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A Cross-Sectional Exploration of the Interplay between Body Mass Index, Physical Activity Patterns, and Nutritional Trends Among Local and Hostel-Residing Boys

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Abstract: The transition from high school to college represents a critical period for establishing health habits that can influence an individual's long-term well-being. This research explores the connection between college students' physical awareness, dietary habits, and health outcomes, emphasizing the influence of factors such as physical fitness, nutrition, mental health, and body weight management. Common issues like meal skipping, excessive snacking, portion size, and calorie restriction can contribute to weight gain or unhealthy weight management practices. The increasing prevalence of obesity, characterized by an energy imbalance, is a significant concern in this demographic. The study also highlights the importance of promoting healthy weight management through balanced nutrition and regular physical activity. Additionally, it explores how the college environment, including living arrangements and academic pressures, influences students' eating behaviours and overall health. By focusing on education, accessible resources, and supportive environments, universities can play a pivotal role in improving the physical awareness and well-being of students, fostering healthier lifestyle choices, and preventing long-term health issues such as obesity, high blood pressure, and poor metabolic health.

Keywords: *Body Mass Index, Daily Physical Fitness, Junk Food Consumption, Daily Meal Intake.*

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I. INTRODUCTION

The survey was conducted at the Institute of Science, Nagpur, on general health parameters like BMI, daily physical fitness, junk food consumption, and daily meal intake among 216 boys, both local and hostel residents.

College students' general physical awareness includes a wide range of subjects, such as their comprehension and application of healthy lifestyle choices, their level of physical fitness, their knowledge of nutrition, and the avoidance and treatment of common health problems. College students' eating habits might be influenced by the social atmosphere and features of the university, such as living arrangements or class schedules. They frequently engage in eating patterns that make them more likely to gain weight, such as skipping meals, snacking, and consuming greater portions of food.

Obesity rates are rising, which suggests that people are consuming more energy than they are using. According to body mass index (BMI), a healthy weight is between 19 and 24.9 kg/m2, whereas overweight is 25 to 29.9 kg/m2 and obesity is greater than 30 kg/m2.

The amount of junk food consumed, daily physical activity, and meal intake all have a big impact on a person's body mass index (BMI). A healthy BMI is maintained by giving the body the necessary nutrients without consuming excessive calories via a balanced diet high in fruits, vegetables, lean meats, and whole grains. Exercise and other activities of regular daily physical activity enhance metabolism and boost calorie expenditure, and this assists with weight management. However, consuming excessive junk food, which can frequently be abundant in sugar, harmful fats, and empty calories, may end up in weight gain and an elevated BMI.

II. MATERIALS AND METHODS

We get a sample size of 216 boys students in the age group of 18 to 27 years old from “INSTITUTE OF SCIENCE, NAGPUR”. The parameters are as follows :-

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Body mass index, Daily Physical Fitness, Junk food consumption, Daily meal intake.

Applying the Body Mass Index (BMI) Calculator, one can determine one's BMI value and associated weight status while accounting for age. The International System of Units (SI) formula for calculating BMI is shown below.

$$\mathrm{BMI} = \frac{\mathrm{mass_{kg}}}{\mathrm{height_m}^2}$$

The question was posed to the students based on their daily consumption of junk food, daily meal intake, and physical fitness. Accordingly, the data was documented.

III. OBSERVATION AND RESULT

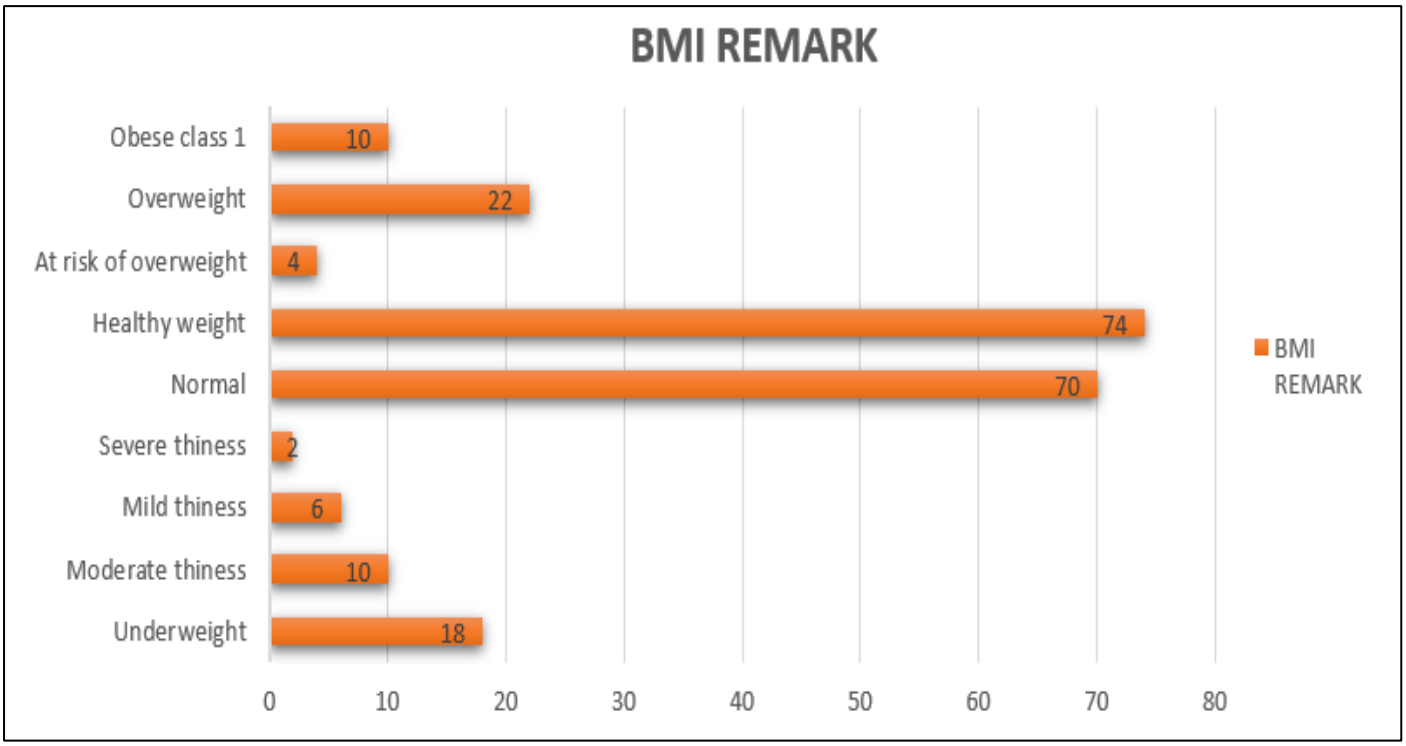

Fig 1 BMI Remark

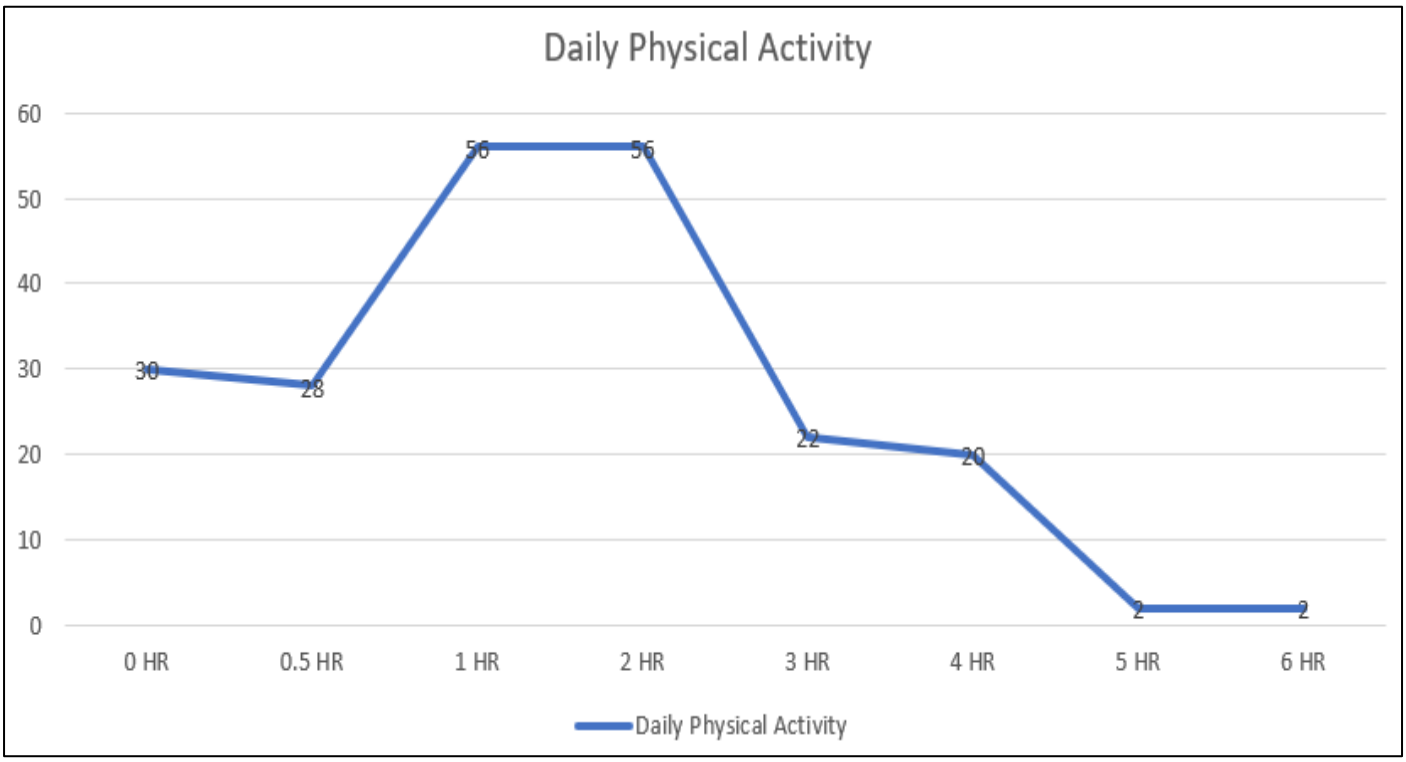

Fig 2 Daily Physical Activity

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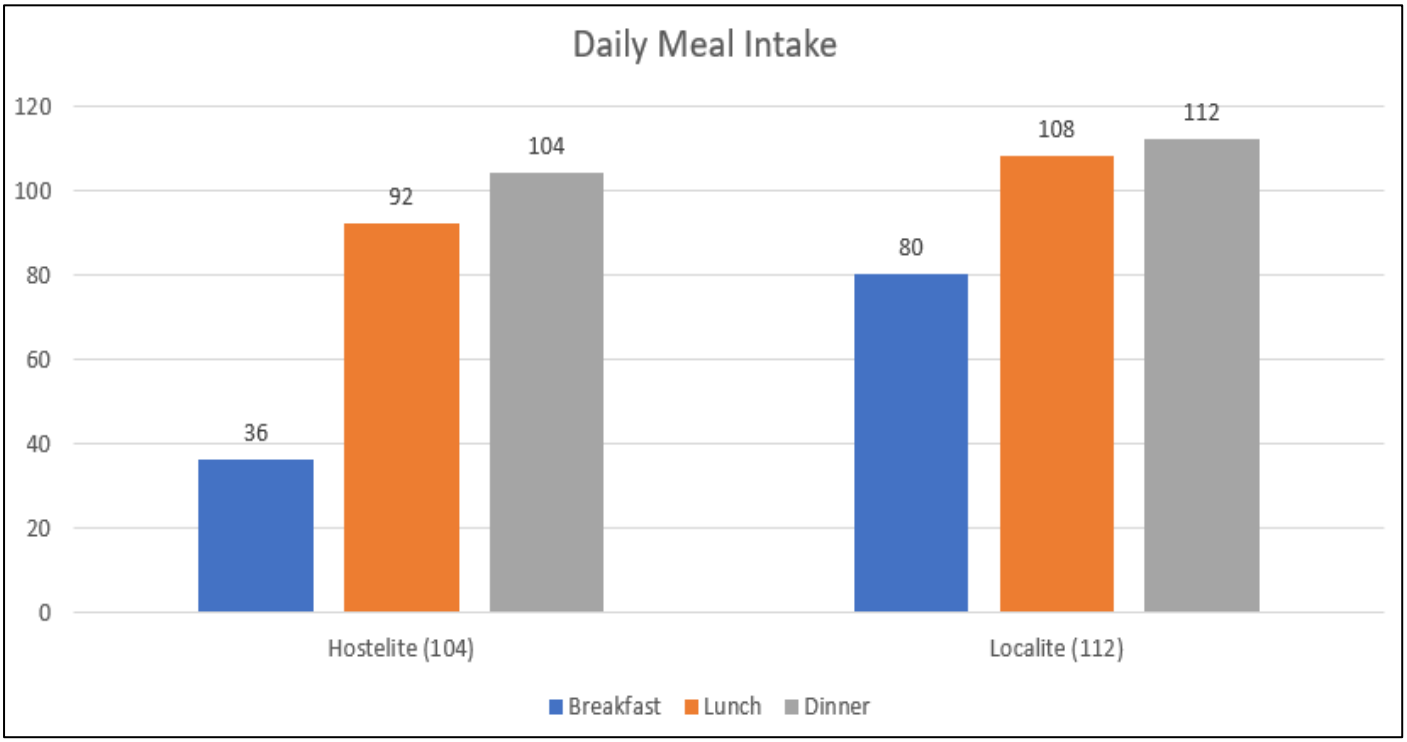

Fig 3 Daily Meal Intake

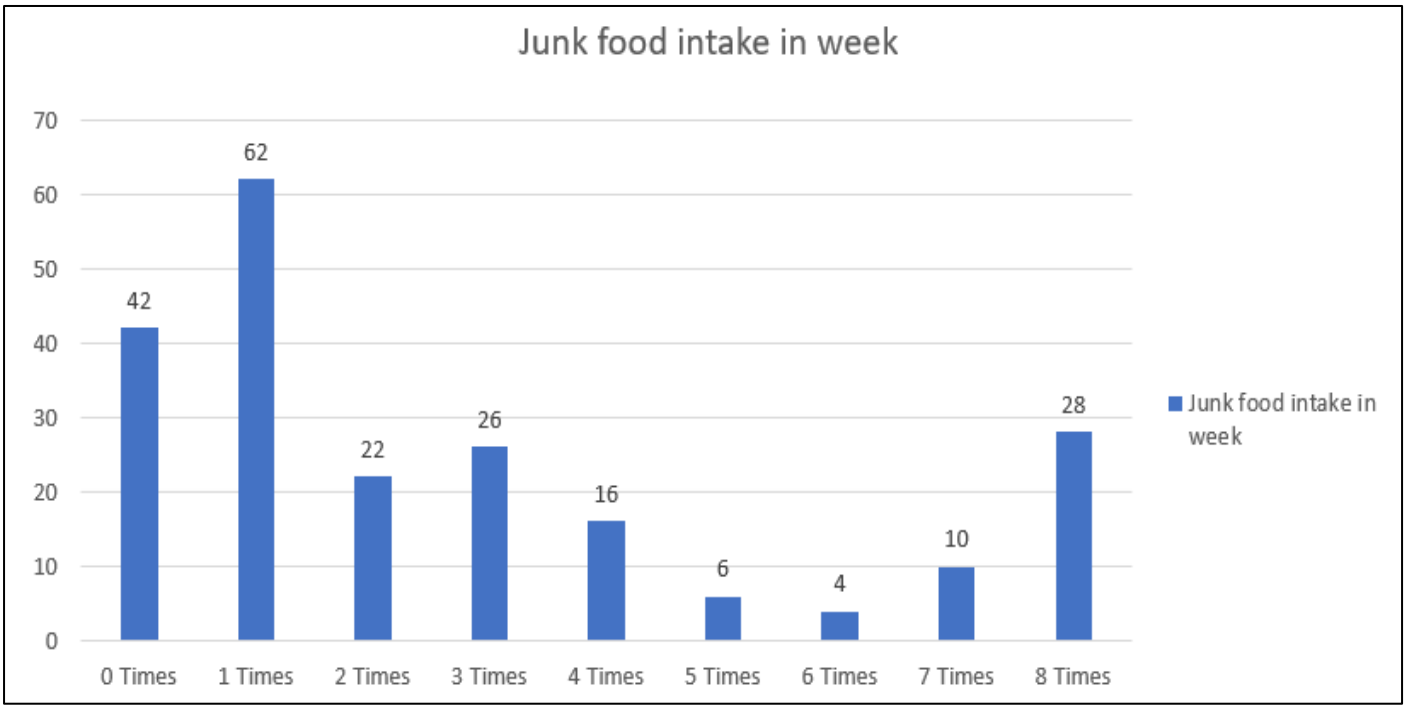

Fig 4 Junk Food Intake in Week

IV. DISCUSSION

Boys with stronger dietary constraint had the greatest BMI, showing that the majority of boys are normal and healthy weight. Furthermore, males who are overweight or obese (stage 1) consume more junk food and meals. It corelate with the college students who followed the most restrictive diets had the greatest BMI and consumed the least energy and fat. [Catalina Ramírez-Contreras et al. 2021]

The Most students commonly ate with family, had two meals a day (including breakfast), and frequently snacked or consumed fried foods. Vegetables and fruits, except for dates, were rarely eaten. Based on my findings Boys were classified as either localites or hostelites. Due to the fact that most of them skip breakfast and lunch in favour of eating more junk food, hostelites have a serious difficulty with eating regular meals. When asked why, they mentioned the college mess food, which is neither healthy nor good, as the reason for their preference for junk food and snacks. As a hostelite, when I

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enquire about their meal consumption, I discover that when they dislike the food at the college mess, they order their favourite junk or high cholesterol food, resulting in unstable diet choices and meal intake. Locals, on the other hand, bring their home food in tiffins, resulting in a more consistent meal intake and less junk food consumption. Locals consume more junk food, but less than hostelites, and live a healthier lifestyle overall. [Abdallah S Al-Rethaiaa et al., 2010]

It was discovered that daily physical activity, BMI, and age group all had a direct correlation. According to the poll, boys aged 18 to 22 have a normal and healthy BMI and engage in regular physical exercise. The majority of the pupils are in undergraduate classes. The majority of students aged 22 to 27 are overweight or obese (stage 1) and are in the postgraduate class. Due to increased stress in the postgraduate class and a hectic schedule, they did not have time for daily physical activity, resulting in weight gain and poor physical condition. It will also be acceptable to say. It corelate with the Students who are more active often feel that social pressure helps them stay healthy. Parents play a key role in shaping healthy eating habits and encouraging both healthy eating and physical activities. [Giovanni Sogari et al., 2018]

V. CONCLUSION

Various correlations were found in the study. Overweight and obese students were more likely to eat junk food, but some students who didn't have a junk food habit were still classified as overweight. Similarly, some underweight students regularly ate junk food. It was also observed that students who ate two or three meals a day, or just dinner, appeared in both the overweight and underweight categories. This could be influenced by other factors like metabolism and daily physical activity. Ultimately, health, physical activity, and nutrition vary from person to person, and different factors might contribute to high or low BMI.

To summarise, while BMI can provide a broad indicator of potential health hazards, it should not be used entirely to judge an individual's health. A more comprehensive assessment that considers waist circumference, physical activity, food, and other health indicators provides a more complete picture of overall well-being. Whatever your BMI, sustaining optimal health requires a balanced lifestyle that includes appropriate nutrition, regular exercise, and stress management.

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