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Original Research Article

Study on practice of physical activity among medical interns in a private medical college hospital in Chennai

Ramkumar Boopathirajan[1]*, Aswathy Raveendran[1], Pavithra Ayyalusamy[2]

[1]Department of Community Medicine, SRM Medical College Hospital & Research Centre, Kattankulathur, Chennai, Tamilnadu, India
[2]Department of Radio Diagnosis, Shri Sathya Sai Medical College & Research Institute, Ammapettai, Kanchipuram District, Tamil Nadu, India

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***Correspondence:**
Dr. Ramkumar Boopathirajan,
E-mail: dr.ramkumarb@gmail.com

ABSTRACT

Background: Physical inactivity is one of the leading risk factors for death worldwide. It is a key risk factor for non-communicable diseases (NCDs) such as cardiovascular diseases, cancer and diabetes. Physical activity has significant health benefits and contributes to prevent NCDs. Globally, 1 in 4 adults are not active enough. More than 80% of the world's adolescent population is insufficiently physically active. So the aim of this study is to assess the practice of physical activity among the medical interns, as they are the future doctors.
Methods: A cross sectional study was conducted among 124 medical interns. A pre-tested, semi-structured questionnaire was used to collect the data. Microsoft Excel 2010 spread sheet version 14.1.3 and statistical package for social sciences (SPSS) version 21 were used for data entry and analysis. The results are expressed as percentages and proportions.
Results: In our study majority of the interns 66 (64.1%) had normal body mass index (BMI). The practice of non-exercise physical activity is more in female than male interns whereas the exercise physical activity is more in males comparing to female interns.
Conclusions: Physical inactivity is an urgent public health priority, so long-term follow-up is needed to identify the factors promoting for the practice of physical activity among medical interns.

Keywords: Physical activity, Medical interns, Healthy lifestyles

INTRODUCTION

As defined by WHO, physical activity is any bodily movement produced by skeletal muscles that requires energy expenditure. These activities include travelling, recreational activities, household activities, playing, working, etc. Globally, insufficient physical activity is one of the major risk factor for death and it is considered as fourth leading cause of mortality, which contributes to approximately 3.2 million deaths each year.[1-3]

The risk for chronic and non-communicable disease increases with insufficient physical activity. There is increased risk for developing type II diabetes mellitus, hypertension, carcinoma and mental health issues.[4] And also, insufficient physical activity can be compared with tobacco, alcohol consumption and obesity as a cause of reduced life expectancy.[1] Various studies done earlier state that approximately 21-25% breast and colon carcinomas, 27% of diabetes and 30% of ischemic heart disease burden is caused by insufficient physical actvity.[5-7]

According to WHO statistics, 23% of adults more than 18 years of age and 81% of adolescents in the age group of 11-17 years were insufficiently active.[8,9] As the physical inactivity increases non communicable disease burden of the community, WHO has set up a global target of 10% relative reduction in the prevalence of insufficient physical activity by the year 2025.[8]

Currently, there is recommendation of engaging in minimum 150 minutes of moderate intensity aerobic activity or 75 minutes of vigorous intensity physical activity per week for adults to improve cardio respiratory and muscle fitness.[10]

Insufficient physical activity and sedentary life style habits have negative impact on overall health status of a population.[11,12] Particularly among university going students it is a common and noteworthy issue.[13,14]

Among the college going students, it will be assumed that medical students have greater knowledge about the benefits of healthy life style practices, dietary habits and the risks associated with physical inactivity and sedentary lifestyle. But physical inactivity is also common among medical students. The reasons being lack of time due to workload, academic activities and laziness. Also, usage of gadgets like smartphones and computers reduces the quality time which results in physical inactivity.[13] So the future doctors should be physically active themselves to promote physical activity and to educate the population about the risks associated with physical inactivity.[15,16] The aim of this study is to assess the practice of physical activity among medical interns.

METHODS

This is a cross sectional study which was conducted among medical interns in SRM medical college, Kattankulathur, Chennai. This college was established before 15 years and it actively promotes physical activity among the students by infrastructural development, providing indoor, outdoor play ground, gym, swimming pool and regularly organises inter-college and intra-college sports events.

The study was conducted from March 2018 to February 2019 with the sample size of 124. Medical interns who passed their final MBBS university examinations in February 2018 and interns who were willing to participate were included the study. Interns who did not give their oral consent were excluded from this study. A pre-tested, semi-structured questionnaire was administered to the interns who were posted in the department of Community Medicine and data was obtained. On the first day of their posting along with the orientation, the purpose of this study was clearly explained to the participants. The participant's informed oral consent was obtained before administering the questionnaire and collected back after 30 minutes. Out of 124 responses, only 103 responses were complete and adequate. Rest of the 21 responses were inadequate hence they were excluded from this study. The questionnaire included demographic details, details about physical activity, height and weight. Body mass index (BMI) was calculated using the formula weight in kilograms/height in meter square. Data was entered into Microsoft Excel 2010 spread sheet version 14.1.3 and analysed using Statistical Package for Social Sciences (SPSS) version 21.0. Descriptive statistics were reported as frequencies (percentage) for demographic data. A Chi-Square test of significance was used for analysis of categorical variables. P value <0.005 were considered significant.

RESULTS

In our study population, 64 (62.1%) interns were aged 23 years, 21 (20.4%) were aged 24 years, 16 (15.5%) were aged 22 years and 2 (1.9%) were aged 25 years. The minimum age was 22 years and the maximum age was 25 years. The mean age was 23.09. There were 51 (49.5%) male interns and 52 (50.5%) female interns. Out of 103 interns, 66 (64.1%) had normal body mass index (BMI), 18 (17.5%) were overweight in which 12 (23.1%) were females and 6 (11.7%) were males. In our study population, 9 (8.7%) were obese in which 5 (9.6%) were females and 4 (7.8%) were males. Nearly 81 (78.6%) interns were physically active (Table 1).

Table 1: Distribution of proportion of the demographic variables.

Variables	Frequency (n=103)	Percentage (%)
Age (in years)		
22	16	15.5
23	64	62.1
24	21	20.4
25	2	1.9
Sex		
Male	51	49.5
Female	52	50.5
BMI		
Underweight <18.5	10	9.7
Normal 18.5-24.9	66	64.1
Overweight 25-29.9	18	17.5
Obese >30	9	8.7
Physical activity		
Yes	81	78.6
No	22	21.4

Table 2 shows the practice of non-exercise physical activities and exercise physical activities. In non-exercise physical activities, 72 (69.9%) was for shopping food, groceries and clothes, 47 (45.6%) for cleaning the house, 41 (39.8%) for doing laundry, ironing and 34 (33%) for preparing food, washing, cooking. In exercise physical

activity 65 (63.1%) was for walking, 47 (45.6%) for jogging/running and gymming. In games 38 (36.9%) was for batminton, 34 (33%) for swimming and 26 (25.2%) for cricket, 30 (29.1%) for dancing/zumba.

The result of cross tabulation between the practice of non-exercise physical activities and exercise physical activities with sex showed non exercise physical activities were statistically significant among female interns with P value of <0.005.

Table 2: Distribution of proportion of non-exercise physical activities and exercise physical activities.

Activities	Yes	No	Total
	N (%)	N (%)	N (%)
Non-exercise physical activities			
Preparing food, washing, cooking	34 (33)	69 (67)	103 (100)
Shopping food, groceries, clothes	72 (69.9)	31 (30.1)	103 (100)
Cleaning the house	47 (45.6)	56 (54.4)	103 (100)
Doing laundry and ironing	41 (39.8)	61 (60.2)	103 (100)
Social work	6 (5.8)	97 (94.2)	103 (100)
Exercise physical activities			
Swimming	34 (33)	69 (67)	103 (100)
Walking	65 (63.1)	38 (36.9)	103 (100)
Jogging/Running	47 (45.6)	56 (54.4)	103 (100)
Tennis	13 (12.6)	90 (87.4)	103 (100)
Badminton	38 (36.9)	65 (63.1)	103 (100)
Cricket	26 (25.2)	77 (74.8)	103 (100)
Football	17 (16.5)	86 (83.5)	103 (100)
Gymming	47 (45.6)	56 (54.4)	103 (100)
Basketball	7 (6.8)	96 (93.2)	103 (100)
Table tennis	6 (5.8)	97 (94.2)	103 (100)
Trekking	4 (3.9)	99 (96.1)	103 (100)
Dancing/Zumba	30 (29.1)	73 (70.9)	103 (100)

Table 3: Association between non-exercise physical activities and exercise physical activities with sex.

Activities	Male		Female		Chi Square	P value
	Yes	No	Yes	No		
Non-exercise physical activities						
Preparing food, washing, cooking	7	44	27	25	16.988	0.000*
Shopping for food, groceries, clothes	33	18	39	13	1.297	0.288
Cleaning the house	19	32	28	24	2.857	0.115
Doing laundry and ironing	12	39	29	23	11.169	0.001*
Social work	2	49	4	48	0.667	0.678
Exercise physical activities						
Swimming	20	31	14	38	1.759	0.213
Walking	29	22	36	16	1.692	0.224
Jogging/Running	26	25	21	31	1.165	0.325
Tennis	9	42	4	48	2.314	0.149
Badminton	21	30	17	35	0.796	0.418
Cricket	24	27	2	50	25.478	0.000*
Football	16	35	1	51	16.204	0.000*
Gymming	25	26	22	30	0.468	0.555
Basketball	4	47	3	49	0.175	0.715
Table tennis	4	47	2	50	0.750	0.437
Trekking	2	49	2	50	0.000	1.000
Dancing/Zumba	10	41	20	32	4.434	0.050

These statistically significant activities included household activities like preparing food, washing and ironing. The exercise physical activities was statistically significant among male interns with P value of <0.005. The statistically significant activities included outdoor activities like playing cricket & football. In our study, we draw a result of female interns doing more household activities and less outdoor activities as compared to male interns (Table 3).

DISCUSSION

Regular physical activity is an essential part of healthy lifestyle. Maintaining the recommended physical activity is crucial for physical as well as mental wellbeing of a person. Our study was focused mainly to evaluate the level of physical activity among medical interns as the young future doctors should be physically active to promote healthy lifestyle and to spread awareness about the risks associated with physical inactivity.

The present study reports the prevalence and practice of non-exercise physical activity and exercise physical activity among medical interns aged 22 to 25 years. The male and female ratio was similar to study conducted by Rao et al.[17] Majority of the participants in our study was having normal body mass index 66 (64.1%), this was similar to a study conducted in India and Thailand.[17,18] The prevalence of overweight was 18 (17.5%) and the prevalence of obesity was 9 (8.7%), this was similar to a study conducted by Tiwari et al.[19]

In our study, 43 (84.3%) male participants were physically active compared to 38 (73.1%) female participants. Hence physical activity is less in females compared to males, which was similar to other studies.[20-24] Majority of the participants in this study were physically active and beneficial 81 (78.6%), which is similar to conducted by Dayi et al.[25]

The main source of non-exercise physical activity in the present study was from non-work related activity. Shopping food, groceries, clothes were the most common non-exercise physical activity 72 (69.9%), followed by cleaning the house 47 (45.6%), doing laundry and ironing 41 (39.8%), preparing food, washing, cooking 34 (33%) and least was from social work 6 (5.8%). Among the exercise physical activity, walking is the most common one accounting for 65 (63.1%), which was similar to a study conducted by Saranya et al.[26] There are no existing data on non-exercise physical activity in adolescents for comparison, but the prevalence of light-intensity physical activity was reported to be similar between adolescent boys and girls[27] or even higher in girls.[28,29]

Limitations

In our study only small number of participants was included. Next, using a self-report questionnaire to collect physical activity participation is subjective and based on participant's recall memory. Another limitation is that this study has been undertaken in a single medical college and its findings may not fully reflect the situation for medical students elsewhere in India or internationally.

The sample group selected also may not fully reflect the population of students at our college

CONCLUSION

There is a need to encourage physical activity in medical colleges and also to emphasize the importance of inculcating physical activity in the lifestyle of medical students, so that as physicians of tomorrow, they will able to advice their patients regarding healthy lifestyle practices.

Recommendations

We recommend that there is a need to promote physical activity among medical students, particularly among female students. Both individual and population approaches are needed. For an individual approach, developing social support from friends and families may be a key to increase physical activity. For a population approach, the policymakers of the medical school should take suitable action to highlight the importance of physical activity among medical students. There is a need to encourage physical activity in medical schools and also to emphasize the importance of inculcating physical activity in the lifestyle of medical students, so that as physicians of tomorrow, they will able to advice their patients regarding healthy lifestyle practices.

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