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## Association of nutritional status and lifestyle factors among youth in Meerut city

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### Abstract

**Objective:** To determine the association between nutritional status and lifestyle among youth.

**Methods:** Nutritional status and lifestyle factors of 400 school going youth (15-18 years) 200 boys and 200 girls were assessed using lifestyle questionnaire and nutritional status measured by parameters such as height, weight and BMI. The samples were selected by random sampling method.

**Results:** The study found that only 42.50% of the youth belonged to the normal BMI category, while the rest of 57.50% were Malnourished. Under Malnourished, 49.25% of the youth were found to be underweight (low BMI) and 8.25% were found to be overweight & obese (high BMI). Nutritional status and lifestyle factors were found to be associated with each other. The study found significant relations between nutritional status and lifestyle variables i.e. exercise/yoga, worship/meditation, watching TV, stressed/depressed, outdoor games/sports, and junk food habits. During the assessment of 400 school going children in the study, no significant relationship was observed between the use of mobile/internet and nutritional status.

**Conclusion:** Through the findings in the study, it is concluded that all the lifestyle variables except 'internet/mobile' had a significant association with nutritional status. Inadequate nutritional status and inadequate lifestyle among youth calls for the need to develop an intervention program for promoting a healthy lifestyle, healthy eating habits to improve the nutritional status and positive thinking of the youth as a part of their life because lifestyle and nutritional status are related to each other.

**Keywords:** Nutritional status, lifestyle, malnourished and youth

### 1. Introduction

More than 200 million school-going children are currently under-developed and malnourished, and if nothing is done, more than 1 billion school-going children would be growing up with physical and mental defects by 2025. A period of growth and development where new habits and behaviours are established through experimentation and lifestyle behaviours usually originate during youth & adolescence. Adolescence represents a bridge between childhood and adulthood. Any wrong behaviours or lifestyle during this stage may lead to the development of adverse health effects in adulthood (Geckova A *et al.* 2001) <sup>[1]</sup>. Unhealthy behaviours like fast food consumption, smoking, watching TV and less physical activity have increased dramatically due to rapid urbanization and western influence. Approximately 29.5% youth consume fast food, 9.6% have a sedentary lifestyle (Mushtaq MU *et al.* 2011) <sup>[2]</sup>. Some previous studies have identified an association between unhealthy lifestyle behaviours such as intake of junk food & soft drinks, smoking, use of tobacco products and less physical activity and mental health problems like depression, anxiety and suicidal ideation. Some protective factors have also been associated with a reduced risk of mental health issues among youth, such as support from – parents, family, and friends.

A healthy and balanced food group diet is essential for overall growth & development with an additional need for energy and essential nutrients, particularly during the youth phase (4). According to the nutritionists, energy requirements are met by a mixed diet, which relies on more cereals, milk and milk products, fruits & vegetables and low consumption of fat and sugar. However, in recent years, the greater variety of junk foods and nutrient-enriched items have contributed to a change in eating habits. Dietary habits and lifestyles have changed in society to a very extent. In the current era, binge watching on TV, computer, use of mobile internet and social media have adversely impacted the lifestyle of youth.

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Therefore, keeping in view the information obtained from earlier studies, the present study was carried out in Meerut city in Uttar Pradesh to determine the nutritional status and lifestyle of youth.

**2. Material and Method**

A cross-sectional study to identify the nutritional health and lifestyle of young people in Meerut city, Uttar Pradesh. Through random sampling, we were able to collect a representative sample of grades 9 to 12. In the first stage, schools were selected based on the school authority that had granted permission. The students were chosen randomly in the second round, and all students were entitled to participate in the survey. 400 students were selected in (15 to 18 years) age group from which 200 were girls and 200 were boys.

**2.1 Nutritional Assessment**

The nutritional status of the youth was assessed by taking measurements of their height, weight, and BMI. Standard techniques were used to carry out these measurements.

**2.2 BMI Formula:** Weight (kg)/Height (m)<sup>2</sup> and classified standard criteria by WHO.

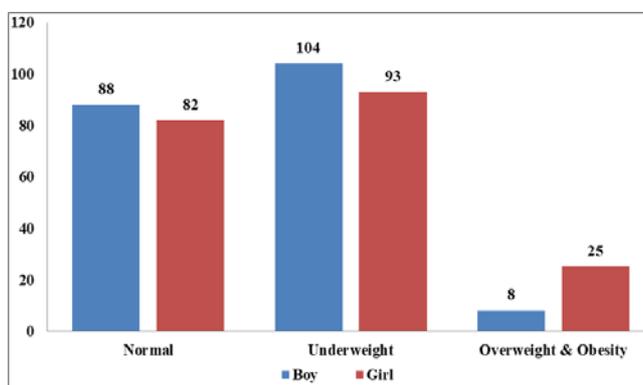
**2.3 Lifestyle Assessment**

A self-administered brief questionnaire was used to evaluate lifestyle habits. This was a pre-structured, pre-tested multiple-choice questionnaire designed to collect the information on lifestyle habits such as watching T.V., using mobile/internet, exercise and yoga time, playing outdoor games and eating fast food.

**3. Results & Discussion**

**Table 1:** Prevalence of nutritional status of school students according to their gender

BMI category	Gender		Total
	Boy	Girl	
Normal	88	82	170(42.50%)
Underweight	104	93	197(49.25%)
Overweight & Obesity	8	25	33(8.25%)
Total	200	200	400



**Fig 1:** Related the data on nutritional status of school going youth in Meerut city of Uttar Pradesh

**Figure 1:** Related the data on nutritional status of school going youth in Meerut city of Uttar Pradesh. According to the data analysis only 42.50% of the youth was in the normal BMI range (18.50 - 24.90), while the rest of 57.50% were Malnourished i.e., 49.25% of them were underweight & had low BMI (<18.5) and 8.25% of them were found overweight & obese and had a high BMI (>24.9). In the Normal BMI

category, number of boys were higher than girls. More Girls were overweight & obese than the boys. On the other hand, more number of boys were underweight as compared to girls.

**3.1 Association of nutritional status with lifestyle factors of youth**

**Table 1:** Do you do exercise/yoga?

BMI	Daily	4-5 days in a week	Frequently	Never	Total	Chi-square	P-value
Normal	19	24	28	99	170		
Underweight	41	20	11	125	197		
Overweight & obesity	2	9	9	13	33		

Significance level=0.05\* significant at *p*<.05

Table-1 shows the data on exercise/yoga of children based on nutritional status. Based on collected data 27.27% overweight & obese children were found to practice yoga/ exercise frequently (around 4-5 days in a week). 63.45% of underweight children were found to have never exercised.

Similarly, 58.23% children in the normal BMI category were also found not to have exercised at all. So a significant relation was observed between exercise /yoga and nutritional status.

**Table 2:** Do you worship/meditation?

BMI	Daily	4-5 days in a week	Frequently	Never	Total	Chi-square	P-value
Normal	63	33	42	32	170		
Underweight	61	27	49	60	197		
Overweight & Obesity	4	12	8	9	33		

Significance level=0.05\* significant at *p*<.05

Table-2 revealed the data on how much the youth worship/meditated basis their nutritional status. According to the collected data, only 39.39% of the overweight & obese children were found to worship & meditate frequently in a week. 30.96% of underweight children were also found to

worship & meditate daily. Similarly 37.05% of children having normal BMI were found to worship & meditate daily. So a strong significant relation was found in nutritional status and worship & meditation (chi-square-20.23552 and P-value-.002515).

**Table 3:** How much time do you watch TV in a day?

BMI	1-2 hours in a day	2-3 hours in a day	4-5 hours in a day	More than 5 hours in a day	Total	Chi	P-value
Normal	98	24	26	22	170	20.973	.00185*
Underweight	113	18	24	42	197		
Overweight & obesity	18	11	2	2	33		

Significance level=0.05\* significant at  $p < .05$

Table-3 shows the data on TV watching frequency of children on the basis of their nutritional status. According to the collected data majority of overweight & obese youth (54.54%) were found watching TV for 1-2 hours in a day.

More than half of underweight children (57.36%) and normal BMI range children (57.64%) watched TV for 1-2 hours in a day. Hence a significant relationship between nutritional status and watching TV can be concluded.

**Table 4:** How much time do you use mobile/internet?

BMI	1-2 hours in a day	2-3 hours in a day	4-5 hours in a day	More than 5 hours in a day	Total	Chi	P-value
Normal	77	38	28	27	170	5.94876	.42904
Underweight	75	43	41	38	197		
Overweight & obesity	11	7	5	10	33		

Significance level=0.05\* significant at  $p < .05$

Table-4 represents the data on the use of mobile/internet of children based on nutritional status. According to the data, 33.33% of overweight & obese youth were found to be used mobile/internet for 1-2 hours in a day. 38.07% of the

underweight children and 45.29% of normal BMI children were found using mobile/internet for 1-2 hours in a day. Hence, no significant relationship between nutritional status and use of mobile/internet was observed.

**Table 5:** How many times did you feel stressed and depressed during the past month?

BMI	Everyday	2-3 times in a week	Once in a week	Once in a month	Never	Total	Chi-square	P-value
Normal	24	54	43	24	25	170	22.658	.00383*
Underweight	38	59	55	10	35	197		
Overweight & Obesity	1	15	3	5	9	33		

Significance level=0.05\* significant at  $p < .05$

Table-5 shows the data on youth feeling stressed and depressed during the past month based on their nutritional status. Based on survey data, 45.45% of overweight & obese children were found to be stressed /depressed for 2-3 days in a week. 29.94% of underweight children were

stressed/depressed for 2-3 times in a week and 31.76% of normal BMI range also felt stressed/depressed for 2-3 times in a week. So, a significant relationship was found between feeling stressed / depressed and nutritional status.

**Table 6:** How many times do you eat fast food /junk food?

BMI	Everyday	2-3 times in a week	Once in a week	Occasionally	Total	Chi-square	P-value
Normal	10	83	28	49	170	50.814	<.00001*
Underweight	32	57	62	46	197		
Overweight & obesity	1	2	19	11	33		

Significance level=0.05\* significant at  $p < .05$

Table-6 revealed the data on fast food eating pattern of children on the basis of their nutritional status. According to the data, 57.57% of overweight & obese youth and 31.47% of underweight youth were found eat fast food once a week.

48.82% of children in Normal BMI range were found to eat fast food 2-3 times in a week .Hence, a high significant relationship was found between fast food habits and nutritional status.

**Table 7:** How many times do you play outdoor games/sports?

BMI	Everyday	2-3 times in a week	Once in a week	Once in a month	Never	Total	Chi-square	P-value
Normal	34	40	15	25	56	170	16.910	.03106*
Underweight	27	59	8	24	79	197		
Overweight & obesity	2	7	2	2	20	33		

Significance level=0.05\* significant at  $p < .05$

Table-7 related the data of children playing outdoor games /sports on the basis of their nutritional status. According to the survey data, 60.60% of overweight & obese youth were never found to play outdoor games. 40.10% of underweight youth and 28.42% of youth with normal BMI children were also never found to play outdoor games. There correlation was observed between outdoor games and nutritional status.

#### 4. Conclusion

Lifestyle and nutritional status are key indicators for all types of development of children. The lifestyle of the children have a special impact on their development and nutritional status. The present study findings indicate that greater than 50% of children (57.50%) of Meerut city of U.P. are Malnourished. Some studies done on nutritional status finding was 36.4% undernutrition reported by Mukhopadhyaya A *et al* (2005) <sup>[8]</sup> the present study finding indicates that high (49.25%) of Meerut city of U.P were undernutrition and 8.25% were found at the risk of overweight and obesity. The study found significant relationships between nutritional status and lifestyle variables i.e. exercise/yoga, worship/meditation, watching TV, stressed/depressed, outdoor games/sports, and junk food habits. No significant relation was observed between use of mobile/internet and nutritional status youth in the present study.

#### 5. Recommendation

Inadequate nutritional status and inadequate lifestyle among youth calls for development of an intervention program for promoting a healthy lifestyle, healthy eating habits to improve the nutritional status and positive thinking as a part of their life, because lifestyle and nutritional status are related to each other. Government should provide nutritional education and promote healthy lifestyle programs for school children and teachers also.

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