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Research Article

**ASSESSMENT OF DIETARY PATTERNS IN MEDICAL  
STUDENTS OF RMC**<sup>1</sup>Dr. Haris Kamran, <sup>2</sup>Dr. Mehran Khan, <sup>3</sup>Dr. Muhammad Umar Shafique<sup>1</sup>Ex House Officer, Benazir Bhutto Hospital, Rawalpindi.<sup>2</sup>MO, BHU Hammed, Hazro, Attock.<sup>3</sup>MO, BHU Jarmot Kalan, Gujar Khan, Rawalpindi.**Abstract:**

**Background:** To determine the BMI, dietary pattern, and common health problems in relation to diet of the MBBS students of RMC. **Methods:** This descriptive cross-sectional study was conducted in the New Teaching Block of Rawalpindi Medical College, among a total of 200 students from the 3rd, 4th, and final years of MBBS, who filled out structured pro forma/questionnaires. Prior consent was taken from the respondents and their confidentiality was assured. The sampling technique used was non-probability convenient sampling, and SPSS version 21 was used for the statistical analysis. **Results:** In general, 41% of students took four servings of regular food in one day, while 49% took one serving of snacks in one day. More females took a mixed diet than males (68%), while more males had a meat-based diet (32). 71% students skipped a meal at least once a week, with 31% females skipping meals more than twice a week, and breakfast comprising 56% of all the meals skipped (more males skipping breakfast than females: males = 65%). 32% students had no milk intake at all. 46% students reported a decreased food intake due to stress. 44% students encountered GIT problems, with 12% having diarrhea more than twice a month. **Conclusion:** The results show that the majority of students were of normal BMI. Majority preferred homemade food and mixed diet. Some deficiencies in diet were observed, like a lack of milk intake, and source of food (hoteling), which were more common in males and boarders, and more associated with health problems.

**Keywords:** Diet, Dietary pattern, BMI, RMC**Corresponding author:****Dr. Haris Kamran,**

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## INTRODUCTION:

Poor eating habits is a major public health concern among young adults who experience transition into university life, during which they are exposed to stress and a lack of time [1,2]. Some common unhealthy eating patterns among young adults include meal skipping, eating non-homemade food, snacking, and fast food consumption.<sup>3,4</sup> Young adults are vulnerable to nutritional deficiencies and non-communicable diseases [3-8]. A study in China showed that only 7% of university students followed a healthy dietary pattern [9].

In a Japanese study, almost half of the dental students missed one of the three main meals [10]. A study in UAE revealed that 50% of medical students had unhealthy diet and high stress levels [11]. Another study conducted in Yugoslavia showed unhealthy eating habits and lifestyle among medical students [12]. Diet patterns of university students were found to be unhealthy, especially among boarders in a Glasgow study [13]. Changes in the living environment influenced their dietary habits [14,15].

A study in Karachi showed that more than 90% of the medical students experienced stress, which affected all aspects of their health, including diet [16]. As evident from a study done in Islamabad, almost 52% of the students were stressed, and this stress led to disturbances in their dietary pattern [2,17].

The nutritional knowledge of university students [18,19] and their food consumption patterns have received global attention [18,20-22]. A change toward a more favorable diet pattern is associated with improved body size and metabolic profile [23]. A study in Malaysia concluded that there was a need to promote healthy eating habits among young adults to achieve a healthy nutritional status [24].

No study has been conducted about the dietary patterns of medical student in Rawalpindi Medical College. This study is intended to know the current dietary habits of the medical students of RMC so that proper health education can be ensured, and policies made. Nutritional education can be used as a tool to improve the health status of the nation.

## SUBJECTS AND METHODS:

The aims and objectives of the study are to determine the BMI of medical students of RMC, to determine the dietary pattern of medical students in relation to their gender, to determine the dietary pattern of boarding and non-boarding students, to determine the dietary pattern of students in relation to their B.M.I, and to determine the common health problems of students in relation to their diet.

Some of the operational definitions as used in the study are as follows:

*Dietary pattern:* Multiple dietary components operationalized as a single exposure. This will be determined by identifying each component separately which are: type of meal (regular meal or snacks), food servings taken per day, skipping meal, food groups included in meals, and the source of meal.

*Type of meal:* It may be regular meal or snacks. Regular meal is a portion of food taken at some fixed time; it is usually larger than snacks. A snack is a small quick meal eaten between or in place of regular meal.

*Total food servings:* One serving is equal to: Grains = 1 ounce ( e.g. small chapati / small slice of bread, ½ cup cooked rice). Vegetable = ½ cup cooked potato. Meat = 2-3 ounce cooked meat. Cheese = 1 ounce or 1 thin slice. Fruit juice = ½ cup. Fat and oil = 1 tsp butter / margarine/oil.

*Skipped meal:* A meal which is missed or omitted due to any cause.

*Form of meal:* Form in which food is taken in regular meals and snacks e.g. Regular meal forms = Rice and curry, bread and curry, fast food. Snacks forms = packed or bakery item, fried item, fresh fruits item, low calorie item.

*Type of food group:* Category of food included in regular meal or snack e.g. meat, vegetables, cereals, mixed.

*Source of meal/food:* A place where meal is cooked e.g home, hotel, or packed food.

*BMI:* It is defined as the weight in kgs divided by height in meter square. Underweight <18.50. Normal 18.50-25. Overweight ≥25.00

*Health Problem:* State in which an organ/ system of body is not functioning as in a normal person.

*Effect of stress on diet:* It is the change in amount of food intake as a result of stress.

This descriptive cross-sectional study was conducted in the New Teaching Block of Rawalpindi Medical College, among a total of 200 students from the 3<sup>rd</sup>, 4<sup>th</sup>, and final years of MBBS, who filled out structured pro forma/questionnaires. Prior consent was taken from the respondents and their confidentiality was assured. The sampling technique used was non-probability convenient

sampling, and SPSS version 21 was used for the statistical analysis.

Some of the limitations faced during the study were time constraints, budget constraints (as increasing the sample size would have meant more expenses in the form of questionnaires), and the use of self-formulated questionnaires, which may not be very effective, instead of standard questionnaires for measuring balanced diet as formulated by researchers, such as the health eating index or diet quality index. The number of students with BMI>30 was only 1 so comparison of their dietary pattern with those having a normal BMI could not be done. There was an unequal participation of the students from different classes/years, so the results are not predictive of the entire student body of the college.

### RESULTS:

A total of 200 students participated in the study, comprising the 3<sup>rd</sup>, 4<sup>th</sup>, and final years of MBBS, out of which 82% were female and 18% were male. There were 56% non-boarders and 44% boarders. The BMI was divided as follows: underweight = 26%, normal = 68%, overweight = 6%. The results can be characterized into four groups: dietary pattern of students in general, dietary pattern of boarders and non-boarders, dietary pattern and its relation to BMI, and health problems in association with diet.

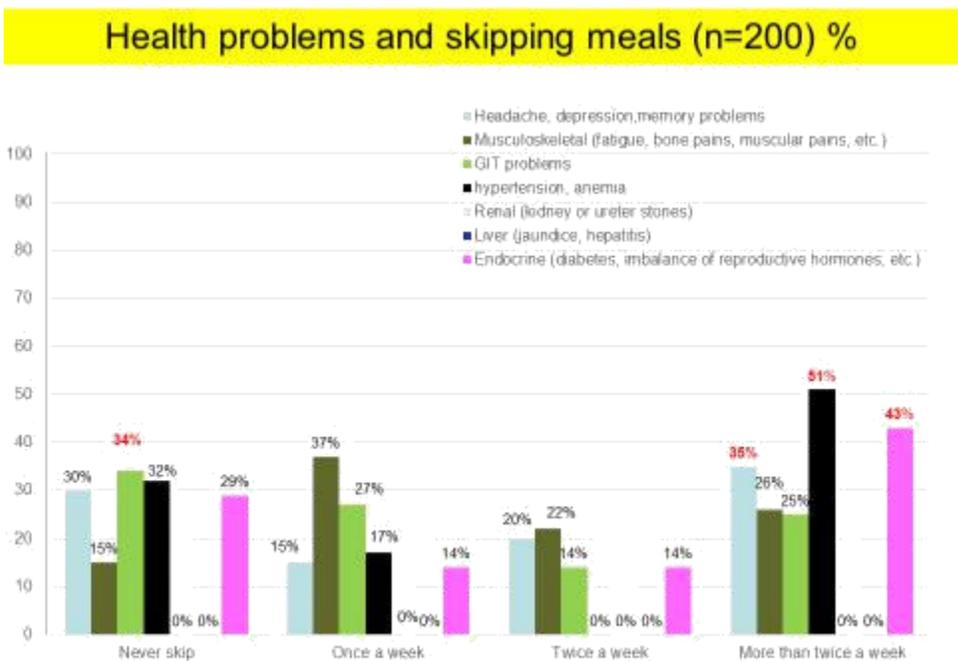
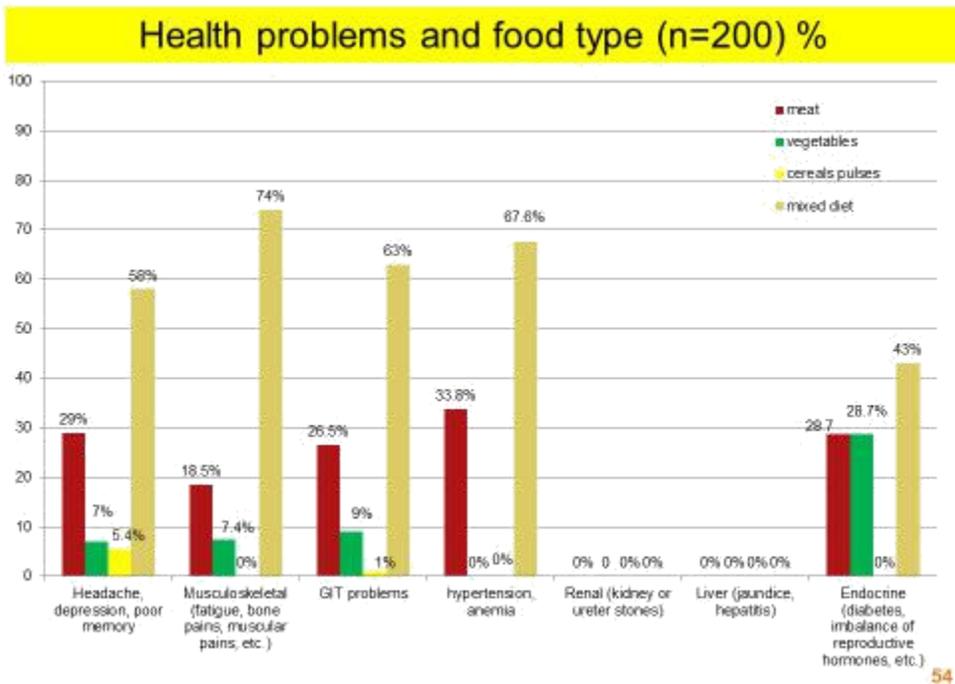
In general, 41% of students took four servings of regular food in one day, while 49% took one serving of snacks in one day. More females took a

mixed diet than males (68%), while more males had a meat-based diet (32). 71% students skipped a meal at least once a week, with 31% females skipping meals more than twice a week, and breakfast comprising 56% of all the meals skipped (more males skipping breakfast than females: males = 65%). 32% students had no milk intake at all. 46% students reported a decreased food intake due to stress. 44% students encountered GIT problems, with 12% having diarrhea more than twice a month.

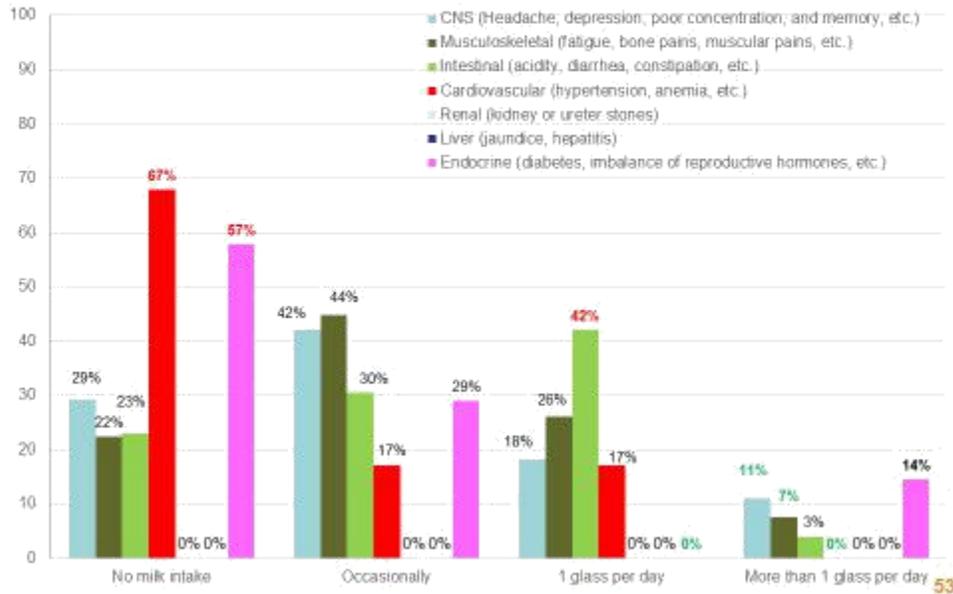
Comparing the dietary pattern of boarders with non-boarders, it is interesting to note that 66% of boarders skipped breakfast, whereas 44% non-boarders skipped dinner. More boarders had a complete lack of milk intake as compared to non-boarders (35% vs 21%). Unfortunately, 24.5% boarders encountered diarrhea more than twice a month.

For BMI in relation to dietary pattern, out of the students consuming mostly meat, 27% were overweight, whereas out of the students consuming mostly mixed diet, none was overweight. Of those consuming snacks, especially fried items, 55% were overweight. Majority of those who frequented hotels were overweight (36%).

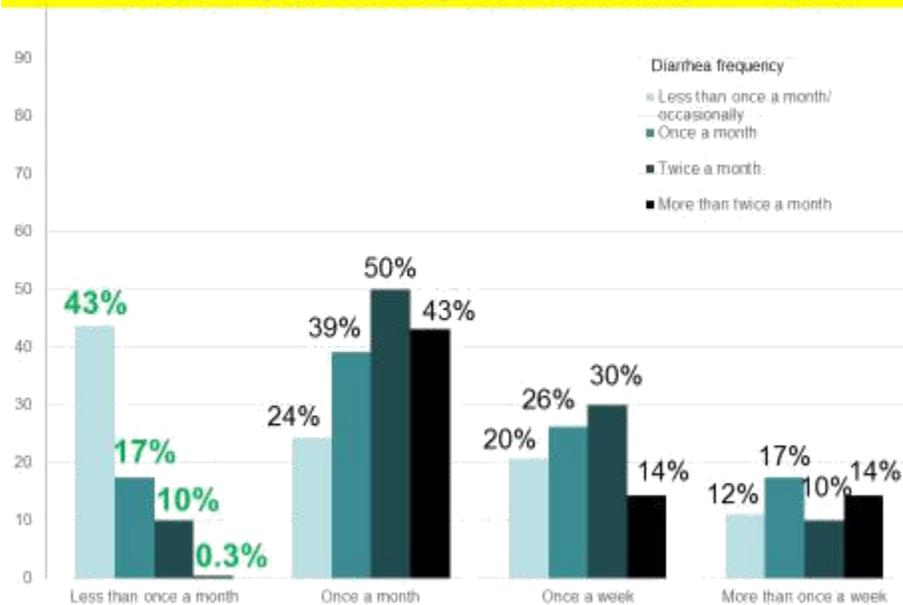
The following graphs show the correlation between dietary pattern and health problems:



Health problems and milk intake (n=200) %



Frequency of hoteling and diarrhea (n=200) %



**DISCUSSION:**

According to our study, 56% students skipped their breakfast. This goes in line with a Malaysian study which showed that the majority of students skipped breakfast regularly [1,2,25,26], due to stress and a lack of time [2,25].

Our study showed that only 6% of the students were overweight. This is in contrast to a study done at Medicina where 23% students were overweight [27], and a study done in Islamabad where 49% university students were overweight<sup>28</sup>, more commonly females [29].

Another research on Lebanese students showed fried fast food consumption was 73%, often due to its better taste and availability [30]. This is in contrast to our study, where only 39% students consumed fried fast food.

A study on university students of Karachi revealed 97% junk food consumption by students. A total of 41% students were overweight and junk food consumption was identified as its main cause [31]. However, our study showed that only 6% were overweight, although junk food consumption (i.e. fried or fast food, bakery, and packed food) was 76%. This less percentage of overweight students was may be due to less food servings taken in a day.

A study on French students showed high daily consumption of snacks among males [32]. This result is similar to ours, which shows that male students consume more snacks as compared to females who take more regular meals [33].

In our study, 32% students do not take milk, which was seen to be associated with health problems, with males taking less milk (64%) as compared to females (74%). A study of Islamabad gave different result: milk was taken more by males [34-37].

A study done on Chinese university students showed 48% students took vegetables mainly in their meals.<sup>9</sup> This percentage was only 7% in our study. Our study result is similar to a Malaysian study result where only 19% students consumed vegetables as main food course.<sup>24</sup> It was found that, although medical students had sufficient knowledge regarding good dietary habits, yet they failed to apply it into practice [25].

Our study showed that diarrhea was more prevalent in those eating more from hotels. A study of America showed that students who took more meals from cafeteria or outside their homes were having more diarrhea [38].

**CONCLUSION AND RECOMMENDATIONS:**

The results show that the majority of students were of normal BMI. Majority preferred homemade food and mixed diet. Some deficiencies in diet were observed, like a lack of milk intake, and source of food (hoteling), which were more common in males and boarders, and more associated with health problems.

It is recommended that there should be proper health education of students about the importance of balanced diet. Availability of healthy foods like fruits, fresh juices, and milkshakes at the college café and tuck shops at reasonable prices should be ensured to discourage the trend of fast foods. There should be an improvement in the food quality and hygienic conditions at hostel and college cafeteria to decrease the incidence of GIT problems. Students should be taught time management skills because “lack of time” and “poor time management” are major factors in skipping of meals. Stress and anxiety among students can be minimized by counseling since medical students face more stress than students of any other field do. The use of food labels, another form of communication, does influence dietary habits. Therefore, it should be put into effect. Lastly, there is a need to create awareness regarding the role of nutritionist in giving advice for underweight or overweight students.

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