The dietary habits and physical activities of undergraduate medical students in Karachi

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Received: April 2021; Accepted: May 2021; Published: June 1, 2021.
Citation: Tafazzul Hyder Zaidi et al. The dietary habits and physical activities of undergraduate medical students in Karachi. World Family Medicine. 2021; 19(6): 39-50. DOI:10.5742/MEWFM.2021.94063

Abstract

Introduction: Having healthy dietary habits, undertaking sufficient physical activity, and tackling overweight and obesity are fundamental aspects of the prophylactic ways of ensuring health. Dietary pattern such as eating a range of food that is high in fruits, vegetables and fiber and low in saturated fat, sugar and salt can help in maintaining a healthy weight. Particularly, dietary pattern including regular breakfast consumption has been associated with lower body weight. Moreover, the WHO identified physical inactivity as the fourth leading risk factor responsible for 6% of deaths globally. Good workout and dietary habits are time consuming to develop and difficult to cultivate later on in life yet they are paramount for a soundly functioning brain and body; therefore, directly correlated to well-being and hence efficiency of medical students not only in their academic but also in their practicing years. In medical colleges, high vulnerability to anxiety and stress accentuates even more on the adaptation of a good lifestyle. Hence, there is a need to assess the knowledge, attitude and pattern of physical activity and dietary habits of undergraduate medical students of Karachi and to determine the corresponding motivating and hindering factors.

Objective: To determine the dietary habits and physical activities in association with underlying motivating and hindering factors in undergraduate medical students at Sindh Medical College, Jinnah Sindh Medical University, Karachi.

Methodology: A cross sectional study from October 2020 to January 2021 was conducted in the Sindh Medical College, Jinnah Sindh Medical University. The study was conducted on 316 undergraduate medical students studying in the university. The sampling technique was non probability purposive sampling. The data was collected by distributing a structured questionnaire. Due to the Covid pandemic the researchers sent the questionnaire to the participants in the form of online Google forms as physical data collection was not possible since the students were at home taking online classes.Written Informed Consent was taken from the participants and all ethical considerations and research protocols were observed. Data was collected in the form of pre-tested self-administered questionnaires. In order to standardize the questionnaires, a pilot study was conducted among research participants for the purpose of examining content validity. Data collected was analyzed using SPSS software version 20.0 and chi square test was used to determine factors associated with demographic profile with physical

activity and dietary pattern. The statistical analysis was conducted with 95% confidence interval and p-value of <0.05 was taken as threshold of statistical significance.

Results: Of the 316 participants the age ranges of participants were; 9.4%(n=33) were 16 to 18 years old, 54.4%(n=191) were 19 to 21 years old and 26.2% (n=92) were aged 22 to 24 years. Among the participants 15.4%(n=54) were males and 74.6%(n=262) were females. According to the year of study wise distribution, 20.2%(n=71) were from first year, 13.1%(n=46) were from second year, 12.8%(n=45) were from third year, 39.9%(n=140) were from fourth year and 4%(n=14) were from final year. About 82.3%(n=289) participants were living at home and 7.7%(n=27) were living in hostels.

When asked what type of physical activity did they perform, 48.4%(n=140) said walking, 3.1%(n=11) were jogging, 6.8%(n=24) replied outdoor games, 14.2(n=50) responded as other physical activities and 17.4%(n=61) were doing no physical activity. When asked what was the duration of their physical activity, 15.7%(n=55) were doing 0 minutes/day, 43.6%(n=153) were doing less than 30 minutes/day, 23.4%(n=82) were doing from 31 to 60 minutes/day and 7.4%(n=26) were doing more than 60 minutes/day. When asked how many days in a week did they do physical activity, 15.4%(n=54) said 0 days, 7.7%(n=27) said 1 day/ee,39.6%(n=139) said 2 to 4 days, 13.1%(n=46) said 5 to 6 days and 14.2%(n=50) said every day. When asked what in their opinion should be the reason for exercising, 64.7(n=227) said fitness, 12%(n=42) said stamina, 9.1%(n=32) said to lose weight and 4.3% (n=15) said that they had no idea. When asked how much time did they think they spent sitting watching TV, using cell phone or computers in one day, 0.6%(n=2) said 0 minutes/day, 2.8%(n=10) said less than 30 minutes/day, 13.1%(n=46) said 30 to 60 minutes/day, 22.5%(n=79) said 61 to 120 minutes/day, 20.5%(n=72) said 121 to 180 minutes/day and 30.5%(n=107) said more than 180 minutes/day. When asked whether they thought they were overweight or obese,19.1%(n=67) said yes, 59.3%(n=208) said no and 11.7%(n=41) said maybe. When asked how frequent was daily intake of meal throughout a day, 2.8%(n=10) said Once a day, 21.9%(n=77) said twice a day, 54.7%(n=192) said thrice a day and 10.5%(n=37) said more than three meals a day. When asked how often did they consume caffeine (tea, coffee) a day, 21.7%(n=76) said none, 22.5%(n=79) said once a day, 35.3%(n=124) said twice a day,7.7%(n=27) said three times a day and 2.8%(n=10) said more than three times a day. When the participants were asked which diet were they currently on, 66.1%(n=232) said a balanced diet, 18.2%(n=64) said a heavy diet (fast foods and dairy products) and 5.7%(n=20) said a light diet (mostly salads and fresh fruits). When asked whether they have their breakfast, 73.8%(n=259) said yes and 16.2%(n=57) said no. Out of those having breakfast, 55%(n=193) had it everyday and 31.1%(n=109) had it sometimes. When asked how many hours did they take sleep daily, 13.7%(n=48) said 4 to 6 hours, 48.4%(n=170) said 6 to 8 hours, 24.5%(n=86) said 8 to 10 hours and 3.4%(n=12) said more than 10 hours. When asked whether they take dietary fibers in the form of vegetables, fruits, psyllium husk, etc, 70.7%(n=248) said yes and 19.4%(n=68) said no.

Conclusion: Medical students are future doctors and the responsibility of maintaining the health of general population at large rests on their shoulders. They should be the role models for the community in maintaining a healthy life style. The findings of this study have shown that a lot needs to be done on the part of our future doctors in revisiting their lifestyle, especially with regard to their dietary patterns and physical activity. An adequate proportion of our undergraduate medical students are trying their best to take a balanced diet and engage in physical activity for maintaining good health. These students should act as enablers to help out their fellow medical students who are not so careful about their lifestyle.

Key words: Dietary Patterns, Physical Activity, Lifestyle, Medical Students

Introduction

Having healthy dietary habits, undertaking sufficient physical activity, and tackling overweight and obesity are fundamental aspects of the prophylactic ways of ensuring health (1). Eating habits can be understood in terms of what and how people eat, their selection of food and the way of taking food. Dietary patterns such as eating a range of food that is high in fruits, vegetables and fiber and low in saturated fat, sugar and salt can help in maintaining a healthy weight. Particularly, dietary patterns including regular breakfast consumption have been associated with lower body weight (2). Physical activity is defined as any bodily movement produced by skeletal muscles that require energy expenditure. Physical activity and exercise are the terms that are used interchangeably but exercise is a subset of physical activity (3). According to the World Health Organization (WHO), physical inactivity and low intake of fruits and vegetables are considered some of the major preventable risk factors for non-communicable diseases (NCDs)(4). The onset of these diseases in younger populations will lead to more economic burden on the already staggering economics of middle and low income countries(11). The 2008 Physical Activity Guidelines for Americans recommended that adults complete at least 150 minutes of moderate-intensity physical activity or 75 minutes of vigorous-intensity aerobic physical activity weekly, and they should complete moderate- or high-intensity muscle-strengthening activities at least 2 days

per week(6). The American College of Sports Medicine maintained these recommendations in 2011(10). Regular exercise and healthy diet boosts immune system and reduces the risk of cardiovascular diseases, obesity, diabetes, colon cancer, osteoporosis and depression. Moreover, the WHO identified physical inactivity as the fourth leading risk factor responsible for 6% of deaths globally (4). A study conducted by the Faculty of Medicine, Mansoura University, Egypt showed that two-thirds of the 908 medical students included in the study consumed fast food regularly. Other studies have shown higher figures with findings of 21 (22%) obese amongst the 93 preclinical students in a Malaysian medical university in a study in 2017 (5). In a recent study from Lahore, 21% of medical students were of BMI 25 or more. There were 46% men with central obesity and 31.4% were women. The associated risk factors were high-calorie food, studying at private medical colleges, male gender, lack of sports, and no regular exercise (6). It is acknowledged that medical students have a superior understanding of health issues. But due to the vigorous and time-consuming schedule of a medical student, improper dietary habits, and inadequate physical activity, often lead to an unhealthy lifestyle (7). In addition, it has been shown that physicians and medical students with a normal body mass index (BMI) and who practice moderate and/or vigorous physical activity are more likely to feel confident about counselling their patients about physical activity than their colleagues who do not practice physical activity or who are overweight(12). Worldwide, in 2010, the WHO reported 23% of adults aged 18 years old and above and 81% of adolescents aged 11–17 years were insufficiently physically active. Insufficient physical activity (PA) contributes to 3.2 million deaths each year and scientific evidence supports that PA can reduce mortality. In addition, unsuitable dietary habits coupled with inadequate physical activity are associated with an increased prevalence of obesity and osteoporosis (8). Medical and paramedical students are considered as future health care providers and play a health-promoting role. Previous studies indicate that physical activity, diet, life satisfaction, and general health have decreased in medical students(9).

Good workout and dietary habits are time consuming to develop and difficult to cultivate later on in life yet they are paramount for a soundly functioning brain and body; therefore, directly correlated to well-being and hence efficiency of medical students not only in their academic but also in their practicing years. In medical colleges, high vulnerability to anxiety and stress accentuates even more on the adaptation of a good lifestyle. Karachi, being an overly populated city with a troubling doctor to population ratio, demands its limited health professionals even more to have a better equipped body to sustain the common strains to which they are exposed to at work. Adhering to a consistent and healthy dietary and exercise regimen is not only beneficial to incorporate discipline into their lives but it also teaches them to translate their medical knowledge into their own lives. Hence, there is a need to assess the knowledge, attitude and pattern of physical activity and dietary habits of undergraduate medical students of Karachi and to determine the corresponding motivating and hindering factors.

Objective

To determine the dietary habits and physical activities in association with underlying motivating and hindering factors in undergraduate medical students at Sindh Medical College, Jinnah Sindh Medical University, Karachi.

Methodology

A cross sectional study from October 2020 to January 2021 was conducted in the Sindh Medical College, Jinnah Sindh Medical University. The study was conducted on 316 undergraduate medical students studying in the university. The sampling technique was non-probability purposive sampling. The data was collected by distributing a Structured Questionnaire. Due to the Covid pandemic the researchers sent the questionnaire to the participants in the form of online Google forms as physical data collection was not possible since the students were at home taking online classes. The questionnaire consisted of one section containing demographic profile, the other section containing questions regarding physical activity and the third section containing questions pertaining to dietary pattern. Written Informed Consent was taken from the participants and all ethical considerations and research protocols were observed. Data was collected in the form of pre-tested self-administered questionnaires. In order to standardize the questionnaires, a pilot study was conducted among research participants for the purpose of examining content validity. Data collected was analyzed using SPSS software version 20.0 and chi square test was used to determine factors associated with demographic profile with physical activity and dietary pattern.The statistical analysis was conducted with 95% confidence interval and p-value of <0.05 was taken as threshold of statistical significance.

Results

Of the 316 participants the age ranges of participants were; 9.4%(n=33) were 16 to 18 years old, 54.4%(n=191) were 19 to 21 years old and 26.2% (n=92) were aged 22 to 24 years. Among the participants 15.4%(n=54) were males and 74.6%(n=262) were females. According to the year of study wise distribution, 20.2%(n=71) were from first year, 13.1%(n=46) were from second year, 12.8%(n=45) were from third year, 39.9%(n=140) were from fourth year and 4%(n=14) were from final year. About 82.3%(n=289) participants were living at home and 7.7%(n=27) were living in hostels.

When asked that what type of physical activity did they perform 48.4%(n=140) said walking, 3.1%(n=11) were jogging, 6.8%(n=24) replied outdoor games, 14.2(n=50) responded as other physical activities and 17.4%(n=61) were doing no physical activity. When asked what was the duration of their physical activity, 15.7%(n=55) were doing 0 minutes/day, 43.6%(n=153) were doing less than 30 minutes/day, 23.4%(n=82) were doing from 31 to 60 minutes/day and 7.4%(n=26) were doing more than 60 minutes/day. When asked how many days in a week did they do physical activity, 15.4%(n=54) said 0 days, 7.7%(n=27) said 1 day, 39.6%(n=139) said 2 to 4 days, 13.1%(n=46) said 5 to 6 days and 14.2%(n=50) said every day. When asked what in their opinion should be the reason for exercising, 64.7(n=227) said fitness, 12%(n=42) said stamina, 9.1%(n=32) said to lose weight and 4.3% (n=15) said that they had no idea. When the participants were asked what in their opinion was the reason for inactivity, 49.9%(n=175) said laziness, 21.4%(n=75) said lack of time, 9.7%(n=34) said exhaustion and 6%(n=21) said lack of facility. When asked how much time did they think they spent sitting watching TV, using cell phone or computers in one day, 0.6%(n=2) said 0 minutes/day, 2.8%(n=10) said less than 30 minutes/day, 13.1%(n=46) said 30 to 60 minutes/day, 22.5%(n=79) said 61 to 120 minutes/day, 20.5%(n=72) said 121 to 180 minutes/day and 30.5%(n=107) said more than 180 minutes/day. When asked how physically active would they rate themselves compared to an average university student, 7.4%(n=26) said not at all, 9.4%(n=33) said somewhat not, 18.5%(n=65) said somewhat, 48.1(n=169) said average and 6.6%(n=23) said very. When the participants were asked whether they have any medical condition that prevented them from exercising ,5.7%(n=20) said yes, 79.2%(n=278) said no and 5.1%(n=18) said no idea. When asked whether they have any mental health issues, 26.2%(n=92) said that they had anxiety, 8 %(n=28) had depression while 55.8%(n=196) had no mental health issues. When asked whether any of their family members carry out physical activity, 5.7%(n=20) said never, 18.2%(n=64) said rarely, 33.9%(n=119) said a few times, 22.2%(n=78) said often and 10%(n=35) said always. When asked did their family members encourage them to be physically active, 4.6%(n=16) said never,11.4%(n=40) said rarely, 19.4%(n=68) said a few times, 21.9%(n=77) said often and 32.8%(n=115) said always. When the participants were asked that which type of activity did they prefer, 46.2%(n=162) said brisk walk, 21.7%(n=76) said gym workout, 17.7%(n=62) said sports and 4.6%(n=16) said that they did not prefer any physical activity. When asked for how long did they study in each day, 2.8%(n=10) said 0 hours/day, 29.1%(n=102) said 1 to 2 hours/day, 27.6%(n=97) said 3 to 4 hours/day,14%(n=49) said 4 to 5 hours/day and 16.5%(n=58) said 6 hours or more/day. When asked what was their method of studying, 73.5%(n=258) said sitting, 8.8%(n=31) said lying down and 7.7%(n=27) said walking. When asked whether they think they were overweight or obese,19.1%(n=67) said yes, 59.3%(n=208) said no and 11.7%(n=41) said maybe. When asked how frequent was daily intake of meal throughout a day, 2.8%(n=10) said once a day, 21.9%(n=77) said twice a day , 54.7%(n=192) said thrice a day and 10.5%(n=37) said more than three meals a day. When the participants were asked whether any familial diseases were running in their family, 25% (n=90) had diabetes, 17.7%(n=62) had hypertension, 5.7%(n=20) had obesity and 5.4%(n=19) had diabetes plus hypertension. When asked how often did they consume caffeine (tea, coffee) a day, 21.7%(n=76) said none, 22.5%(n=79) said once a day, 35.3%(n=124) said twice a day,7.7%(n=27) said three times a day and 2.8%(n=10) said more than three times a day. When the participants were asked which diet were they currently on, 66.1%(n=232) said balanced diet, 18.2%(n=64) said heavy diet (fast foods and dairy products) and 5.7%(n=20) said light diet (mostly salads and fresh fruits). When asked how did they best define their appetite, 24.2%(n=85) felt hungry most of the time, 8%(n=28) hardly ever felt full, 46.7%(n=164) felt satisfied most of the time and 11.1%(n=39) did not feel hungry at all. When asked whether they have their breakfast, 73.8%(n=259) said yes and 16.2%(n=57) said no. Out of those having breakfast , 55%(n=193) had it every day and 31.1%(n=109) had it sometimes. When asked what was their main meal of the day, 13.4%(n=47) said breakfast, 40.5%(n=142) said lunch while 36.2%(n=127) said dinner. When asked about the frequency of their fast food consumption, 2%(n=7) had it daily, 15.7%(n=55) had it on alternate days, 61%(n=214) had it weekly and 11.4%(n=40) did not have fast food at all. When asked how often did they dine outside, 1.7%(n=6) said daily, 17.9%(n=63) dined out weekly, 29.6%(n=104) responded by saying monthly while 40.7%(n=143) replied as dining out rarely. When asked whether they were habitually sleeping late at night, 61.8%(n=217) said yes while 28.2%(n=99) said no. When asked how many hours did they take sleep daily, 13.7%(n=48) said 4 to 6 hours, 48.4%(n=170) said 6 to 8 hours, 24.5%(n=86) said 8 to 10 hours and 3.4%(n=12) said more than 10 hours. When asked whether were they fond of taking spicy and sodium rich (high salt containing) foods, 49.3%(n=173) said yes and 40.7%(n=143) said no.

When asked whether they take milk and dairy products daily as part of their diet, 40.7%(n=165) said yes and 43%(n=151) said no.

When asked whether they take dietary fibers in the form of vegetables, fruits, psyllium husk etc, 70.7%(n=248) said yes and 19.4%(n=68) said no.

Figure 1

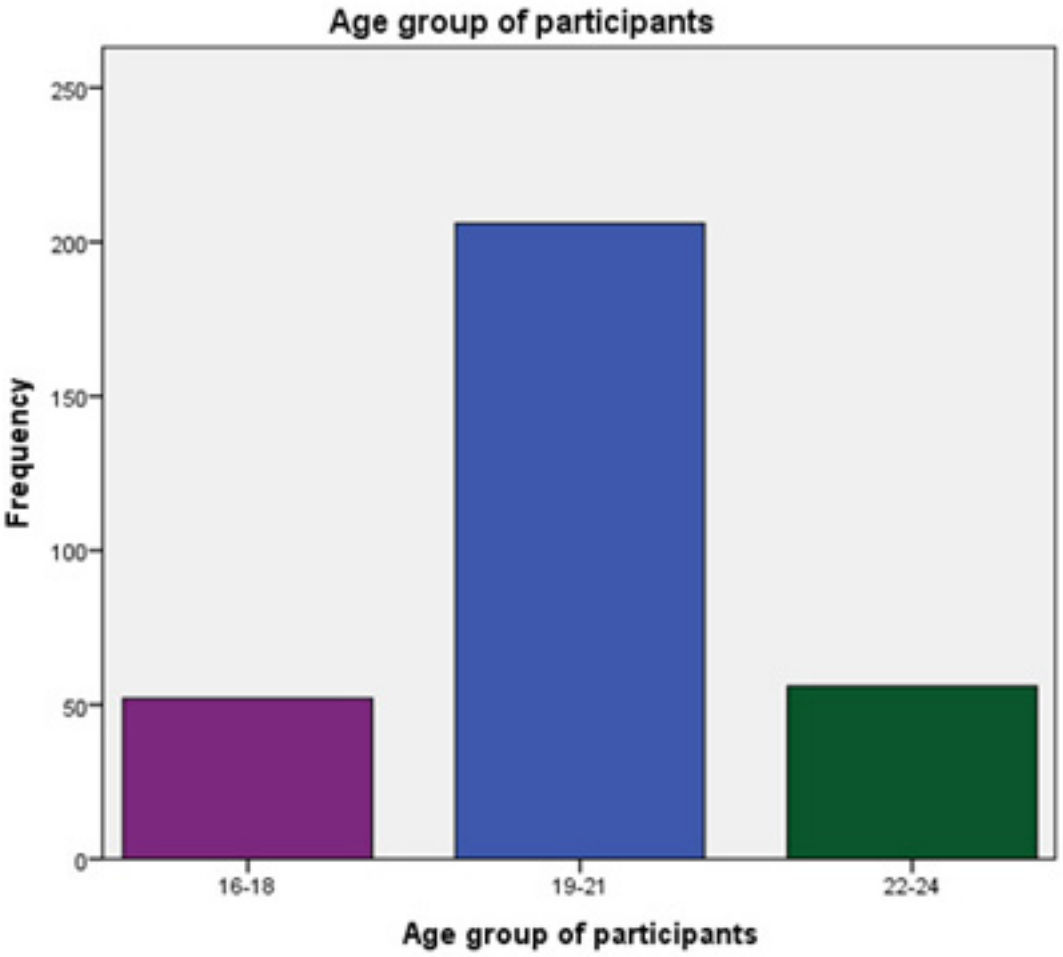

Figure 1 showing that out of the 316 participants the age ranges of participants were: 9.4%(n=33) were 16 to 18 years old,54.4%(n=191) were 19 to 21 years old and 26.2% (n=92) were aged 22 to 24 years.
Figure 2

Figure 2

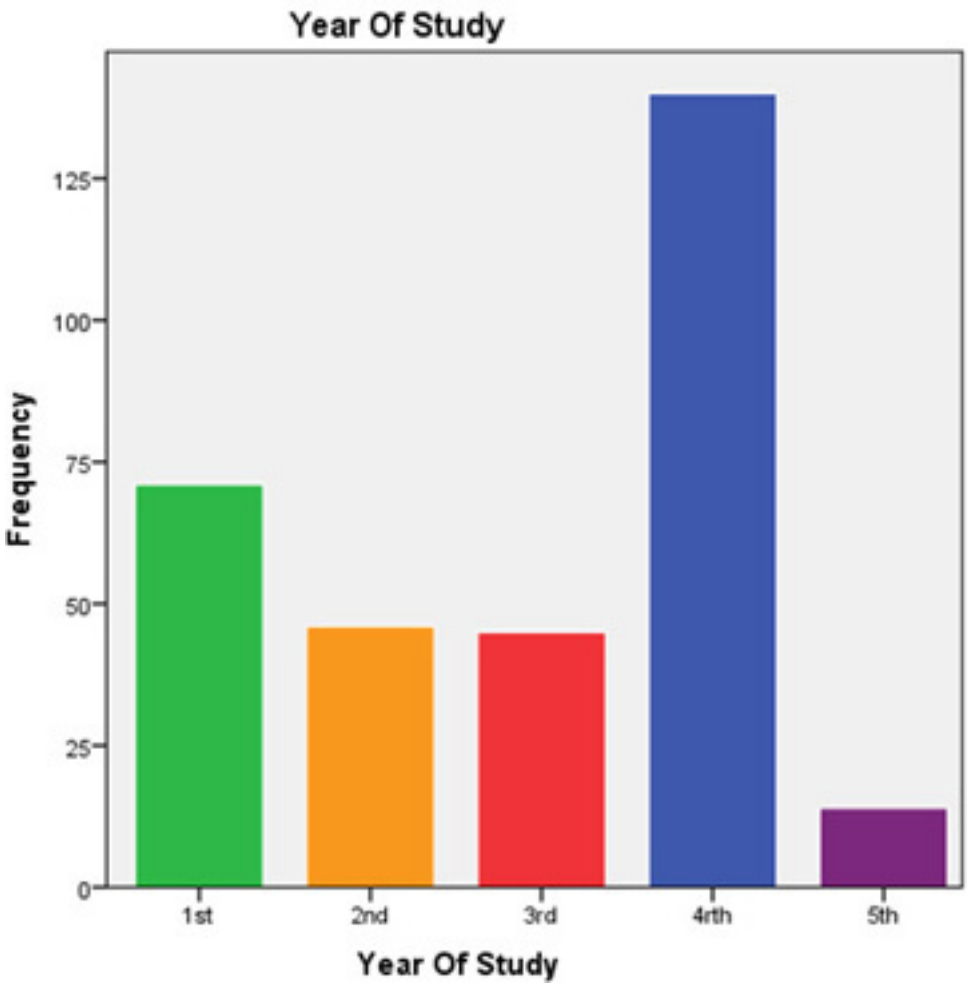

Figure 2 showing year of study distribution, 20.2%(n=71) were from first year, 13.1%(n=46) were from second year, 12.8%(n=45) were from third year, 39.9%(n=140) were from fourth year and 4%(n=14) were from final year

Figure 3

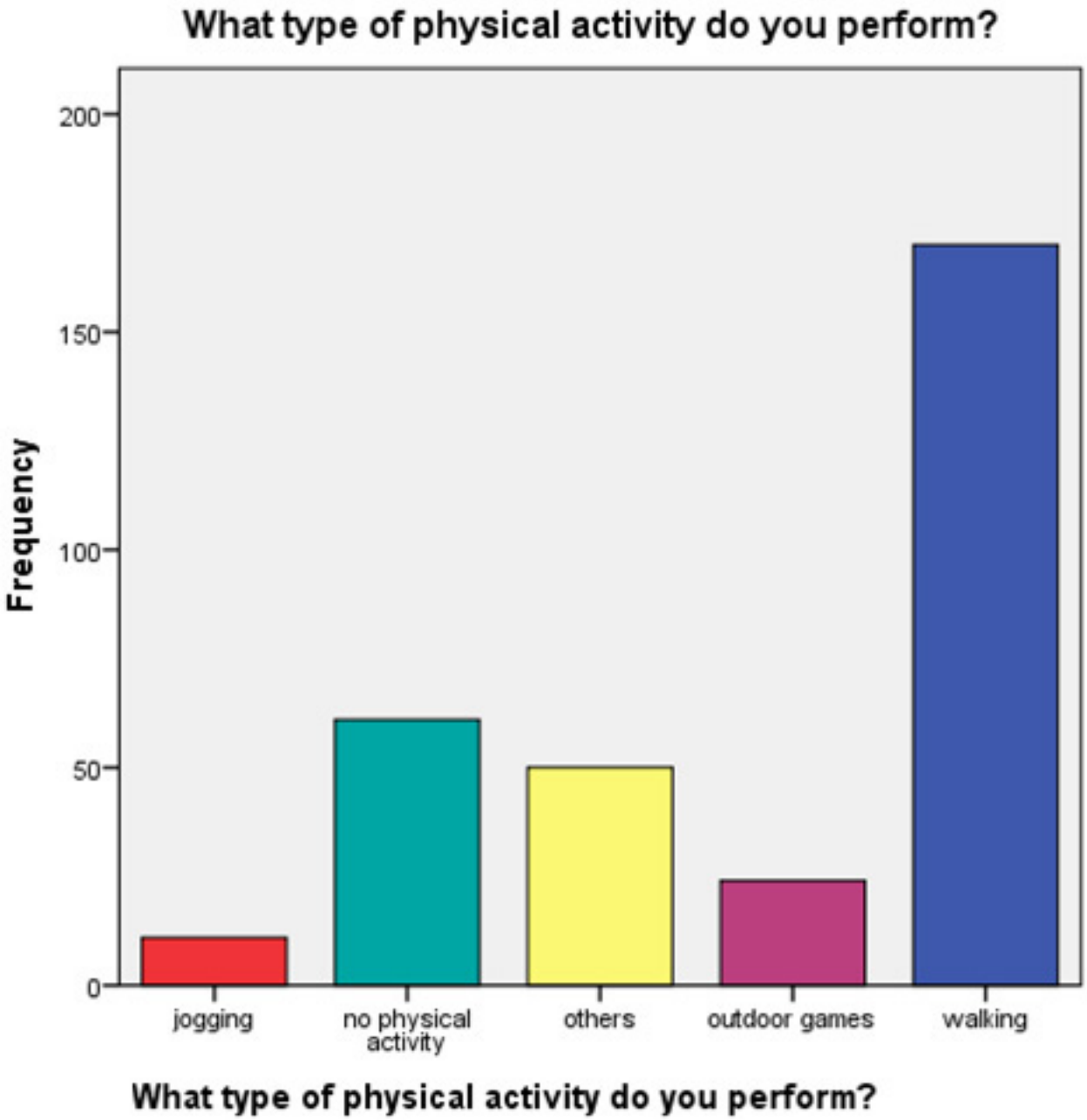

Figure 3 showing that when asked what type of physical activity did they perform, 48.4%(n=140) said walking, 3.1%(n=11) were jogging, 6.8%(n=24) replied outdoor games, 14.2(n=50) responded as other physical activities and 17.4%(n=61) were doing no physical activity.

Figure 4

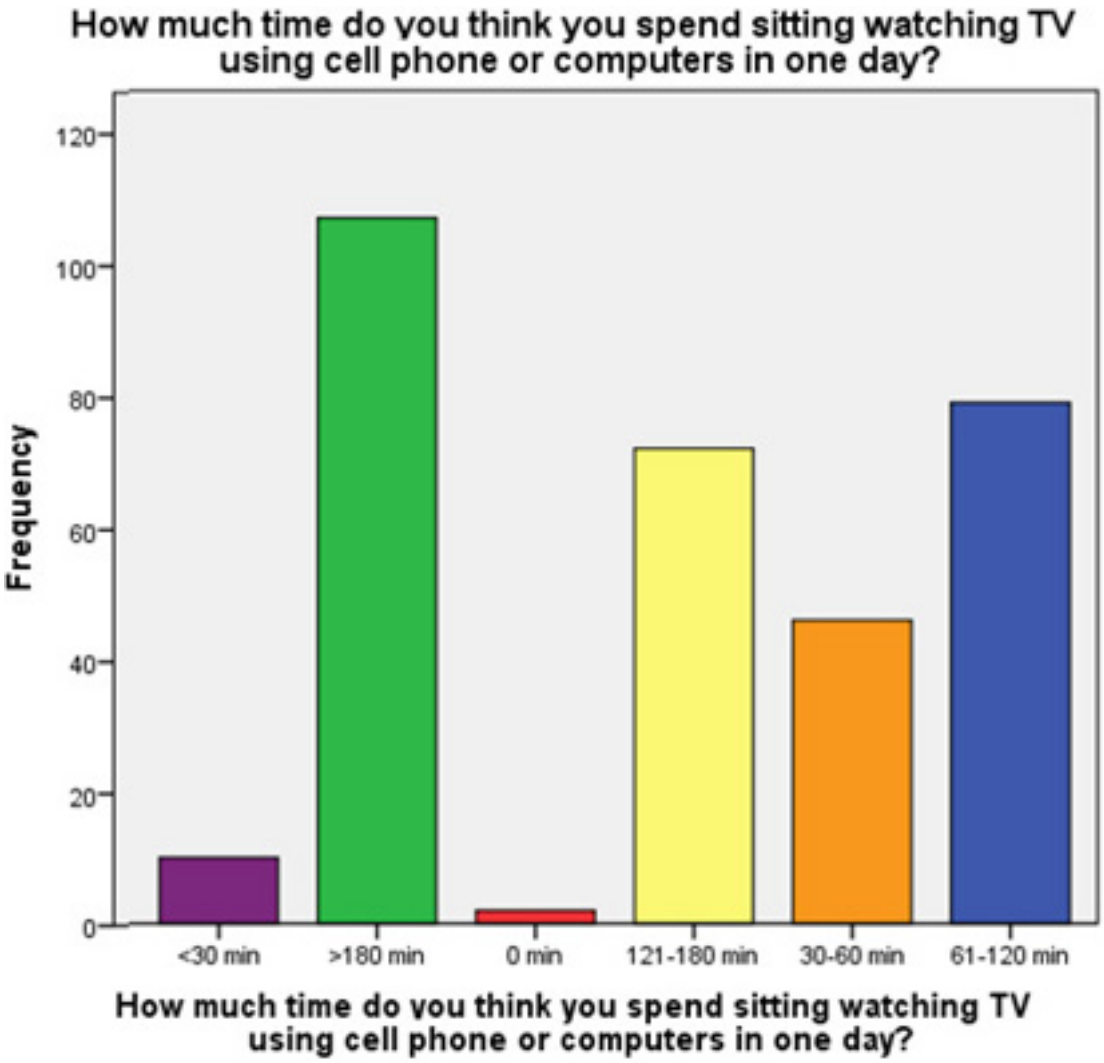

Figure 4 showing the amount of time spent by the participants sitting watching TV, using cell phone or computers in one day, 0.6%(n=2) said 0 minutes, 2.8%(n=10) said less than 30 minutes, 13.1%(n=46) said 30 to 60 minutes, 22.5%(n=79) said 61 to 120 minutes, 20.5%(n=72) said 121 to 180 minutes and 30.5%(n=107) said more than 180 minutes.

Figure 5

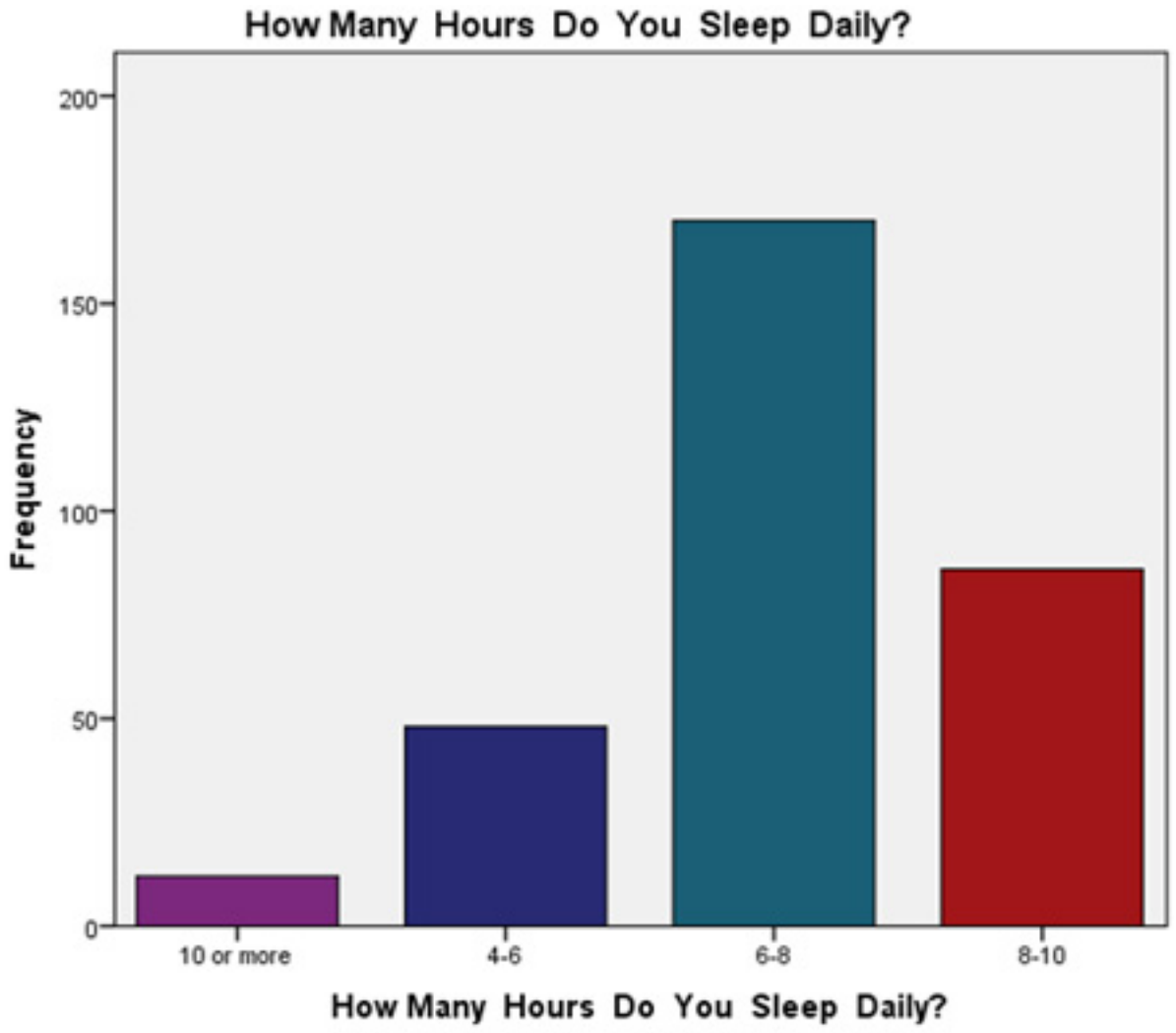

Figure 5 showing that when asked how many hours did the participants take sleep daily, 13.7%(n=48) said 4 to 6 hours, 48.4%(n=170) said 6 to 8 hours,24.5%(n=86) said 8 to 10 hours and 3.4%(n=12) said more than 10 hours.

Figure 6

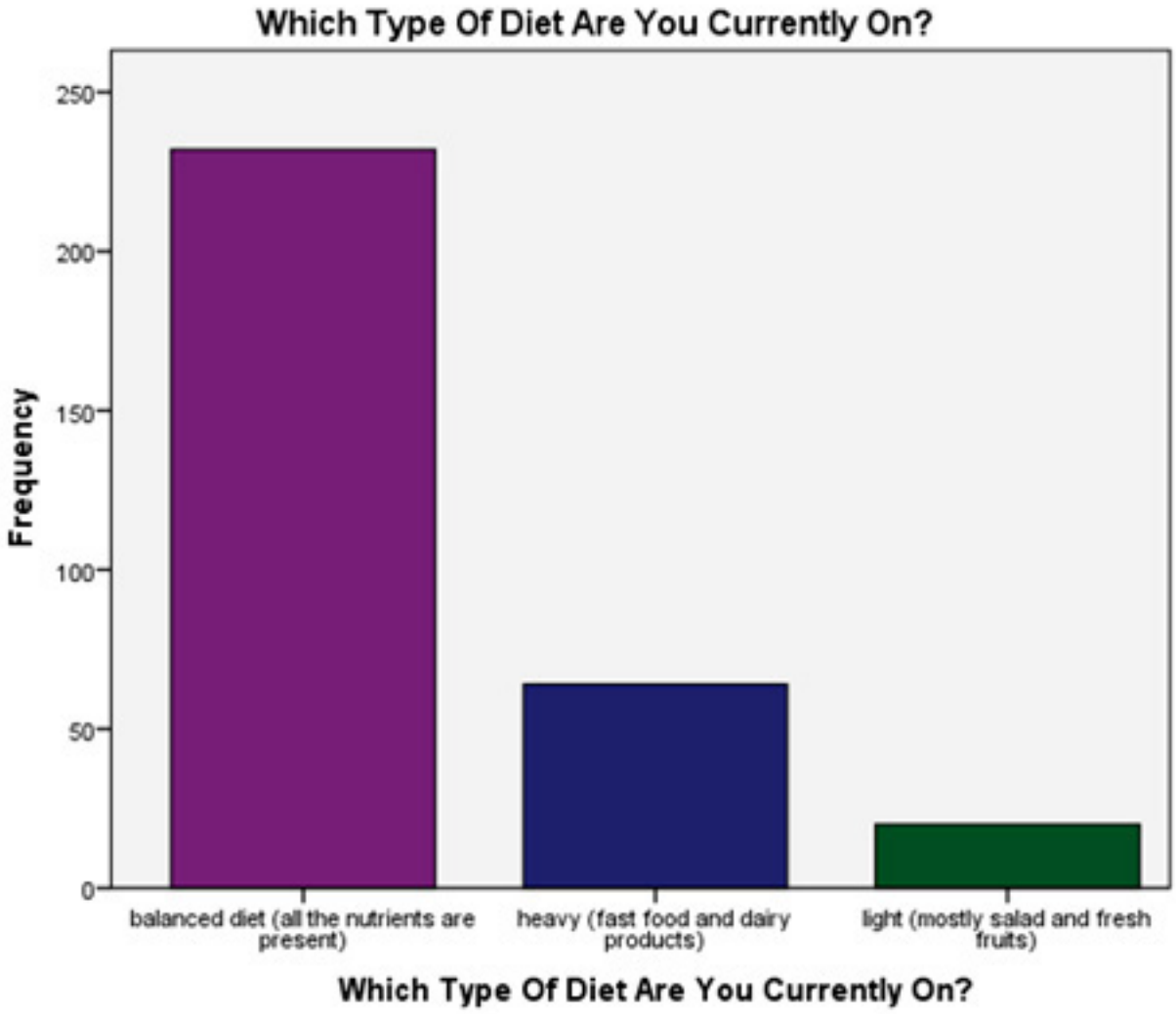

Figure 6 showing that when the participants were asked which diet were they currently on, 66.1% (n=232) said a balanced diet, 18.2% (n=64) said a heavy diet (fast foods and dairy products) and 5.7% (n=20) said a light diet (mostly salads and fresh fruits).

Figure 7

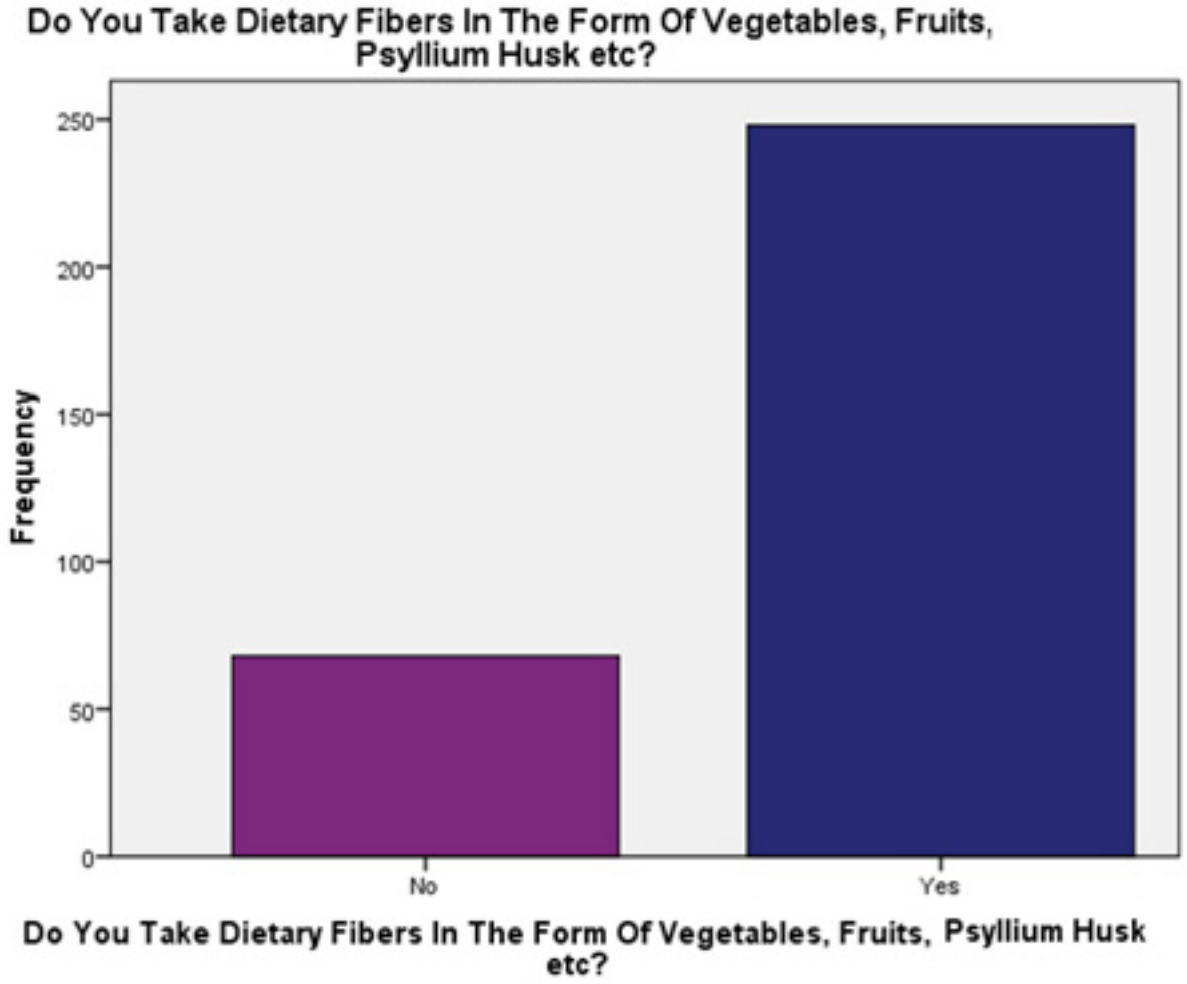

Figure 7 showing the response of participants when asked whether did they take dietary fibers in the form of vegetables, fruits, psyllium husk etc, 70.7%(n=248) said yes and 19.4%(n=68) said no.

Discussion

The findings of this research have given important information about the lifestyle of undergraduate medical students in Karachi. The habits of the participants regarding their dietary patterns and physical activity eventually will lead towards their health status in future when they will be working as fully fledged doctors. In this study it was found that among the 316 participants 15.4% were males and 74.6% were females. This was similar to the findings of a study in Brazil in which out of 250 participants, 55% were females(13). In this study it was found that the type of physical activity performed by participants was; 48.4% were walking, 3.1% were jogging, 6.8% were doing outdoor games, 14.2 responded other physical activities and 17.4% were doing no physical activity. These were similar to findings of a study in the USA. Students who were doing aerobic exercise and strength training habits appeared less likely to experience burnout and to have higher QOL (14). This study showed some participants spending too much time in front of television and cell phones .Regarding the amount of time spent by the participants sitting watching TV, using cell phone or computers in one day, 0.6%(n=2) did not spend any time, 2.8 spent less than 30 minutes, 13.1% spent 30 to 60 minutes,22.5% spent 61 to 120 minutes, 20.5% spent 121 to 180 minutes and 30.5% spent more than 180 minutes. These findings were similar to a study done in Saudi Arabia which showed that lifestyle of the majority of the students was: did not sleep enough, did not exercise, consumed fast food, and spent much time in usage of a cellphone, which are common habits among medical students of both genders. These habits have a significant impact on their overall satisfaction of life and may affect their academic performance and general health. (15)

In this study it was found that majority of participants were having an adequate amount of sleep. About 13.7% slept for 4 to 6 hours, 48.4% slept for 6 to 8 hours, 24.5% slept for 8 to 10 hours and 3.4% slept for more than 10 hours. These findings were contrary to a study conducted in Poland which showed unhealthy sleep patterns of Polish Medical students (16). This study showed that the majority of students have a balanced diet. When the participants were asked which diet were they currently on, 66.1% said a balanced diet, 18.2% said a heavy diet (fast foods and dairy products) and 5.7%(n=20) said a light diet. These findings were slightly different from the findings of a study conducted in Saudi Arabia which showed that contrary to the expectations and regardless of studying in medical

college, the medical students; both male and females at different academic levels were having major bad dietary habits and a lifestyle that is comparable to the general population in the kingdom(17).

Conclusion

Medical students are future doctors and the responsibility of maintaining the health of general population at large rests on their shoulders. They should be the role models for the community in maintaining a healthy lifestyle. The findings of this study have shown that a lot needs to be done on the part of our future doctors in revisiting their lifestyle, especially with regard to their dietary patterns and physical activity. An adequate proportion of our undergraduate medical students are trying their level best to take a balanced diet and engage in physical activity for maintaining good health. These students should act as enablers to help out their fellow medical students who are not so careful about their lifestyle.

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