A Study on Daily Dietary Habits and Body Mass Index (BMI) of College Going Boys in Bhubaneswar City, Odisha

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Abstract:

College-going age is a critical period of growth and development in the human life span. Over the last two decades, increased urbanization and globalization have brought significant changes in the lifestyle and dietary patterns of college-going boys. The present study aimed to assess the daily dietary habits and Body Mass Index (BMI) of college-going boys in Bhubaneswar. A total of 150 college-going boys were selected randomly for the study. The findings revealed that the majority of the respondents 76.7% followed a non-vegetarian diet, whereas only 23.3% were vegetarians, indicating a clear preference for non-vegetarian food among the study population. Assessment of BMI showed that the majority of the boys 64.7% fell within the normal weight category, while comparatively fewer respondents were underweight or overweight. Although most students maintained a normal nutritional status, unhealthy dietary behaviors-particularly frequent fast-food consumption and irregular eating patterns-may increase the risk of overweight and obesity in the future. The study highlights the need for targeted nutritional education, promotion of healthy eating habits, and awareness programs among college students to ensure better long-term health and well-being.

Keywords: BMI level, College going boys, Dietary habits, Nutritional status.

Introduction

Adolescence and early adulthood constitute a crucial stage in the human life cycle, marked by rapid physical growth, psychological maturation, and the establishment of long-term lifestyle behaviors. According to World Health Organization, individuals in this transitional phase are particularly vulnerable to adopting unhealthy dietary patterns due to increased autonomy, peer pressure, and environmental influences. College-going boys, especially in the age group of 18–24 years, often experience irregular schedules, academic stress, and greater independence in food choices, which significantly shape their dietary habits and health outcomes.

Dietary habits are fundamental determinants of nutritional status and overall well-being. A balanced diet consisting of adequate macro and micronutrients is essential for maintaining physiological functions, supporting cognitive performance, and preventing disease. However, globalization and urbanization have

contributed to a shift in food consumption patterns, particularly among youth. Studies by Food and Agriculture Organization indicate an increasing trend toward the consumption of processed, energy-dense, and nutrient-poor foods, along with a decline in the intake of fruits, vegetables, and traditional diets. Skipping meals, especially breakfast, frequent snacking, and dependence on fast foods have become common among college students, adversely affecting their nutritional status (Savige et al., 2017; Nelson et al., 2008).

Body Mass Index (BMI) is one of the most widely used anthropometric indicators for assessing nutritional status. It is calculated as weight in kilograms divided by the square of height in meters and provides a simple method to classify individuals into categories such as underweight, normal weight, overweight, and obese. The BMI classification system recommended by the World Health Organization (WHO) serves as a global benchmark for evaluating health risks associated with body weight. Abnormal BMI levels are closely associated with lifestyle factors such as poor dietary habits, physical inactivity, and sedentary behavior. Research has shown that both under-nutrition and over-nutrition among adolescence can lead to serious health complications, including weakened immunity, metabolic disorders, and increased risk of non-communicable diseases (NCDs) (WHO, 2020; Popkin et al., 2012).

In the Indian context, rapid urbanization and lifestyle transitions have led to a dual burden of malnutrition, where under-nutrition coexists with rising levels of overweight and obesity. Young adults, particularly college students, are increasingly exposed to unhealthy food environments characterized by easy access to fast food outlets, packaged snacks, and sugar-sweetened beverages. Studies conducted in urban Indian settings have reported a growing prevalence of abnormal BMI among college students, largely attributed to poor dietary practices and reduced physical activity (Goyal et al., 2013; Pengpid & Peltzer, 2015).

Bhubaneswar, the capital city of Odisha, is a fast-growing urban center and a prominent educational hub that attracts students from diverse socio-economic and cultural backgrounds. The changing urban lifestyle, combined with academic demands and exposure to modern food environments, may significantly influence the daily dietary habits of college-going boys in this region. Despite the increasing importance of nutritional health, limited research has been conducted specifically focusing on the dietary patterns and BMI status of male college students in Bhubaneswar.

Objectives:

1. To study the daily dietary habits of the respondents.
2. To assess the BMI of college going boys.
3. To find out an association between daily dietary habits and BMI of the respondents.

Methodology:

Methodology refers to the systematic and sequential procedures adopted for conducting scientific and social research. It provides a logical framework that guides the researcher in collecting, organizing, and analyzing data, ultimately leading to valid and reliable conclusions. The present study was conducted in Bhubaneswar, the capital city of Odisha, which is widely recognized as an important educational hub with a large population of college-going students. The universe of the study comprised undergraduate male students enrolled in colleges located in North Bhubaneswar. A random sampling technique was employed to ensure an unbiased selection of the sample. Three colleges situated in North Bhubaneswar were selected for the study. From these institutions, a total of 150 college-going boys, aged between 18 and 24 years and pursuing undergraduate courses in different academic streams, were included as respondents. Data collection was carried out using a structured questionnaire-cum-interview schedule. The researcher personally administered the tool through face-to-face interviews to ensure accuracy, clarity, and completeness of responses. After the collection of data, the responses were systematically compiled, classified, and tabulated. Statistical techniques such as frequency distribution, percentage analysis, mean, and chi-square test were applied to analyze and interpret the data. Additionally, tables and graphical representations were used to present the findings in a clear and comprehensible manner, facilitating better understanding and interpretation.

Result and Discussion:

Table-1: Demographic profile of the respondents:

Sl no		Variables	Number	Percentage (%)	Mean	X^2
1.1	Colleges	CIMH	50	33.3	2.00	1.000
		RMDD	50	33.3		
		AH	50	33.3		
		Total	150	100		
1.2	Age	17-18 yr	34	22.7	2.32	30.720
		19-20 yr	34	22.7		
		21 & above	82	54.7		
		Total	150	100		
1.3	Stream	Science	112	74.7	1.46	1.211
		Commerce	07	4.7		
		Arts	31	20.7		
		Total	150	100		
1.4	Marital status	Married	06	4.0	1.96	126.960
		Un Married	144	96.0		
		Total	150	100		
1.5	Income of family	Less than 2 lakhs	63	42.0	1.83	59.973
		2 to 5 lakhs	59	39.3		
		5 to 10 lakhs	18	12.0		
		10 lakhs & above	10	6.7		
		Total	150	100		

Table-1 represents the demographic characteristics of the 150 respondents included in the study. With regard to college distribution, the sample is evenly divided among the three colleges-CIMH, RMDD, and AH-each contributing 50 respondents 33.3%. This equal representation ensures balanced participation and reduces institutional bias in the study. In terms of age, more than half of the respondents 54.7% belong to the age group of 21 years and above, while 22.7% each fall within the 17–18 years and 19–20 years categories. This indicates that the majority of participants are relatively mature college students, possibly in later years of study.

Looking at the stream of education, a large majority 74.7% of respondents are from the Science stream, followed by Arts 20.7% and a very small proportion from Commerce 4.7%. This table shows a dominance of science students in the sample, which may influence the overall findings, especially in areas related to anthropometric measurement and health practices. Regarding marital status, the overwhelming majority of respondents are unmarried 96%, while only 4% are married. This is expected given the college-going population and suggests that most participants are in the early stage of adulthood. With respect to family income, the largest proportion of respondents 42% belong to families earning less than 2 lakhs annually, followed closely by 39.3% in the 2–5 lakhs category. Only 12% and 6.7% belong to the 5–10 lakhs and above 10 lakhs income groups, respectively. This indicates that most respondents come from lower to middle-income families.

Table-2: Daily dietary habits of the respondents:

Sl no		Variables	Number	Percentage (%)	Mean	X^2
2.1	Dietary habit	Veg	35	23.3	1.77	42.667
		Non-veg	115	76.7		
		Total	150	100		
2.2	Times to eat	Three	74	49.3	1.78	124.733
		Four	49	32.7		
		Five	18	12.0		
		Six	04	2.7		
		Above six	05	3.3		
		Total	150	100		
2.3	Preferred to eat	Home	107	71.3	1.39	181.21
		College canteen	30	20.0		
		Restaurant	10	6.7		
		Online order	03	2.0		
		Total	150	100		
2.4	Main meal of the day	Breakfast	20	13.3	2.70	183.707
		Brunch	13	8.7		
		Lunch	109	72.7		
		Dinner	08	5.3		
		Total	150	100		

Table-2 highlights the daily dietary patterns of the 150 respondents. With regard to dietary habit**,** a large majority of the respondents 76.7% follow a non-vegetarian diet, whereas only 23.3% are vegetarians. This indicates a clear preference for non-vegetarian food among the study population. In terms of frequency of meals per day, nearly half of the respondents 49.3% consume food three times a day, followed by 32.7% who eat four times daily. A smaller proportion of respondents consume five meals 12%, six meals 2.7%, or more than six meals 3.3% per day. This suggests that the common eating pattern among respondents is limited to three to four meals daily.

Regarding preferred place to eat, the majority of respondents 71.3% prefer home-cooked food. About 20% depend on the college canteen, while a small percentage prefers restaurants 6.7% and online food ordering 2%. This indicates a strong inclination toward home-based meals, possibly due to factors like cost, hygiene, and familiarity. Concerning the main meal of the day, a significant majority 72.7% consider lunch as their main meal. Smaller proportions identify breakfast 13.3%, brunch 8.7%, and dinner 5.3% as their primary meal. This reflects a traditional eating pattern where lunch holds the greatest importance. The chi-square (χ^2) values for all variables are relatively high, indicating significant variation in dietary habits among respondents.

Table-3: Fast-food habits of the respondents:

Sl no		**Variables**	**Number**	**Percentage (%)**	**Mean**	**X^2**
3.1	Eat fast food daily	Yes	93	62.0	1.38	8.640
		No	57	38.0		
		Total	150	100		
3.2	Eat fast food in a week	1 to 2 times	57	38.0	2.10	21.360
		3 to 4 times	45	30.0		
		5 or more times	24	16.0		
		Never	24	16.0		
		Total	150	100		
3.3	Reasons for choose fast food	Advertisement	11	7.3	3.22	165.093
		Enjoy the taste	73	48.7		
		Limited time	17	11.3		
		Cost/price	02	1.3		
		Variety of menu	18	12.0		
		Eat with friend/family	26	17.3		
		Hostelite	03	2.0		
		Total	150	100		

Table-3 presents the pattern and reasons for fast-food consumption among the 150 respondents. With regard to daily consumption of fast food, a majority of the respondents 62% consume fast food daily, while 38% do not consume. This indicates that fast food forms a regular part of the diet for a considerable proportion of the study population. In terms of frequency of fast-food consumption per week, the highest proportion of respondents

38% consumes fast food 1–2 times per week, followed by 30% who consume it 3–4 times weekly. Notably, 16% of respondents consume fast food 5 or more times per week, while an equal proportion 16% reported never consuming fast food. This suggests a mixed pattern, with moderate consumption being most common, but a significant group engaging in frequent intake.

Regarding the reasons for choosing fast food, nearly half of the respondents 48.7% preferred fast food because they enjoy its taste, making it the most influential factor. Other reasons include eating with friends or family 17.3%, variety in the menu 12%, limited time 11.3%, and advertisement influence 7.3%. Cost/price was the least influential factor 1.3%. These findings indicate that taste preference and social factors play a major role in fast-food consumption, rather than economic considerations. The chi-square (χ^2) values for all variables indicate noticeable variation in responses, especially for reasons for consumption ($\chi^2 = 165.093$), suggesting strong differences in motivational factors among respondents.

Table-4: Body Mass Index (BMI) of the respondents:

	Variables	Number	Percentage (%)	Mean	X^2
BMI level of the respondents	Under weight (>18.5)	16	10.7	2.15	140.507
	Normal weight (18.51-24.99)	97	64.7		
	Over weight (25-29.99)	35	23.3		
	Obese (30<)	02	1.3		
	Total	150	100		

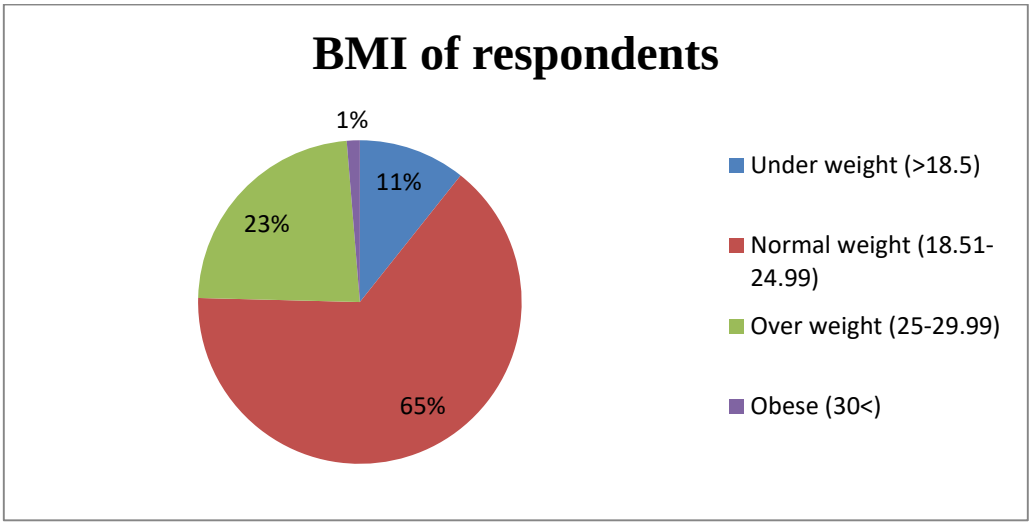

Table-4 presents the distribution of respondents according to their Body Mass Index (BMI) levels. The findings reveal that a majority of the respondents 64.7% fall within the normal weight category (BMI 18.51–24.99), indicating that most of the study population maintains a healthy body weight. This suggests a relatively satisfactory nutritional status among the respondents. However, a considerable proportion 23.3% of respondents

is classified as overweight (BMI 25–29.99)**.** This is a noteworthy finding, as it indicates a growing tendency toward excess body weight, which may increase the risk of lifestyle-related health problems if not addressed. A smaller percentage 10.7% of respondents are underweight (BMI <18.5)**,** reflecting possible under-nutrition or inadequate dietary intake among this group. This highlights the coexistence of both under-nutrition and over-nutrition within the same population. Only a very small proportion 1.3% of respondents fall into the obese category (BMI ≥30)**,** indicating that severe obesity is relatively low in the study sample. The mean BMI value 2.15 suggests that, on average, respondents fall within the normal weight range. The chi-square ($\chi^2 = 140.507$) value indicates significant variation in BMI distribution among respondents.

Table-5: Body Mass Index (BMI) of the respondents with dietary habits:

Sl no		Variables	Under weight	Normal weight	Over weight	Obese	Total
5.1	Dietary habits	Veg	03	27	05	0	35
		Non-veg	13	70	30	02	115
		Total	16	97	35	02	150
5.2	Times to eat	Three	08	47	19	0	74
		Four	06	32	11	0	49
		Five	02	12	04	0	18
		Six	0	04	0	0	04
		Above six	0	02	01	02	05
		Total	16	97	35	02	150
5.3	Preferred main meal	Breakfast	0	17	03	0	20
		Brunch	0	09	02	02	13
		Lunch	08	71	30	0	109
		Dinner	08	0	0	0	08
		Total	16	97	35	02	150
5.4	Eat fast food	Yes	11	59	21	02	93
		No	05	38	14	0	57
		Total	16	97	35	02	150

Table-5 presents the relationship between Body Mass Index (BMI) and various dietary habits of the respondents, including type of diet, frequency of meals, preferred main meal, and fast-food consumption. With regard to dietary habits, among vegetarians, the majority (27 out of 35) fall under the normal weight category, with a small number being underweight (03) and overweight (05), and none obese. Among non-vegetarians, a larger proportion (70 out of 115) are of normal weight; however, a notable number are overweight (30) and a few are obese (02). This indicates that while both groups largely maintain normal BMI, overweight and obesity are more prevalent among non-vegetarians.

In terms of frequency of meals (times to eat), respondents consuming three meals per day show the highest distribution across BMI categories, with 47 normal-weight and 19 overweight individuals. Those consuming

four meals also largely fall within the normal category (32), with fewer overweight cases (11). Interestingly, respondents eating more than six times per day include the only (02) obese cases, suggesting that excessive meal frequency may be associated with higher BMI. Meanwhile, those consuming six meals per day are entirely within the normal category. Regarding the preferred main meal, respondents who consider lunch as their main meal constitute the largest group (109), with most falling under normal weight (71) but also including a significant number of overweight individuals (30). Those preferring breakfast and brunch are predominantly in the normal category, although brunch includes a small number (02) of obese individuals. Respondents identifying dinner as the main meal are entirely underweight (08), which may indicate irregular or inadequate dietary patterns. With respect to fast-food consumption**,** among those who consume fast food, the majority are of normal weight (59), but a considerable number are overweight (21) and a few are obese (02). In contrast, respondents who do not consume fast food show a relatively healthier distribution, with fewer overweight cases (14) and no obesity reported. This suggests a possible association between fast-food consumption and higher BMI levels.

Conclusion:

The present study provides valuable insights into the dietary habits and nutritional status of college-going boys. The findings reveal that the majority of respondents were un-married students, predominantly from the science stream and belonging to lower- and middle-income groups, ensuring a fairly representative academic population. Dietary assessment indicates that most respondents follow non-vegetarian diet and consume food three to four times a day. A strong preference for home-cooked meals with lunch identified as the main meal by the majority of the respondents. Despite this seemingly structured dietary pattern, a significant proportion of respondents regularly consume fast food, primarily driven by taste preference, social influence, and convenience rather than cost or advertisement.

The analysis of BMI shows that while most respondents fall within the normal weight category, there exists a dual burden of malnutrition, with noticeable proportions of underweight and overweight individuals. The prevalence of overweight is particularly concerning, indicating a shift toward unhealthy weight gain among students. Furthermore, the association between BMI and dietary habits highlights that non-vegetarian diet, increased meal frequency, preference for certain meal timings, and especially fast-food consumption are linked with higher instances of overweight and obesity. Respondents who frequently consumed fast food showed a greater tendency toward higher BMI compared to those who avoided it. Although majority of students maintain normal nutritional status, unhealthy dietary behaviors-particularly frequent fast-food intake and irregular eating patterns-pose a potential risk for developing overweight and obesity. These findings emphasize the need for targeted nutritional education, promotion of healthy eating practices, and awareness programs among college students to ensure long-term health and well-being.

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