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IMPACT OF BREAKFAST ON PHYSICAL ACTIVITY AMONG UNDERGRADUATE PHYSICAL THERAPY STUDENTS

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Introduction

Breakfast is widely acknowledged as a pivotal meal, lauded for providing essential sustenance and energy for daily activities (1). In the 1960s, renowned nutritionist Adelle Davis emphasized the importance of a substantial morning meal, laying the foundation for the recognition of breakfast as a cornerstone of healthy living (2). Contemporary scientific evidence has bolstered this understanding, revealing serious health consequences for those who routinely skip breakfast (3). Cahill et al. (2013) identified a significant 27% increase in coronary heart disease among North American men who omitted breakfast, while an overindulgence in high-fat breakfasts has been linked to atherosclerosis (4).

In the context of children, studies indicate that undernourished individuals experience increased school absenteeism, diminished attention, and more health problems compared to well-nourished counterparts (5). This underscores the need for further research, particularly in regions like the Pakistan where skipping breakfast is common among the youth. The results of such studies could inform health providers in developing policies and programs to enhance students' health and nutritional status (6). Notably, increasing breakfast consumption emerges as a potential public health intervention with positive effects on academic performance (7). While the paucity of studies exists, consistent evidence suggests that habitual breakfast consumption positively correlates with academic performance, as measured by school grades or standardized achievement tests (8).

The factors influencing breakfast habits encompass a range of outcomes, from school performance to BMI categories (9). Children who regularly consume breakfast demonstrate improved school attendance, attention, diet quality, and overall health (10). Moreover, breakfast is associated with healthier food choices, contributing to maintaining a healthful weight among children and adolescents (11). The link between breakfast and body mass index (BMI) reveals complex associations with lifestyle factors, such as physical activity and dietary choices (12). Notably, skipping breakfast may be linked to health-compromising behaviors, including smoking and frequent alcohol consumption. Moreover, the effects of skipping breakfast extend beyond immediate energy levels. It disrupts the body's fasting and eating rhythm, potentially leading to overeating later in the day (13). Physical inactivity is often intertwined with breakfast skipping, with implications

for overall health (14). Thus, the significance of breakfast consumption is not only evident in cognitive performance but also in maintaining a healthy lifestyle, including regular physical activity.

Research Objective

The primary objective of this research is to investigate the impact of skipping breakfast on the physical activity levels of DPT students. By exploring this relationship, the study seeks to provide targeted insights that can inform strategies to enhance the holistic well-being of this specific demographic group, contributing to the broader discourse on the significance of breakfast in promoting a healthy and active lifestyle.

Methodology

Study Design

The research employed a cross-sectional study design to investigate the physical activity levels among undergraduate Physical Therapy students.

Research Setting

Data collection took place at Dewan University and Isra Institute of Rehabilitation Sciences, providing a diverse representation of students from different academic backgrounds.

Duration of The Study

The study spanned six months after receiving approval from the ethical board, ensuring an adequate timeframe for comprehensive data collection and analysis.

Sample Size

A total of 200 undergraduate Physical Therapy students were included in the study, providing a robust sample for a comprehensive understanding of physical activity patterns among this population. Convenient, non-probability sampling was employed to select participants.

Inclusion and Exclusion Criteria

Inclusion criteria encompassed both male and female students from all academic years who willingly participated, while exclusion criteria excluded students not willing to participate and those with physical injuries.

Data Collection Tool

Data was collected using a validated modified questionnaire based on the International Physical Activity Questionnaire (2016), a widely recognized and standard instrument for assessing physical activity levels.

Data Collection Procedure

Two hundred questionnaires were distributed after obtaining informed consent from the participants. The questionnaire was explained, and data was collected in adherence to ethical considerations and participant confidentiality.

Data Analysis Procedure

Data analysis was conducted using SPSS (Statistical Package for the Social Sciences) software version 23. Descriptive statistics, including frequency and percentage, were calculated, and the findings were presented through tables and bar graphs for clear and concise interpretation.

Ethical Approval

The study received approval from the ethical board of Isra University. Confidentiality of participant information was strictly maintained throughout the study, emphasizing the ethical responsibility to protect the privacy and rights of the participants.

Results

The data comprises 200 participants, with varying ages ranging from 18 to 26. The distribution of participants across age groups is as follows: 18 years old (7%), 19 years old (21%), 20 years old (21%), 21 years old (16.5%), 22 years old (18.5%), 23 years old (9%), 24 years old (4%), 25 years old (2.5%), and 26 years old (5%). Among the participants, 47 (23.5%) were male, and 153 (76.5%) were females. The overall mean age of the participants is 20.77, with a standard deviation of 1.753 (table 1).

Table 1: Gender distribution and Age of the participants

Variables	Frequency	Percentage
Gender Distribution		
Male	47	23.5
Female	153	76.5
Mean Age	20.77	
Std. Deviation	1.753	

In the study, the participation of students is categorized by academic years, revealing that 74 (37%) students were from the first year, 41 (20.5%) from the second year, 49 (24.5%) from the third year, and 14 (7%) from the fourth year. Additionally, 22 (11%) students participated from the fifth year. The Body Mass Index (BMI) distribution indicates that 90 (45%) students fall into the underweight category (15-19.9), while 78 (39%) are classified as normal weight (20-24.9). Furthermore, 23 (11.5%) students are in the overweight category, and 9 (4.5%) fall into the obesity category. In terms of breakfast habits, 120 (60%) students reported eating breakfast, while 80 (40%) students do not include breakfast in their routine (table 2).

Table 2: Participant Characteristics by Academic Year, BMI, and Breakfast Habits

Variables	Frequency	Percent
Year of the study		
1st year	74	37.0
2nd year	41	20.5
third year	49	24.5
4th year	14	7.0
5th year	22	11.0
BMI		
Underweight (15-19.9)	90	45.0
Normal weight (20-24.9)	78	39.0
Overweight (25-29.9)	23	11.5
Obesity (30-34.9)	9	4.5
Did you eat breakfast		
Yes	120	60.0
No	80	40.0

Among the students who do not eat breakfast, the reasons vary: 46 (57.5%) cite a lack of time, 3 (3.75%) are focused on weight management, 2 (2.5%) attribute it to their family's breakfast habits, 3 (3.75%) express not having food available for breakfast, 9 (11.25%) indicate not feeling hungry, 10 (12.25%) mention a dislike for breakfast foods, 1 (1.25%) note the influence of friends' habits, and 6 (7.5%) have other reasons (figure 1).

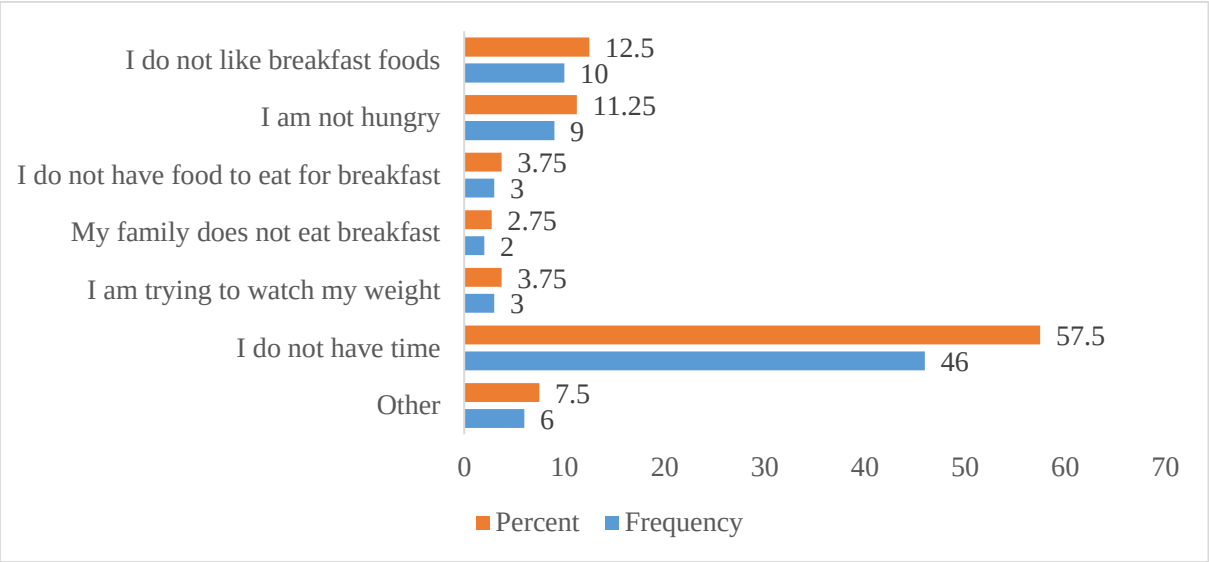

Figure 1: Distribution of Reasons for Skipping Breakfast Among Students

The impact of not eating breakfast is diverse among students: 17 (21.25%) experience feelings of hunger, 19 (23.75%) report tiredness, 10 (12.5%) struggle with attention in class, 9 (11.25%) suffer from headaches, 10 (12.5%) lack energy, 4 (5%) encounter stomachaches, 4 (5%) express feelings of grumpiness, and 7 (8.75%) undergo other emotional responses. Notably, a total of 80 (40%) students abstain from eating breakfast, while remaining students eat breakfast (figure 2).

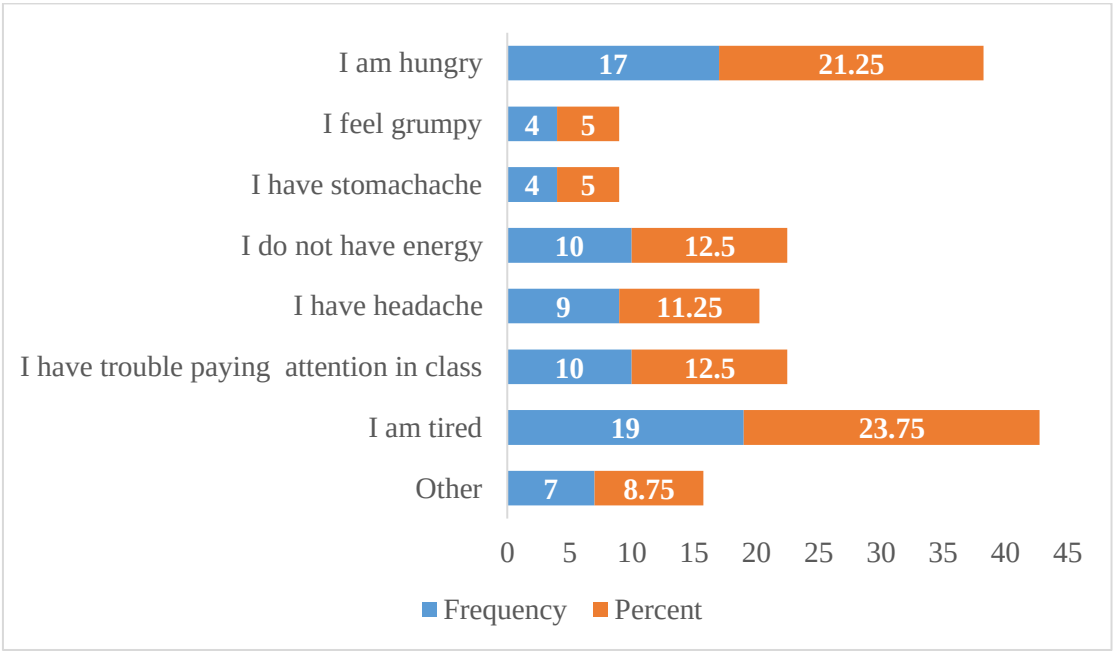

Figure 2: Various Effects Experienced by Students Who Skip Breakfast

A predominant portion of the student body, precisely 62.5%, exhibits low levels of physical activity. Additionally, 22.5% of students engage in a moderate amount of physical activity, while a commendable 15.0% demonstrate high levels of physical activity (figure 3).

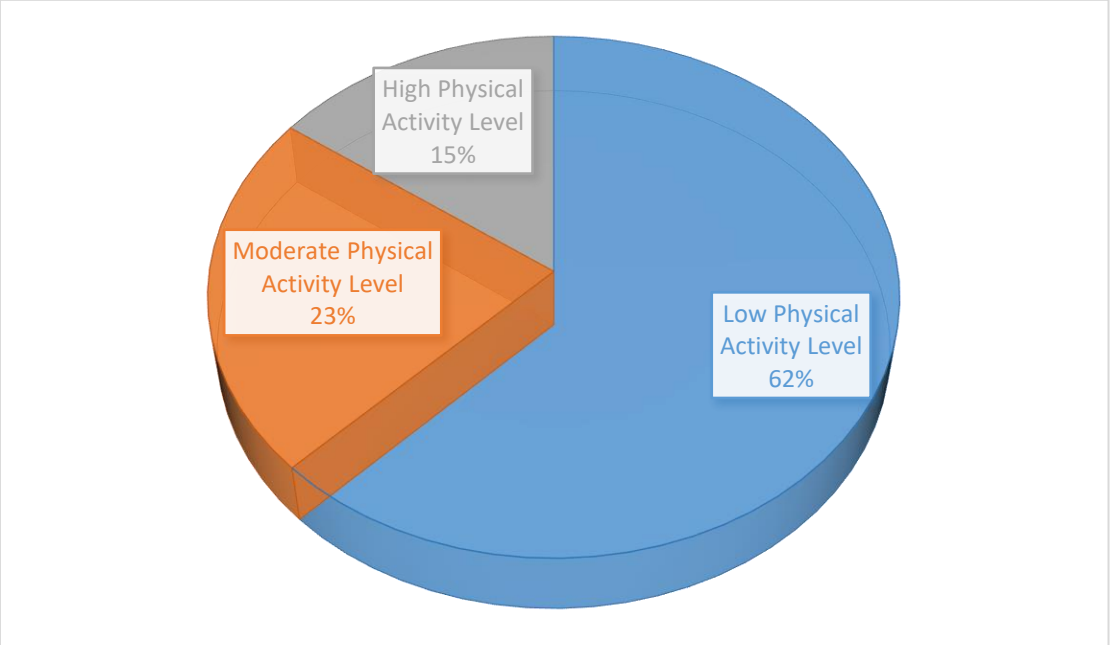

Figure 3: Distribution of Low, Moderate, and High Physical Activity Levels Among Students

In the underweight (BMI 15-19.9) category, 58 students exhibit low physical activity, 20 students engage in moderate physical activity, and 12 students maintain high physical activity levels. Among those with a normal BMI, 48 students with low physical activity, 16 with moderate physical activity, and 14 with high physical activity are noted. In the overweight BMI category, 14 students have low physical activity, 5 have moderate physical activity, and 4 have high physical activity. In the obese I BMI category, 5 students display low physical activity, 4 have moderate physical activity, and none have high physical activity. In the initial year, 57 students exhibited low physical activity, while 13 and 4 students engaged in moderate and high physical activity, respectively. Moving to the second year, the figures shifted to 23 students with low physical activity, 13 with moderate activity, and 5 with high activity. In the third year, 24, 17, and 8 students fell into the categories of low, moderate, and high physical activity. Year four saw 8 students with low activity, 1 with moderate activity, and 5 with high activity. Finally, in the fifth year, 13 students displayed low physical activity, 1 engaged in moderate activity, and 8 participated in high physical activity. Among the 74 students who consume breakfast, the majority exhibit low physical activity (74), while 24 and 22 students demonstrate moderate and high physical activity, respectively. On the other hand, among the 51 students who skip breakfast, a significant portion displays low physical activity (51), while 21 and 8 students manifest moderate and high physical activity, respectively (table 3).

Table 3: Relationship Between BMI, Academic Year, and Breakfast Habits with Physical Activity Levels

Variables	Level of Physical Activity			Total
	Low	Moderate	High	
BMI				
Underweight (15-19.9)	58	20	12	90
Normal Weight (20-24.9)	48	16	14	78
Overweight (25-29.9)	14	5	4	23
Obesity (30-34.9)	5	4	0	9
Year of theStudy				
1st year	57	13	4	74
2nd year	23	13	5	41
3rd year	24	17	8	49
4th year	8	1	5	14

5th year	13	1	8	22
Did You Eat Breakfast				
Yes	74	24	22	120
No	51	21	8	80

Discussion

Breakfast has significantly different impacts on physical activity. The majority of kids were underweight, followed by normal weight, overweight, and obese students. The majority of students have breakfast, while others do not. While some students disclosed that they dislike breakfast items, the majority of students said that they do not have time to eat breakfast. When they skip breakfast, most students experience hunger and fatigue. However, some also report feeling lethargic and having difficulty focusing in class. Students with low BMIs tend to be less physically active than those with normal BMIs, but students with low BMIs are also less physically active than those with moderate and high BMIs. Pupils who have breakfast engage in little physical activity, whereas those who skip breakfast engage in much less physical activity overall.

The majority of the 121 students in the previous research, "Breakfast Habits and Its Relationship to Body Mass Index, Cognitive Function among Final Year Medical Students," missed breakfast at least one or more days a week. There was no discernible difference between pupils who ate breakfast and those who did not, according to this research. (15). According to the study's findings, the majority of students had lower BMIs than obese ones and engage in less physical activity overall, however some engage in higher levels. This research found no significant differences between BMI and physical activity. Out of the 200 pupils, only few fall into the obese group.

According to a research on "breakfast eating habits among medical students," missing breakfast is significantly associated with being tired and paying less attention in clinical settings (16). According to the study's findings, the majority of individuals who skipped breakfast felt hungry, yet very few had problems focusing in class. Thus, this work is important to the field right now.

Previous research shows that students who skip breakfast outperformed those who consume it (17). According to the results of the present research, most students engage in little to no physical exercise, although others engage in moderate to high levels of physical activity. The recent research indicated that missing breakfast has an impact on physical activity. Thus, this study has no bearing on the state of research. Previous research indicates that eating breakfast may enhance cognitive performance in areas such as memory, exam scores, and attendance (18).

The study's result indicates that the majority of students had their breakfast, and that both those who did and did not had modest levels of physical activity thereafter. Analysis shows that missing breakfast is not a useful strategy for managing weight, as it did in earlier studies. Compared to missing breakfast or eating meats and/or eggs for morning, eating cereal (either cooked or ready-to-eat) or quick breads for breakfast is linked with a much lower body mass index (19). This research shows that missing breakfast has a significant impact on BMI and physical activity. Students who skip breakfast fall into the underweight group, engage in little physical activity, and experience fatigue. Previous research has shown a substantial correlation between breakfast skipping and a number of lifestyle factors that compromise health as well as lower parental education.

A person's breakfast habits may be a sign of their lifestyle. Programs of education designed with particular populations in mind should promote consistent breakfast eating (20). According to the results of the present research, students who miss breakfast engage in less physical activity, have headaches and stomachaches, and feel hungry and low on energy. This finding has implications for ongoing research. An earlier research on female university students' breakfast habits Students came to the conclusion that a lack of time was the main reason they skipped breakfast (21). The results of the current research show that not having enough time was the main reason people skipped breakfast. Some people disliked meals at morning. As a result, this work is important to earlier research (22).

Conclusion

This study concluded that breakfast skipping has remarkable effects on physical activity. Students who ate breakfast have low physical activity but who did not eat breakfast had very low physical activity and had trouble paying attention in class. Students who did not ate breakfast did not have energy and felt tiredness.

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