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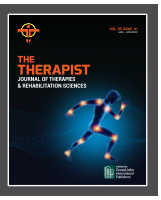

**Original Article**

# Awareness of Dietary Habits and Balanced Lifestyle Among Physical Therapy Students

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## ABSTRACT

Obesity has now-a-days became global epidemic and the fifth leading cause of death. A strong relation has been observed between obesity and mortality among the general population **Objective:** To observe the nutritional status of the food intake in physical therapy students to make a guideline to modify the dietary habits. **Methods:** A cross-sectional study conducted in January 2022 to June 2022 among the students at Dow University of Health Sciences (DUHS), Karachi. The minimum sample size was calculated as 75. A self-designed questionnaire was used to collect data from the students. IBM SPSS Version-26 was used for data analysis. **Results:** The average weight and height of the students was 52.8 ± 9.5 SD (kg) and 5.34 ± 0.27 SD (feet). The BMI was measured as (height)$^2$ / weight. The mean BMI calculated was 20.4 ± 3.4 SD. Based on the BMI, the frequency of overweight students was 13 (8.2%) and obese were 2 (1.3%). Remaining 52 (32.9%) were under- weight. The majority of students i.e., 82.2% reported that they eat two to three meals per day. Consumption of fruits and vegetables was least common. Less than one-fourth of the students said that they intake fruits on regularly. Snack consumption other than regular meals was about 21.5% among students. **Conclusions:** Students were found to have normal weight. The current study indicates that most of the students were well aware and concerned of obesity and over-weight and they tried to maintain their body weight by controlling diet.

## INTRODUCTION

Obesity has now-a-days became global epidemic and the fifth leading cause of death [1]. Globally around more than two million people were dying due to being obese or over-weight in a calendar year [2]. Over-weight means the excess of body fats while obesity means the huge amount of fats present in body [3]. A strong relation has been observed between obesity and mortality among the general population [4]. Chronic diseases like hypertension, coronary heart disease, hyperlipidemia, hypertension, gallbladder disease, diabetes mellitus and different types of cancers are associated with obesity [5]. In developed and developing countries the harms occurring due to obesity is growing at an alarming stage [6]. In the United States, obesity was up to 40% among the US adults [7]. The obesity has increased thrice in the developing countries particularly among populations that have a sedentary lifestyle involving less physical activity and over expenditure of cheap energy dense food affecting children and adolescence over the last 20 years [8]. In Asia, Thailand has maximum rates of adult obesity due to a combination of a sedentary lifestyle and high utilization of foods filled with sugar and little nutrients [9]. It was estimated that, in 2019, almost half of the children living in Asia under 5 years of age were over-weight or obese. According to the World Health organization (WHO), obesity was found to be more common among women than men [2, 3]. A study showed that in The

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National Health Survey of Pakistan, in 1990-1994 showed that 1% of population was reported to be obese [8]. A recent study observed that prevalence of over-weight or obesity was around 46% in Pakistan [10]. Another study roughly estimated that about 52% of over-weight and 73% of obese people does not even know about their problem and consider it as normal [3]. Obesity is a state of abnormal and excess fat deposition in adipose tissues to the point that can have adverse effects on health 3. The alteration in the diet (especially fast-food consumption) has become more westernized is one of the main causes of obesity. College students are prone to poor diet resulting in body weight gain [11, 12]. The rapid increase of Obesity and overweight especially in younger generation is a common problem in developing countries due to inappropriate diet and inactive lifestyle [8]. Limited resources are available in Pakistan to overcome this issue. Therefore, there is need to promote Health education regarding, diet exercise and other related topics in medical schools [12]. The rationale of the current study was to document the nutritional content of the food intake in physical therapy students to make a guideline to modify the dietary habits and to prevent the risk associated with obesity among the students. Thus, the purpose of this study to provide awareness of obesity and dietary habits among physical therapy students at medical university, Karachi.

## METHODS

A cross-sectional study conducted in January 2022 to June 2022. The data were collected from the students of Doctoral of Physiotherapy (DPT) at the institute of Physical Medicine and Rehabilitation (IPM & R), Dow University of Health Sciences (DUHS), Karachi. The minimum sample size was calculated as 75 by taking 95% confidence coefficient, 5% as the margin of error, and 5.1% as the prevalence of obesity in a large-scale Pakistan Panel Household Survey [13]. In our study we targeted more than twice the required sample size due to the non-response. A sample of 158 students of age 19-38 years were included in the study. The students who carry out the inclusion criteria of age and agreed for taking part were selected for this study from Physical Therapy Department, IPM&R, DUHS. The exclusion criteria were the students other than physical therapy department. Data were collected using the non-probability purposive sampling technique. The response rate among students was high. A consent was taken from the students prior to the data collection. A self-designed questionnaire was used to collect data from the students. Questionnaire contains ten questions of different types such as close ended and multiple-choice questions. Data collection were done in two steps. In the first step, questionnaire was filled by students and in second step anthropometric measurements were taken. Smoking and eating habits were asked from the students. The designed questionnaire was taken from an already published study where the authors standardized their questionnaire to use among university students. The students were told about the objectives of the study before the collection of data. Weight, height and body mass index (BMI) were measured after the questionnaire filling. Height was measured using a metal ruler and weight was measured using measuring scale. Students were asked to take off the shoes and socks, with head straight, feet together, knee straight, heels, buttocks and shoulder blades are in contact with the vertical surface of the scale. The BMI was measured as (height)$^2$ / weight. According to National Institutes of Health (NIH), adults were classified based on BMI as underweight (BMI < 18.5), normal (BMI= 18.5 – 24.9), overweight (BMI = 25 – 29.9), or obese (BMI >30). IBM SPSS Version 26.0 was used for data analysis. Results were expressed as descriptive for the quantitative variables and frequency and percentages for categorical variables.

## METHODS

The data were collected from 158 students with mean age of 21.5 ± 2.3 SD (year). Among the total participants, the proportion of female participants was 135 (85.4%) and remaining 23 (14.6%) were male participants. The average weight of the students was 52.8 ± 9.5 SD (kg) and the average height of the students was 5.34 ± 0.27 SD (feet). The mean BMI calculated was 20.4 ± 3.4 SD. The results indicated that the most of the students 91 (57.6%) were found to have normal weight. The frequency of overweight students was 13 (8.2%) and obese were 2 (1.3%). Remaining 52 (32.9%) were under-weight. The demographic data is shown as follows (table 1).

**Table 1:** Demographic Characteristics of the Students

| Variables | Total |
|---|---|
| Number of Students | 158 |
| Male /Female | 23/135 |
| Age (Years) | 21.53±2.2 |
| Weight (Kg) | 52.79±9.47 |
| Height (Cm) | 5.34±0.27 |
| BMI | 20.36±3.37 |

Response related to eating habits, lifestyle, fruits and vegetable consumption, patterns of meal, smoking habits and fried food is shown in Table 2. About half of the students said that they take meals regularly. More than 2/3 of the students mentioned that they eat breakfast daily or thrice to four times in a week. The majority of students i.e., 82.2% reported that they eat two to three meals per day. Consumption of fruits and vegetables was least common. Less than one-fourth of the students said that they intake fruits on regularly. Snack consumption other than regular

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meals was about 21.5% among students. Routine eating with family and friends was observed among two-third of the students. Smoking was not common among students. About 97.5% of the students do not smoke, half of the remaining were ex-smokers and half were current smokers (Table 2).

**Table 2:** Questionnaire

| Questions | Levels | Frequency (%) |
|---|---|---|
| Do you take your meals regularly | Always | 61(38.6) |
| | Regular | 74(46.8) |
| | Sometimes | 23(14.6) |
| Do you take breakfast | Daily | 84(53.2) |
| | Three or four times per week | 43(27.2) |
| | Once or twice per week | 22(13.9) |
| | Rarely | 9(5.7) |
| How many times do you eat meals except snacks? | One time | 21(13.3) |
| | Two times | 71(44.9) |
| | Three times | 59(37.3) |
| | Four times | 7(4.4) |
| How often do you take snacks apart from regular meals | Daily | 34(21.5) |
| | Three or four times per week | 44(27.8) |
| | Once or twice per week | 37(23.4) |
| | Rarely | 43(27) |
| How often do you eat green colored vegetables | Daily | 22(13.9) |
| | Three or four times per week | 54(34.2) |
| | Once or twice per week | 64(40.5) |
| | Rarely | 18(11.4) |
| How often do you eat fruits? | Daily | 32(20.3) |
| | Three or four times per week | 49(31) |
| | Once or twice per week | 42(26.6) |
| | Rarely | 35(22.2) |
| How often do you eat fried food? | Daily | 23(14.6) |
| | Three or four times per week | 51(32.3) |
| | Once or twice per week | 59(37.3) |
| | Rarely | 25(15.8) |
| How do you eat with family? | Daily | 105(66.5) |
| | Three or four times per week | 17(10.8) |
| | Once or twice per week | 13(8.2) |
| | Rarely | 23(14.6) |
| What type of food do you think you should eat to have a balanced nutrition? | Mainly meat | 8(5.1) |
| | Mainly vegetables | 18(11.4) |
| | Meat, vegetables and other varieties of food | 123(77.8) |
| | Others | 9(5.7) |
| Please state your smoking history? | current smoker es- | 2(1.3) |
| | smoker | 2(1.35) |
| | Non smoker | 154(97.5) |

## DISCUSSION

Pakistan is facing the dual burden of communicable as well as non-communicable diseases. The contributing factor in the non-communicable disease being the consumption of high-density diet, sedentary lifestyle and physical inactivity which results in increased burden of over-weight and obesity [14]. In the study under discussion, the aim was to observe the prevalence of obesity which was found to be 1.3% and the prevalence of over-weight was 8.2%. The prevalence of under-weight was 32.9% which gave an idea about the awareness of obesity among students. The prevalence of obesity and over-weight was observed as 5.4% and 5.8% in Pakistan in a recent study whereas the proportion of under-weight population was 21.9%. [15]. When we look at the combine proportion of obesity and over-weight, the findings of this research were quite close to our results. Another study conducted in Pakistan reported that prevalence of obesity as 5.1% and the 22.2% was the prevalence of over-weight. The prevalence of obesity was seen as 4.8% which was relatively higher to our

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findings in a study conducted in Baluchistan, Pakistan [16]. A study observed the obesity among Peshawari adults as 8.0% [17]. In the underlying study, a low prevalence of obesity and over-weight was found. Quite opposed to our findings, the prevalence of obesity was around 20.8% to 27.9% and the prevalence of over-weight was around 29.0% to 46% among Pakistan adults [18, 19]. Another study reported that 46% of the participants were either obese or over-weight [20]. We observed that the female participants were comparatively more over-weight and obese. A study conducted in Northern areas of Pakistan showed that the obesity was more prevalent among women as compared to men. Study indicated that prevalence of obesity or over- weight was 14.1% for women while it was 13.5% for men [21]. The prevalence of over-weight was higher among girls i.e., 12.7% and the prevalence of over-weight was 9.9% among boys [14]. In various studies conducted in Pakistan, the prevalence of obesity and over-weight was more common among female population [15, 21]. However, there was observed a slight difference between the two. Fats or lipids were the third main macronutrient and important component in our diet. Usually, fats are rich in dairy products and meat. So far it has the most visible source and cause of obesity and other non-communicable diseases such as cardiovascular diseases and some type of cancer [14]. Keeping that in mind, minimum intake of these is essential. Our study results indicated that fruits and vegetables consumption was rare in 22.2% and 11.4% of the participants. The consumption of meat mainly was only among 5.1% of the participants.

## CONCLUSIONS

The awareness of obesity and its associated factors are necessary to reduce the risk of various non-communicable diseases. The current study indicates that most of the students were well aware and concerned of obesity and over-weight and they tried to maintain their body weight by controlling diet. The consumption of fruits and vegetables has remained an important component of their daily diet and most of the participants tried to control fat consumption. Other risk factors such as smoking was common among small proportion of participants.

## Authors Contribution

Conceptualization: RF
Methodology: UH
Formal analysis: MJ
Writing-review and editing: SB, RF

All authors have read and agreed to the published version of the manuscript

## Conflicts of Interest

The authors declare no conflict of interest.

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