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Lifestyle and body mass index among students of a nursing college in Bihar.

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Abstract

India is encountering double burden of under nutrition and over nutrition. Lifestyle habits of adolescents and young adults would translate into behaviour as an adult. The objective of this study was to assess the dietary habits, physical exercise and its relationship with BMI among nursing students. A cross sectional study was conducted on nursing students of Narayan Nursing College, Sasaram, Bihar. BMI was calculated. BMI was used to define underweight, Normal, overweight and obesity as per WHO. The overall prevalence of underweight, overweight and obesity in our study population was 32.6%, 9.4% and 2.1%. Among 233 students, 87 were males and 146 were females of which 11.5% of males and 8.2% females were overweight. Only 3.4% females were obese. 54.5% of the students used to skip breakfast. Among semi-urban students, 52.4% skipped breakfast which was marginally lower than rural students (55.6%). 91.8% students consumed junk food. Students participating in mild, moderate and strenuous exercise were 44.6%, 43.8% and 11.6% respectively. Nutritional status among young population is still not favourable. Students preferred snacks and skip meals frequently. Students avoid strenuous exercise and prefer sedentary lifestyle. Health awareness regarding lifestyle and dietary behaviour is necessary for students Parent's involvement and social support is an important factor to increase physical activity among students.

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Introduction

Majority of Indian population live in rural areas mainly depending on agriculture for their livelihood and carry out more physical activities than urban population, who are accustomed to sedentary lifestyle [1]. Diet is a component of lifestyle, which plays an important role in development or prevention of overweight and obesity. An unhealthy lifestyle among young people is a serious and unnoticed problem. Young people brought up in rural areas lead a healthier lifestyle compared to their peers in the big cities [2]. Physical activity have changed as a result of increased television watching, spending more time on computer or mobile and spending less time on outdoor sports. The dysregulation of energy consumption and expenditure related to inappropriate dietary habits and lack of exercise increases the prevalence of both overweight and obesity [3]. Obesity is emerging as a serious problem throughout the world, not only among adults, but also children, teenagers and young adults. Body Mass Index (BMI) is a simple index of weight-for-height that is commonly used to classify underweight, overweight and obesity obesity. BMI values are age-independent and same for both sexes [4].

The most crucial time of life when obesity can develop easily is college years. Obesity can arise in early years due to irregularity in diet, lack of exercise and addiction. The young students who live away from home in hostels are more prone to have an unhealthy lifestyle [5]. Unhealthy diet and physical inactivity at younger ages are the two main risk factors that have been associated with raised blood pressure, raised blood glucose, abnormal blood lipids, major chronic diseases like ischemic heart disease, cancer and diabetes. India is encountering a dual burden of under nutrition and over nutrition due to the monetary factors and education of the people of society. There are many factors which influence BMI among adolescents and young adults. Thus, the present study was done to assess the lifestyle and BMI among students of a Nursing College in Bihar.

Material and Methods

A cross section study was carried out among undergraduate students of Narayan Nursing Collage, Sasaram. The nursing students were from adjoining rural and urban area giving their demographic profile a fair representation of nursing students of Bihar. The study period was from 1st to 15th November 2015. After explaining the aim of the study, all 300 students (1st, 2nd and 3rd year) were selected for study. The students who were

present on the days of survey and willing to participate were included in this study. The students were ensured of the confidentiality. The only exclusion criteria was unwillingness of student. A pre-tested semi-structured questionnaire was used to assess socio demographic profile, eating habits and physical activities among students. For anthropometric measurements, height and weight of students were measured. For height, Stadiometer was used with students standing in Frankfort plane, without shoes. A calibrated weighing scale was used to nearest ± 100 grams for weighting. The weighing scale was re-calibrated and checked after every 10 participants.

Table 1. *Socio demographic profile of students (N=233).*

Characters	n (%)
Sex	
Males	87 (37.3)
Females	146 (62.7)
Marital Status	
Unmarried	147 (63.1)
Married	86 (36.9)
Residence	
Rural	151 (64.8)
Urban	82 (35.2)
Education status of Father	
Illiterate	32 (13.7)
Literate	201 (86.3)
Education status of Mother	
Illiterate	67 (28.8)
Literate	166 (71.2)
Occupation of Father	
Farmer	121 (51.9)
Service	112 (48.1)
Occupation of Mother	
Housewife	193 (82.8)
Service	40 (17.2)

Body Mass Index (BMI) was calculated using formula - Weight/Height^2. BMI is commonly used to define underweight (<18.5 Kg/m^2), normal (18.5-24.9 Kg/m^2), overweight (25-30 Kg/m^2) and obesity (>30 Kg/m^2) according to WHO guidelines [4]. Ethical clearance from the institute was taken and permission to conduct the study in the college was taken from the Principal of Nursing College. As per convenience, survey was conducted in different batches. Written consent was taken from students. Students were interviewed individually. Strict confidentiality was maintained during survey and analysis. Statistical analysis was done using Excel sheet and SPSS 12.0. p values were kept significant at the level of 0.05.

Results

The total students present on the days of survey were 243. Final analysis was done on 233 students, giving a response rate of 95.9%. The mean age of students was 21.6 years (Range: 17-35 years, SD=3.35 years). According to socio-demographic profile of students, 87 were males and 146 were females, giving a male: female ratio of 0.6:1. 36.9% of study population were married. Most of the students belonged to rural area (64.8%). The literacy rate of student's father & mother was 86.3% and 71.2%. Almost half of the fathers were farmers (51.9%), but most of the mothers were housewives (82.8%) (Table 1). All the students were of similar socio-economic status. The overall prevalence of underweight, overweight and obesity in our study population was 32.6%, 9.4% and 2.1%. Among 87 male students, prevalence of underweight, overweight and obesity in our study population was 32.2%, 11.5% and 0% whereas in 146 females the prevalence was 32.9%, 8.2% and 3.4% respectively. (Table 2).

Table 2. *BMI Classification of students.*

Residence	Sex	Min	Maximum	Mean	SD (±)
RURAL	Male	14.8	26.7	20.43	2.88
	Female	14.6	31.1	20.43	3.24
URBAN	Male	15	29.7	21.64	3.81
	Female	15.6	32.3	20.86	4.02

Table 3. *Dietary habits of students (N=233).*

Variables (n)	Males n (%)	Females n (%)	p value
Type of diet			
Vegetarian (50)	9 (18.0)	41 (82.0)	0.001*
Mixed (183)	78 (42.6)	105 (57.4)	
Skip Breakfast			
Yes (127)	48 (37.8)	79 (62.2)	0.875
No (106)	39 (36.8)	67 (63.2)	
Favorites food			
Homemade (178)	61 (34.3)	117 (65.7)	0.081
Outside (55)	26 (47.3)	29 (52.7)	
Junk food consumption			
Zero/week (19)	2 (10.5)	17 (89.5)	0.000*
One/week (106)	32 (30.2)	74 (69.8)	
Two/week (66)	24 (36.4)	42 (63.6)	
Three or more/week (42)	29 (69.0)	13 (31.0)	

Mixed diet was favoured by more students (n=183) than vegetarian diet (n=50). Out of 233 students, 178 preferred homemade food while 55 were inclined towards outside (restaurant) food. Those who preferred homemade food, 117

(65.7%) were females. Both the sexes liked outside food equally. 54.5% students skipped breakfast at least three times a week. Out of 146 females, 79 (62.2%) skipped breakfast more than twice in a week. Skipping breakfast was more in rural students (62%) compared to urban students (38%). But of 87 males, 48 (37.8%) rural students skipped breakfast more than twice in a week. There were only 19 students, 2 males and 17 females, who did not eat junk food. 106 (32 males and 74 females) consumed junk food once a week, 66 (24 males and 42 female) had twice a week and 42 (29 males and 13 females) had three times or more (Table 3). Out of 233 students, 104 (44.6%) were in mild, 103 (44.2%) in moderate and 26 (11.1%) in strenuous exercise group (Table 4). In total of 87 male students, 32 (36.8%) were in mild, 46 (52.8%) in moderate and 9 (10.4%) in strenuous exercise group. In total of 146 female students, 72 (49.3%) were in mild, 57 (39%) in moderate, 17(11.7%) in strenuous exercise group.

Table 4. *Physical activity.*

Exercise	Residence		% of Total (233)
	Rural (%)	Urban (%)	
Mild (n=104)	64 (61.5)	40 (38.5)	44.6
Moderate (n=103)	73 (70.9)	30 (29.1)	44.2
Strenous (n=26)	14 (53.8)	12 (46.2)	11.1

Discussion

Diet and lifestyle are possibly the major contributors to weight problems and varies with different socio-economic status especially countries like India [6]. The prevalence of underweight students in our study was 32.6%. A study done in Wardha showed prevalence of underweight as 35.6% among rural population [7]. The high prevalence proves the point that in India, under-nutrition is still present among adolescents and young adults [8]. The prevalence of overweight and obesity in our study population was 9.4% and 2.1%, similar to a study done by Chabra et al. among medical students of Delhi [9]. Similar findings were shown by other studies [10,11]. Outside food was favoured by males and females equally in the study. Youth in the cities have easier access to shopping malls, supermarkets, etc which continually advertise unhealthy food and high-calorie products [2]. But the miniature packages of food stuff are easily available in rural areas also. 91.8% of study subjects are eating junk foods regularly. Singh et al. found in their study that fast food consumption is very much prevalent among adolescents [12]. The food choices are influenced by the media and television advertisement. Television has changed a great deal in the past two decades. Children aged 2 to 17 years are being exposed early in life to more television and more advertisement than ever before. Food marketing is aimed at children at an early age and it is directly effecting their food choices, food preferences and eating habits. Both young children and adolescents consume excessive dietary fat and sugar, whereas fruit, vegetable and various micro-nutrients intake is lower than recommended [13].

In the study, 127 (54.5%) students skipped breakfast at least three times a week. College life is characterized by becoming independent. This influence the eating habit of college students, characterized by skipping meal, not having a variety of food, insufficient consumption of foods including fruits, vegetable or dietary food and frequent consumption of processed food or convenience food [14]. 62.2% of girls' skipped breakfast more than twice in a week. Similar results were observed in a study [15]. Peer pressure is very high during adolescence and young adults. The need to be in step with the trends, belong to the peer group leads the adolescent to eat less food. Awareness of body structure and figure become priority thus, they skips meal in anxiety to be slim. Nearly half of the students were doing only mild exercise in their daily routine. The reason might be their involvement in watching television, using computers and playing games [16]. A 21 year longitudinal study indicated that physical activity from 9 to 18 predicts adult physical activity and continuous physical activity at school age considerably increased the probability of being active in adulthood [17]. The other studies mentioned the common barriers as exercising takes too much of time, studying for exam, college workload too high and laziness [18,19]. Youth in the big cities have easier access to public transport which does not incline them to take daily walks [2]. Male students in our study were engaged in more physical activities than females, comparable to other studies [20]. Television viewership has penetrated to rural population leading to higher rates of physical inactivity, which contributes to lower life expectancies and poor health outcomes [21].

Conclusion and Recommendations

The dual nature of nutritional status still exists in India. Students preferred fast foods. They use to skip meals frequently. Junk food has found a place among their diets. Most of the students avoided strenuous exercise. Students should be made aware of the health hazards of skipping meals and consuming junk foods. Parent's involvement and social support is an important factor to increase physical activity among students.

Limitations

The study is done in only one nursing college. It cannot be generalized for the whole population. Also, the study sample size was small. Further study in more number of students is required to get impressive data regarding nutritional status of young adults. Although, it gives a fair idea of lifestyle and dietary habits among college going adolescents and young adults in rural and urban area of Bihar.

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