterns of physical activity among medical students in Bangalore, India. Electronic physician. 2013;5(1):606.
11. Dabrowska-Galas M, Plinta R, Dabrowska J, Skrzypulec-Plinta V. Physical activity in students of the Medical University of Silesia in Poland. Physical therapy. 2013;93(3):384-92.
12. García FP, Herazo YB, Tuesca RM. Levels of physical activity among Colombian university students. Revistamedica de Chile. 2015;143(11):1411-18.
13. Bergier B, Bergier J, Paprzycki P. Level and determinants of physical activity among school adolescents in Poland. Annals of agricultural and environmental medicine. 2014;21(1).
14. Bhuiyan M, Sheng JW, Ghazali FH, al Mughasbi FG, Arnous MK, Maziz MN, Appalanaidu VA, al-Jashamy K, Kadir SY. Health-Promoting Lifestyle Habits among Preclinical Medical Students.Pakistan journal of medical and health sciences. 2017;11(2):490-5.
15. Fagaras SP, Radu LE, Vanvu G. The level of physical activity of university students. Procedia-social and behavioral sciences. 2015;197:1454-7.
16. Bergier B, Tsos A, Bergier J. Factors determining physical activity of Ukrainian students.Annals of agricultural and environmental medicine. 2014;21(3).

CONFLICT OF INTEREST: Authors declare no conflict of interest

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

Ahmed A:	Acquisition of data ,Analysis and interpretation of data.
Wali S:	Study Conception and design, Acquisition of data, Analysis and interpretation of data.
Ali B:	Literature Review of the topic writing ,Conclusion and recommendation at the end of the Study.
Ahmed A:	Manuscript Preparation.
Razzaq M:	Conception of the idea.
Hayat S:	Analysis and interpretation of data.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.