International Journal of Yoga, Physiotherapy and Physical Education
ISSN: 2456-5067; Impact Factor: RJIF 5.24
Received: 02-11-2020; Accepted: 18-11-2020; Published: 09-12-2020
www.sportsjournal.in
Volume 5; Issue 6; 2020; Page No. 35-37

Prevalence of physical inactivity in students of south Gujarat medical education and research centre

Vaibhavi D Patel[1*], Heena R Kalathiya[1], Kaushik Kumar K Patel[2]
[1] Internee, SPB Physiotherapy College, Veer Narmad South Gujarat University, Surat, Gujarat, India
[2] Assistant Professor, SPB Physiotherapy College, Veer Narmad South Gujarat University, Surat, Gujarat, India

Abstract
Physical inactivity has been determined as the second most important modifiable risk factor for poor health after tobacco smoking. Many studies paid attention to the worldwide decline in physical activity (PA) and increase the sedentary and obesity. Studies of university students in other countries indicated that the majority of students were physically inactive.
Methods: A cross sectional observational study was conducted among students of south Gujarat Medical Education and Research Centre. 250 students aged between 18 to 25 years were selected. Self-administrated International Physical Activity Questionnaire (IPAQ) were used to measure physical activity. Questionnaires were interpreted as: 1) low physical activity; 2) moderate activity; 3) high physical activity in last seven days.
Results: Descriptive statistical analyses were performed. The findings revealed that the prevalence of physical inactivity among the respondents was 28.8%.
Conclusion: Physical inactivity was high in students of South Gujarat Medical Education and Research Centre.

Keywords: physical inactivity, physical activity, IPAQ

Introduction

Physical activity plays a key role in reducing the physical stress placed on body by various factors i.e. tiredness, depression, feeling of being sick, and lethargy [1]. Physical inactivity refers to insufficient physical activity or sedentary behaviour. Insufficient physical activity is also defined as not spending at least one hour per day in physical activity of at least moderate intensity or at least three sessions per week of moderate-to-vigorous activities that last 20 min or more [2]. The benefits of physical activity are difficult to be ignored. Everyone gets benefits from physical activity and exercise regardless of age and gender [3]. Regular physical activity is associated with a number of health benefits, including: a reduced risk of premature mortality (mainly because of cardiovascular diseases), obesity, diabetes as well as some kinds of cancer (e.g., breast cancer, colorectal cancer and depression [4]. Despite the well-known benefits of physical activity, there is a worldwide trend towards lesser and lesser total daily physical activity. Nowadays, it is estimated that globally, approximately, one third of adult population does not achieve the recommended levels of physical activity [5].

Students demonstrate several unhealthy lifestyle behaviour, some of which lead to inappropriate nutrition that in later life becomes manifest by developing the so-called 'diseases of civilization. The well-known benefits of physical activity, there is a worldwide trend towards lesser and lesser total daily physical activity. Nowadays, it is estimated that globally, approximately, one third of adult population do not achieve the recommended levels of physical activity [6]. In Europe, the studies reveal that more than one third of adults are insufficiently active [7]. Recent data from the European Union countries (EU) indicate that six in every 10 people above 15 years of age never or seldom exercise or play a sport, and more than one half of them never or seldom Engage in any other kinds of physical activity, such as: cycling, dancing or gardening [8]. At the same time, a high proportion of adults in Europe spend more than four hours a day sitting, which could be a contributing factor to a sedentary lifestyle [9]. The level of physical activity is also not satisfactory among Polish population [10].

In 2011 less than one half of adult working population had PA lasting at least 30 min on most days of a week and less than one third of the studying population commuted actively [11]. As a consequence, physical inactivity has become a leading risk factor for ill health. Physical inactivity is estimated as the fourth leading risk factor for global mortality, which is responsible for about 3.2 million deaths yearly [12].

The WHO has identified physical inactivity as the fourth leading risk factor for global mortality, resulting in an estimated 3.2 million deaths each year [13]. Studies of university students in other countries indicated that the majority of students were physically inactive [14]. University students are encouraged to do sports for overall well-being, relaxation, and because it improves mental and physical health both during their education and afterward [15]. Physical activity plays a critical role in human health; therefore, the knowledge, attitudes and behaviour of students in health-related departments are very important. This is because upon graduation, these students will work in the health sector and raise awareness in the community not only by providing information but also by being good role models. Therefore, a need arose concerning the determination of the physical activity status of students during their university education. The purpose of this report was to assess prevalence of physical inactivity among students of South Gujarat Medical Education and Research

Centre.

Methodology

After Ethical approval from Institutional ethical committee a cross sectional observational study was conducted in a sample of 250 physiotherapy students in the age group of 18-24 years. All participants had given their written consent for participating in the study before they were interviewed. For estimating the level of physical activity, the official long form English version of IPAQ was used. The questionnaire consists of 27 questions that cover 4 domains of physical activity (work, transport, domestic and garden, and leisure-time) and time spent sitting. The items in IPAQ are structured to provide separate domain-specific scores for walking, moderate intensity, and vigorous-intensity activity. All questions refer to the previous 7 days. The results were presented as the estimation of energy expenditure in metabolic equivalent-minutes per week (MET hours/week). According to IPAQ scoring protocol total physical activity score was calculated. Based on standard scoring criteria the study sample was categorized into three levels of physical activity: "high" "moderate" and "low" [physically inactive].

Analysis based on below formula

To calculate MET minutes a Week multiply the MET value given (remember walking = 3.3, moderate activity = 4, vigorous activity = 8) by the minutes the activity was carried out and again by the number of days that activity was undertaken. For example if someone reports walking for 30 minutes 5 days a week then the total MET minutes for that activity are 3.3 X 30 X 5=495 Met minutes a week. You can add the MET minutes achieved in each category (walking, moderate activity and vigorous activity) to get total MET minutes of physical activity a week.

Plan for data analysis

There are three levels of physical activity proposed to classify populations:

- Low
- Moderate
- High

Data collected with the IPAQ form can be reported as a continuous measure and reported as median MET-minutes. Median values and interquartile ranges can be computed for walking (W), moderate-intensity activities (M), and vigorous-intensity activities (V) within each domain using the formulas below. Total scores may also be calculated for walking (W), moderate-intensity activities (M), and vigorous-intensity activities (V); for each domain (work, transport, domestic and garden, and leisure) and for an overall grand total.

Total Physical Activity Scores

An overall total physical activity MET-minutes/week score can be computed as: Total physical activity MET-minutes/week = sum of Total (Walking + Moderate + Vigorous) MET minutes/week scores. This is equivalent to computing: Total physical activity MET-minutes/week = sum of Total Work + Total Transport + Total Domestic and Garden + Total Leisure-Time MET-minutes/week scores.

Category 1 Low: This is the lowest level of physical activity. Those individuals who not meet criteria for Categories 2 or 3 are considered 'low'.

Category 2 Moderate: 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 achieving a minimum Total physical activity of at least 600 MET-minutes/week. Category 3 High: A separate category labelled 'high' can be computed to describe higher levels of participation. The two criteria for classification as 'high' are: a) vigorous-intensity activity on at least 3 days achieving a minimum Total physical activity of at least 1500 MET-minutes/week OR b) 7 or more days of any combination of walking, moderate-intensity or vigorous-intensity activities achieving a minimum Total physical activity of at least 3000 MET-minutes/week

The IPAQ sitting question is an additional indicator variable and is not included as part of any summary score of physical activity. For the sitting question 'Minutes' is used as the indicator to reflect time spent in sitting rather than MET-minutes which would suggest an estimate of energy expenditure.

The prevalence of physical inactivity was calculated as the percentage of students involved in the activity. Normality of distributions of variables was tested. Median was calculated for total physical activity. Mean values are also reported for additional information. The analyses were performed on the total sample of participants and separately for men and women. Gender differences in physical activity were tested using Mann-Whitney Test. The level of significance for all analyses was set at $P < 0.05$. Statistical analyses were performed by Microsoft excel 2010.

Results

The age group was 18-24 years. Mean age of the participants were 19.72 years. Out of 250 students 15 were male and 235 were female students. (Table 1)

Table 1: Descriptive analysis of age of the participants

	N	Minimum	Maximum	Mean	SD
Age	250	18	24	19.72	1.3672944

According to categorical scoring 21.2 % (n=53) showed a high levels achieving a minimum of at least 3010.5 MET-min /week.50 % (n=125) of students showed moderate level of physical activity achieving a minimum of at least 630 MET-min /week. 28.8% (n=72) did not meet the above two criteria and considered to have low activity. Gender specific prevalence of IPAQ categories and for total sample is given in Table 2.

Table 2: Prevalence of physical activity level (IPAQ categories)

IPAQ categories	Total participants (n=250)	Men (n=15)	Women (n=235)
High	21.2 % (n=53)	1.2 % (n=3)	20 % (n=50)
Moderate	50 % (n=125)	2.8 % (n=7)	47.2 %(n=118)
Low	28.8 % (n=72)	2% (n=5)	26.8 % (n=67)

Discussion

Results of this study show that physical inactivity remains a problem among students. The prevalence of physical

inactivity reported in this study was higher compared to Indian adults and urban Indian. The median PA score for the total sample was 1285.5 MET/minutes/week. The average score was different from activity scores in adult population of various age groups reported in studies from other European countries. The prevalence recorded in present study was less and these could be due to less PA programs, recreational facilities and busy curriculum. In most of the previous studies women found to have lower rates of participation in physical activity than men. A similar gender difference observed in our study with men spending more time in leisure time activity and women in domestic and gardening. It has been confirmed in the study by Dong and colleagues that women are engaged in higher house hold activity than for men. It is important to note that the above studies relate PA cross sectional with education level but not during the study course. Though IPAQ collects information on total sitting time, the data and observations are not discussed in other studies. A direct comparison of results could not be made with other Indian studies because of difference in the methodology, age group studied and the description of results in different domains and patterns of physical activity. The results of this study cannot be generalized as the sample is from the physiotherapy students and may not represent young adults in the general population. Study should be repeated with more samples from different population and cities from India to generalisation of populations. Study should be repeated with calculating physical activity for separate domain using IAPQ.

Conclusion

Physical inactivity was high in students of South Gujarat Medical Education and Research Centre. A gender difference in physical inactivity was observed in study with high level of physical inactivity in male compared to female. The prevalence recorded in present study might be due to fewer programs of physical activities, less recreational facilities and busy curriculum.

References

1. Caspersen CJ, Powell KE, Christenson GM. Physical activity, exercise, and physical fitness: definitions and distinctions for health related research. Public health reports. 1985; 100:126.
2. Van Der Horst K, Paw MJ, Twisk JW, Van Mechelen W. A brief review on correlates of physical activity and sedentariness in youth. Med Sci Sports Exerc. 2007; 39:1241-50.
3. Medicine ACoS. ACSM's guidelines for exercise testing and prescription. Lippincott Williams & Wilkins, USA, 2013.
4. Teychenne M, Ball K, Salmon J. Physical activity, sedentary behaviour and depression among disadvantaged women. Health Educ. Res. 2010; 25:632-644. doi: 10.1093/her/cyq008.
5. Directorate-General for Education and Culture, European Commission. Special Eurobarometer 412. Sport and Physical Activity Report. European Commission; Brussels, Belgium, 2014.
6. Bielak J, Krzyszycha R, Szponar B. Evaluation of dietary habits and other forms of behaviour of students from Lublin. Annales UMCS Sectio D. 2006; 61(2):874879.
7. Kolarzyk E, Kwiatkowski J, Lang-Młynarska D. Nutritional model and nutritional behaviours depending on BMI value among students of Collegium Medicum of Jagiellonian University in Cracow. Przegl Lek. 2003; 60(6):43-47.
8. Krzych Ł. An attempt at evaluation of medical students' lifestyle. Zdr Publ. (in Polish). 2004; 114(2):67-70.
9. Malara B, Woźniak J, Miarczyńska-Jończyk H, Jośko J, Jaskólecki H, Tyrpień M, *et al*. The assessment of food intake and declared satisfaction in medical students. Przegl Lek. 2003; 60(Suppl 6):12-15.
10. Szponar B, Krzyszycha R. Assessment of food intake by Lublin University of Medicine students in 2007/2008. Bromat Chem Toksykol (in Polish). 2009; 62 (2):111-116.
11. Directorate-General for Education and Culture, European Commission. Special Eurobarometer 412. Sport and Physical Activity Report. European Commission; Brussels, Belgium, 2014.
12. Hallal PC, Andersen LB, Bull FC, Guthold R, Haskell W, Ekelund U, *et al*. Global physical activity levels: Surveillance progress, pitfalls, and prospects. Lancet. 2012; 380:247-257. doi: 0.1016/S0140-6736(12)60646-1.
13. Woitas-Ślubowska D, Hurnik E, Skarpańska-Stejnborn A. Correlates of smoking with socioeconomic status, leisure time physical activity and alcohol consumption among polish adults from randomly selected regions. Cent. Eur. J. Public Health. 2010; 18:179-185.
14. Robiner W, Lazear S, Duffy B. Promoting health behaviours in medical education. Clin Teach. 2013; 10:160-64.
15. Mannu GS, Zaman MJs, Gupta A, *et al*. Evidence of lifestyle modification in the management of hypercholesterolemia. Curr Cardiol Rev. 2013; 9:2-14.
16. Farjad Afzad, Akhtar Rasul. Prevalence of physical inactivitiy evalence of Physical Inactivity in Students of Sargodha Medical College.