# To Evaluate the Physical Activity Pattern in The Undergraduate Medical Students of Dow Medical College.

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## ABSTRACT

*Objective:*

*To evaluate physical activity pattern i.e. high, moderate and low activities among the students of DOW MEDICAL COLLEGE KARACHI.*

*Method:*

*It was a cross sectional observational study. The study was conducted from September 2013 to January 2014.The data was collected among 200 undergraduates' medical students, 40 students from each batch. We used a pre-tested IPAQ questionnaire. Data entry and analysis was done on Statistical Package for Social Sciences (SPSS) version 16. Results are shown in frequencies and percentages.*

*Result:*

*The study shows, undergraduate medical students having low, moderate and high physical activity are 24.5%, 69.5% and 6% respectively. The mean standard deviation of age of the participants with low, moderate and high physical activity are (20.29±1.291), (19.92±1.263) and (19.92±1.379) respectively and (p=0.223) is not significant and of BMI for low, moderate and high physical activity are (20.67±3.74),(21.60±4.53) and (24.60±3.85) respectively and there is significant difference in the BMI of participants with low and high physical activity (p= 0.014).The rest of the variables: work part time, own transport for routine use and prefer spending time indoor than outdoor of the participants with low, moderate*

*and high physical activity are not significant (p ≥ 0.05).*

## CONCLUSION:

*From our study, it has been concluded that moderate physical activity is usually the part of undergraduate medical students. Strong conducive environment is necessary to promote physical activity among medical students, as they will act as a role model for the society.*

## KEYWORDS:

IPAQ; Medical undergraduates; exercise; BMI; physical activity.

## INTRODUCTION:

Physical inactivity is considered as one of the major factor that leads to death. [1] WHO defines the physical activity as any movement by the muscles of our body that requires consumption of energy. Physical inactivity causes 3.2 million deaths globally and it has been identified as the fourth leading element that leads to death. [2] It is shown that 60% of the population does not undergo required physical activity that is necessary for the healthy lifestyle. [3] Physical inactivity cause approximately 30% ischemic heart disease, 21–25% breast colon cancers and 27% diabetes. [2] Physical activity decreases the riskof osteoporosis, osteoarthritis, diabetes mellitus, cardiovascular diseases and some cancers. [4] WHO has given guidance for the optimal amounts of physical activity, but doing some physical activity is better than doing none. People should start physical activity from small amount and gradually increase its duration, frequency and intensity.

Exercise is a part of physical activity that requires structured movement in series and has an aim to improve and maintain the fitness. [5]

A lot of researches regarding the awareness and pattern of the physical activity among the students have been done in the whole world. Majority of the medical students, though, knew the benefits of exercise but were unaware of the recommended physical activity required to live a healthy life. [6] The greatest decline in physical activity were seen in teenagers, but still it is most likely that, least amount of physical activity will be noticed in younger age group. [7] In order to live a healthy life, everyone performs physical activity but it varies from person to person as well as for a given person over time. [8]

Doctors play a major role to provide health-related information regarding physical activity. They have the potential to encourage healthy lifestyle in the society by increasing the levels of physical activity in large population. Among medical students, it could facilitate the formation of healthy physicians. [6] Therefore, our present endeavor is undertaken to study the pattern of physical activity among medical undergraduate students, as they would act as role models for the society to improve healthy lifestyle among others. For this, short version IPAQ based Questionnaire is used to evaluate high, moderate and low physical activity pattern in

undergraduatemedical students in relation to Age, Gender, Year of course study, BMI, Work part time, Own transport for routine use and prefer spending time indoor than outdoor.

**METHOD:**

The study was conducted from September 2013 to January 2014.It was cross sectional study in which low, moderate and vigorous physical activity of the students were evaluated in seven domains of age, year of study, gender, work part time, own transport for routine use, spending time indoor than outdoor and BMI. The data was collected among 200 undergraduate medical students, 40 students from each batch. We used a pre-tested IPAQ questionnaire to collect the data. The IPAQ is a standard tool that is used internationally for the evaluation and comparable estimates of physical activity. It has two versions. The main aim of short version is to closely observe the physical activity on national and regional basis but the long version is use for detailed information of research work. Here we are using the short version of IPAQ Questionnaire, in which we used the following criteria:

> Vigorous Intensity Activity: It includes heavy lifting, digging, aerobics, fast bicycling or anything that makes the person breath much harder than normal and is done for at least 10 minutes at a time.
> Moderate Intensity Activity: It includes carrying light loads, bicycling at regular pace or double tennis or anything that makes the person breath somewhat harder than normal and is done for at least 10 minutes at a time.
> Low Intensity Activity: It includes normal walk i.e. walk done at home, work, or at any recreation and travel from place to place and that is done for at least 10 minutes at a time.

Scoring of three levels of physical activity is done as

> HIGH PHYCIAL ACTIVITY: Vigorous-intensity activity on at least 3 days and accumulating at least 1500 MET-minutes/week
> MODERATE PHYSICAL ACTIVITY: Moderate-intensity activity on 5 or more days and walking of at least 30 minutes per day
> LOW PHYSICAL ACTIVITY: Some activity is done but not enough to meet the criteria of high and moderate physical activity.

Collected data is expressed as a continuous measure and reported as median MET-minutes. Median values and interquartile ranges is computed for walking (W), moderate-intensity activities (M), and vigorous-intensity activities (V) and combined total physical activity score within each domain using the formula :

MET level x minutes of activity/day x days per week.

Where, MET levels for

Walking= 3.3 METs

Moderate= 4.0 METs

Vigorous=8.0 METs.

And combined physical activity score is calculated as:

Total MET-minutes/week = Walk (METs*min*days) + Mod (METs*min*days) + Vig (METs*min*days)

Data entry was done on Microsoft Excel 2007 and analysis on SPSS version 16. Results are shown in frequencies and percentages.

**RESULT:**

The Table 1 presents:

Undergraduate medical students have 24.5%, 69.5% and 6% of high, moderate and low physical activity respectively. Same is shown in figure: 1

Table 2 shows that:

Among them, the males with low physical activity are 16.9%, moderate physical activity are 74.7% and high physical activity are 8.45%. Females with low, moderate and high physical activity are 29.9%, 65.8% and 4.3% respectively and there is no significant difference in demographic data between them (p = 0.07). The mean standard deviation (SD) of age of the participants with low, moderate and high physical activity are (20.29±1.291), (19.92±1.263) and (19.92±1.379) respectively and (p=0.223) is not significant. The mean standard deviation of BMI of low, moderate and high physical activity are (20.67±3.74), (21.60±4.53) and (24.60±3.85) respectively, and there is significant difference in the BMI of participants with low and high physical activity (p= 0.014), this is shown in figure: 2. The rest of the variables: work part time, own transport for routine use and prefer spending time indoor than outdoor of the participants with low, moderate and high physical activity are not significant (p ≥ 0.05).

**DISCUSSION:**

The cross-sectional, IPAQ based study among medical undergraduates revealed that most of the students are engaged in moderate physical activity. Majority of them, though, knew the benefits of exercising but were unaware of the recommended physical activity for an adult to sustain health benefits. In the international research among youth, health-promoting behaviors are uncommon and regular physical activity was performed by approx. 28.4% of young people, 3 times a week. [9.10] In our study, 24.5% of the participants are engaged in low physical activity, 69.5% in moderate physical activity and 6% in high physical activity. Among them, 41.5% are males and 58.5% are females. Many researchers show the difference in health behavior in students of both genders. [10,11,12,13] These studies shows that men cope better with stress and more often cared about physical activity; however, they consume alcohol and smoke cigarettes more often than girls. [11,12] But in our study there is no significant difference in physical

activity pattern between the two genders.

Another research shows that overweight and obese category by BMI, approximately 70% of males and females were having physical activity less than the recommended level. [14] In our study, there is significant difference between the BMI of the participants engaged in low and high physical activity. The mean ±SD of the BMI of low and high physical activity are (20.67±3.74) and (24.60±3.85) respectively.

In a similar study, 2001 Behavioral Risk Factor Surveillance System Survey (BRFSS survey), percentage of active individuals in the age group 18-44 years was found to be 50.2%. This shows the proportion of subjects in this study were less active as compared to the other studies, [16,15] although the study subjects were of the younger age group. [17] This could partly be explained by the complex, stressful, and hectic teaching schedule of medical education that gives lesser time for students to participate in the physical

activity. [17] But in our study 70.5% of the age group 18-21 years and 63% of age group 22-24 years are engaged in moderate physical activity.

The physical activity pattern of undergraduates of different course of study shows that $2^{nd}$ year students are highly active and 70.5% of them are engaged in moderate physical activity.

In the present endeavor we estimated the physical activity pattern in relation to Work part time, Own transport for routine use and Prefer spending time indoor than outdoor but no significant relation is found between them.

**CONCLUSION:**

From our study, it has been concluded that moderate physical activity is usually the part of undergraduate medical students. Strong conducive environment is necessary to promote physical activity among medical students, as they will act as a role model for the society.

**Table 1. Frequencies and percentages of physical activity pattern by socio demographic characteristics among medical students of DOW MEDICAL COLLEGE.**

| Characteristics | Frequency | Percentage |
|---|---|---|
| Age | | |
| 18-21 | 173 | 86.50 |
| 22-24 | 27 | 13.50 |
| Gender | | |

| | | |
|---|---|---|
| Male | 83 | 41.50 |
| Female | 117 | 58.50 |
| Work part time | | |
| Yes | 32 | 16 |
| No | 168 | 84 |
| Own transport for routine use | | |
| Yes | 90 | 45 |
| No | 110 | 55 |
| Prefer spending time indoor than outdoor | | |
| Yes | 136 | 68 |
| No | 64 | 32 |
| Levels of physical activity | | |
| Low | 49 | 24.50 |
| Moderate | 139 | 69.50 |
| High | 12 | 6 |

**Table 2. Anthropometric measurements of the study subjects according to sociodemographic characteristics and physical activity level**

| Characteristics | LOW PHYSICAL ACTIVITY | | MODERATE PHYSICAL ACTIVITY | | HIGH PHYSICAL ACTIVITY | | P value |
|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | |
| Age (mean ±SD) | (20.29±1.291) | | 19.92±1.263 | | 19.92±1.379 | | 0.223 |
| MBBS year | | | | | | | |
| 1st year | 10 | 25 | 25 | 62.50 | 5 | 12.50 | |
| 2nd year | 8 | 20 | 31 | 77.50 | 1 | 2.50 | |
| 3rd year | 10 | 25 | 29 | 72.50 | 1 | 2.50 | |
| 4th year | 13 | 32.50 | 26 | 65 | 1 | 2.50 | |
| 5th year | 8 | 20 | 28 | 70 | 4 | 10 | |
| Gender | | | | | | | 0.07 |
| Male | 14 | 16.86 | 62 | 74.69 | 7 | 8.43 | |
| Female | 35 | 29.91 | 77 | 65.81 | 5 | 4.27 | |
| Work part time | | | | | | | 0.441 |
| Yes | 5 | 15.62 | 25 | 78.12 | 2 | 6.25 | |
| No | 44 | 26.19 | 114 | 67.85 | 10 | 5.95 | |
| Own transport for routine use | | | | | | | 0.403 |
| Yes | 18 | 20 | 66 | 73.33 | 6 | 6.66 | |
| No | 31 | 28.18 | 73 | 66.36 | 6 | 5.45 | |
| Prefer spending indoor than outdoor | | | | | | | 0.266 |
| Yes | 36 | 26.47 | 90 | 66.17 | 10 | 7.35 | |
| No | 13 | 20.31 | 49 | 76.56 | 2 | 3.12 | |
| BMI (Mean ±SD) | 20.67±3.74 | | 21.60±4.53 | | 24.60±3.85 | | 0.020 |

Figure: 1

Figure: 2



Levels of physical activity

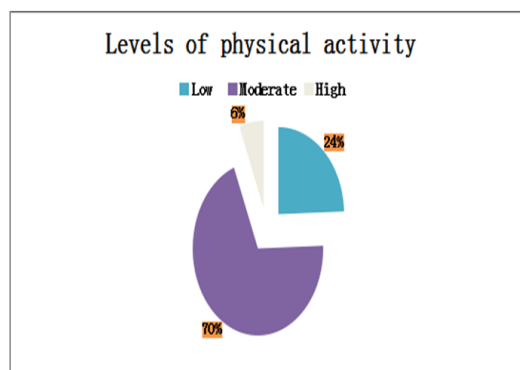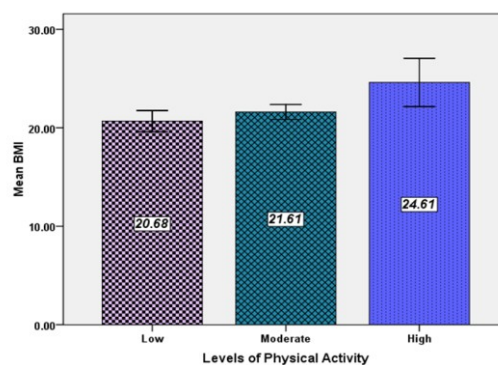**REFFERENCE:**

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