

Original Research Article

Assessment of Nutritional status of Rural and Urban school going girls (up to age 8 to 10 year) through Anthropometric Measurement

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Abstract

Nutrition is an essential field that examines the role of food and nutrients in sustaining life, promoting growth and preventing diseases. This study investigates the nutritional status of rural and urban school-going girls, focusing on their dietary habits, physical changes and overall health. The study utilized a comparative approach, collecting data from 40 school-going girls aged 8-10 years across rural and urban areas of Bhilwara district. The methodology involved interviews, structured questionnaires and anthropometric measurements to assess nutritional status. The results revealed stark differences in dietary practices and nutritional health between rural and urban girls. Urban girls exhibit higher awareness of diet-related health, consuming more balanced meals, dairy products and having greater exercise habits. Conversely, rural girls rely more on mid-day meal programs and homemade lunches, facing challenges such as insufficient water intake and irregular meal patterns. Physical changes were more frequently reported among urban girls, with 100% experiencing changes in height or weight, compared to only 20% in rural areas. Urban girls also demonstrated greater awareness of the impact of diet on school and sports performance, whereas rural girls showed limited awareness in these areas. Additionally, the prevalence of underweight was greater among urban girls. This study underscores the need for comprehensive strategies to address these disparities, focusing on equitable access to nutritious food, education, and healthcare. The development of nutrition education aids, such as posters and interactive teaching materials, serves as a critical tool for enhancing understanding and promoting healthier living pattern among school-going girls. By fostering greater awareness and engagement in nutrition-related practices, present piece of research contributes to improve the well-being of rural and urban school-going girls, ensuring a healthier life ahead.

Keywords: Nutritional status, Anthropometric measurement, adolescent girls, height and weight

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Introduction

Nutrition is an important field to promote overall well-being by ensuring a balanced intake of vital nutrients, including vitamins, minerals, proteins, fats and carbohydrates.

Food, obtained from both plant and animal origins, is essential for nourishment and sustaining life. Understanding the nutritional status of individuals is crucial, as it reflects their overall health based on dietary intake, body weight, and biochemical indicators. Common assessment methods include body mass index (BMI) and unintentional weight loss, which help identify malnutrition.

Under-nutrition is related to deficiency of one or more nutrients, leading to conditions such as underweight, stunting, and micronutrient deficiencies. Conversely, over-nutrition, characterized by excessive nutrient intake, contributes to overweight and obesity, which are associated with various non communicable diseases.

Anthropometric measurements serve as vital, non-invasive tools for assessing nutritional status in both children and adults. These measurements provide critical insights into growth, development and the risk of future health issues. Accurate assessments rely on standardized methods to ensure reliability and validity, which are essential for effective public health strategies.

The importance of nutrition cannot be overstated. It plays a fundamental role in maintaining health across all life stages, particularly during the formative school years, when proper nutrition is essential for physical and mental development. Research shows that nutritional deficiencies are related to poor school performance.^[1, 2]

Adequate nutrition is very crucial specially for girls who are vulnerable. This vulnerability is compounded by social, economic, and cultural factors that often limit their access to essential nutrients. Globally, girls face unique challenges regarding nutrition.^[3,4] In many regions, gender discrimination results in unequal access to food, education, and health care. In low- and middle-income countries, girls may receive less nutritious food than boys due to traditional beliefs that prioritize male offspring. This disparity can lead to nutritional deficiencies, stunted growth, and increased

susceptibility to illnesses. Furthermore, during adolescence, girls experience significant changes in their nutritional requirements, particularly due to the onset of menstruation, which increases the demand for iron and other essential nutrients.

Iron deficiency anaemia is particularly of more concern as it is associated with poor academic performance and productivity. On the other hand, the rise of weight gain among adolescent girls, particularly in urban areas, poses a growing public health challenge.^[5]

The implications of inadequate nutrition extend beyond individual health; they also impact broader societal outcomes. School drop out rate is more in girls with poor nutritional status, thereby perpetuating cycles of poverty and limiting their future opportunities. Furthermore, malnourished females are more prone to complications during pregnancy and childbirth, which affects maternal and child health outcomes. Taking some solid action to sort out these problems is essential not only for enhancing the health of girls but also for achieving gender equality and sustainable development goals.

Given these challenges, comprehensive strategies are required to improve health status and productivity of adolescent girls. Interventions must be multifaceted, addressing the underlying causes that are determinant of poor health to nutritious foods, education, and healthcare services. Community engagement and education are critical for changing societal norms that perpetuate gender disparities. Additionally, policies aimed at improving food security and promoting healthy dietary practices must prioritize the nutritional needs of girls.

In conclusion, the nutritional status of girls is a complex problem which needs urgent action from policymakers, health practitioners, and communities. By recognizing and addressing the unique challenges that girls face regarding nutrition, we can promote better health outcomes and empower future generations. This thesis aims to explore the various factors influencing the nutritional status of girls and to propose actionable recommendations for improving their health and well-being. Through this work, we

hope to contribute to a broader understanding of the significance of nutrition in fostering equitable and sustainable development.

Justification of Study

Adequate nutrition is essential during childhood and adolescence, as these are periods of rapid physical, cognitive, and emotional development. Poor nutrition, whether in the form of under-nutrition, micro-nutrient deficiencies, or over-nutrition, adversely affects growth, health, and productivity, while also perpetuating cycles of poverty and inequality. Girls often face unique challenges due to gender discrimination, which limits their access to nutritious food, healthcare, and education. Malnutrition not only impairs their academic performance and future opportunities but also increases the risk of complications in future reproductive age leading to poor birth outcomes. Moreover, the dual burden of malnutrition—under-nutrition in rural areas and rising trend of over-nutrition in urban population needs immediate action. These actions are part of Sustainable Development Goals (SDGs), specially those related to health, education, and gender equality. Despite its importance, there is a lack of context-specific research on the factors influencing girls' nutritional status, necessitating this study to bridge the gap. By identifying and addressing these issues, this research aims to inform policies and interventions that promote better health, educational outcomes, and equitable societal progress for girls.

The present piece of research work was proposed to be undertaken with the follow specific objective

- To find out knowledge of rural and urban adolescent females regarding nutrition
- To assess height and weight of rural and urban adolescent females through anthropometry
- To assess physical changes of rural and urban adolescent females
- To develop teaching aid on nutrition Education

Research Methodology

Details of methods of procedures adopted for conducting the investigation are presented under the following headings:

- Locale of the study and sampling procedure
- Development of research tool
- Procedure of data collection
- Analysis of data
- Statistical Analysis

Locale of the study and sampling procedure

The jurisdiction of the MDSU University is spread over six divisions in the state of Rajasthan i.e. Ajmer, Jaipur, Udaipur, Kota, Jodhpur and Bikaner. Out of this Ajmer division was selected purposively. In Ajmer division Bhilwara district will be selected purposively because the area is well known to the researcher.

Selection of Rural and Urban school area: In rural area firstly select panchayat samities. There are 12 panchayat samities in Bhilwara district, out of them one panchayat samities namely Aton was selected randomly.

Selection of sample: A list of school going girls in the age group of 8-10 years was prepared for selected villages for rural and urban school with the help of school headmaster. From each locality, a sample of 20 rural and urban school going girls who were willing to participate, ready to answer and cooperate with the investigator will be purposely included for study. Thus, the total sample of the study consisted of 40 school going girls - 20 rural, 20 urban.

Development of research tool

The details of the research tool for the present investigation are as under:

- **Interview schedule for general information of rural and urban school going**

girls: This section covered general information about the respondent's demographic details, including their age, nutritional status, weight, height, family type and size, as well as their sources of information.

- **Interview schedule to find out knowledge of rural and urban school going girls about nutrition:** This section involves the development of a knowledge test consisting of close-ended questions to find out the nutritional awareness of rural and urban school-going girls. The evaluation focused on two key components: nutritional status and physical changes of rural and urban school going girls.
- **Assess height and weight of rural and urban school going girls:** In this study, anthropometric measurements were used to assess the nutritional status (Table 1). In this following anthropometric parameters were taken -
 - Height measurement: It was measured using stadiometer to the nearest 0.1 cm and mean value of 3 readings was taken as final height measurement
 - Weight measurement: Weight was recorded in kilograms using a digital weight machine
 - BMI Calculation: BMI was calculated using the formula: $\text{Weight (kg)} / \text{Height (m}^2\text{)}$

S. No.	Age	Weight	Height
1.	7y	22.4 kg	47.7cm.
2.	8y	28. 1kg	50.5cm.
3.	9y	25.8kg	52.5cm.
4.	10 y	31.9 kg	54.5 cm.

Table 1: Standard height and weight of various age groups (Alice Cherian, 2015)

- **To assess the physical change of rural and urban and urban school going girls:** Assessing physical change of rural and urban school going girls by interview schedule and identify various physical changes
- **To develop teaching aid on nutrition education:** This section deals with the development teaching aid with poster and a knowledge test consisting of close-ended questions to find out knowledge and practices related to nutrition in

selected females

Procedure of data collection

Relevant data was collected from school-going girls in both rural and urban areas using interviews schedule through a structured questionnaire. Nutritional status was assessed by measuring height and weight and education was provided by audio visual aids such as posters. The interview was taken in the local language. The responses of responded were recorded by the researcher and each respondent was interviewed individually at their school.

Data was collected in following steps

- Data regarding knowledge of rural and urban school going girls in different areas was gathered by the use of developed knowledge test
- Data regarding height and weight was gathered by the use of height and weight scales
- Data regarding physical changes of rural and urban school going girls collected through knowledge test
- Design teaching aid on nutrition education based on knowledge gap identified

Analysis of data

Measurement of independent variables was done in following ways:

Demographic profile

Age: The respondents were grouped on the basis of their age in 2 groups:

- a) 5-8 years
- b) 9-10 years

Marital Status: Respondents were grouped into 2 categories:

- a) Married
- b) Unmarried

Education: Number of years of formal schooling completed by the respondents was categorized as a. Primary school, b. Middle school and c. Secondary school

Occupation: Subjects were categorized as wage earner and non wage earner as mentioned in following

Caste: Caste is determined by birth. There are 3 categories of caste: a. SC/ ST, b. OBC, c. GEN

Socio- economic status (SES): - For calculating SES, three categories were formed:

1. Low income group (<10000),
2. Middle income group (11000 – 25000)
3. Higher income group (>26)

Family Size and Type: Depending upon the composition and size of family, the respondents were categorized into Nuclear family, joint family, small (upto 4 members), medium (5-8 members) and large (9 or more members) family.

Media ownership: Information regarding media ownership such as access to smart phone, newspaper, magazine or radio and television was noted during interview.

Household assets: Information about mode of cooking (smokeless chullahs/ kerosene stove/ gas stove/ pressure cooker/ electrical kitchen equipment, large equipments was also recorded.

Measurement of Dependent Variables

a) Measurement of knowledge of rural and urban school going girls regarding nutritional status: Knowledge test comprised of 20 questions with maximum scores of 20 as shown in table 2:

S. No.	Component of Nutritional status	No. of Questions	Scores
1.	Knowledge about Nutritional status	10	10
2.	Knowledge about physical changes	10	10
	Total Score	20	20

Table 2: Component wise distribution of knowledge questions and scores (n=40)

Score for knowledge was divided into 3 groups as shown in table 3

S. No.	Categories	Knowledge score	Overall knowledge
1.	Poor	0-6	< 33%
2.	Average	7-13	33-66%
3.	Good	14-20	> 66%

Table 3: Score for knowledge divided into 3 groups

Statistical analysis

For analysis of collected data suitable statistical methods were used. *Frequency and percentage*: This method was used to analyze the data regarding demographic details and knowledge of respondents related to eating habits.

Results and Discussion

Data collected has been categorized and reported under following headings: -

1. Background information of the respondents
 - 1.1. Demographic details
 - 1.2. Family structure
 - 1.3. Media ownership
 - 1.4. Household assets
2. Knowledge of Rural and Urban school going girls regarding nutrition
3. Assessment of physical changes in rural and urban school going girls
4. Assessment of anthropometry of rural and urban school going girls
5. Development of teaching aid on nutrition Education

1. **Background information of the respondents:** This section deals with the demographic profile of the girls such as age, marital status, education, family occupation, caste, family size and type, possession of household assets, media ownership, socio-economic status, sources of information used and trainings attended.

1.1. Demographic details: Data has been presented in table 4.

1.1.1 Age: It was found that 50% of the girls were in the age group of 5-8 years and 8-10 years, while in urban area, 55% girls were in the age group of 5-8 years, while remaining 45% were in the age category of 8-10 years.

1.1.2 Marital status: All girls were unmarried.

1.1.3 Caste: It was observed that 85% girls belonged to SC/ST category in both rural and urban areas, while remaining 15% belonged to other backward classes. No respondent was from general category.

1.1.4 Occupation of respondents: With regards to occupational status in both area all of the respondents (100%) were wage earner.

1.1.5 Education: In rural area majority of respondents (85%) had primary education. Only 15% of the respondents showed level of literacy up to middle level while none of the respondents had secondary education. In the urban area majority of respondents (95%) had primary education 10 per cent had middle education and none of the respondents had secondary education.

1.1.6 Socio economic status: The data highlights the socio-economic status distribution across rural and urban respondents. In rural areas, the majority (80%) belong to the medium socio-economic status (SES) category, while only 20 per cent fall under the low SES category. Conversely, in urban areas, 60 per cent of respondents are in the medium SES category and 40 per cent were in the low SES group. No respondent belonged to higher income group, suggesting economic challenges are prevalent across both groups.

S. No.	Particulars	Rural		Urban	
1.	Age (in years)	f	%	f	%
	5-8 year	10	50	11	55
	9-10 year	10	50	9	45
2.	Marital status	f	%	f	%
	Unmarried	20	100	20	100
	Married	0	0	0	0
3.	Caste	f	%	f	%
	SC/ ST	17	85	17	85
	OBC	3	15	3	15
	GEN	0	0	0	0
4.	Occupation	f	%	f	%
	Non – Wage earner	0	0	0	0
	Wage earner	20	100	20	100
5.	Education	f	%	f	%
	Primary (1 to 4 th)	17	85	19	95
	Middle (5 to 7 th)	3	15	2	10
	Secondary (8 to 10 th)	0	0	0	0
6.	Socio economic status	f	%	f	%
	Low (<13)	4	20	8	40
	Medium (13-26)	16	80	12	60
	Above (>26)	0	0	0	0

Table 4: Background information of the respondents (n = 40)

1.2 Family structure

Particular	Rural		Urban	
Family Structure	f	%	f	%
• Family type				
○ Nuclear	15	75	4	20
○ Joint	5	25	11	55
• Family size				
○ Small (up-to 4 member)	15	75	4	20
○ Medium (5-8 member)	5	25	11	55
○ Large (9 and more)	0	0	0	0

Table 5: Family structure of respondents

Family Structure: Visualization of Table 5 depicts that 75% of the respondents belong to nuclear family and (25%) belonged to joint family. In urban area, 55% belonged to joint family and remaining were from nuclear family. Table 5 also shows that majority of the respondents from rural area (75%) had small family size, while 55% of the girls in urban areas had medium family size. None of them belonged to large families.

1.3 Media ownership: Data from table 6 reveals notable differences in media ownership between rural and urban areas. In rural areas, 40% had smartphone, while 25% had television. None of the respondents had radio, transistor, newspaper and magazine. In contrast, urban areas exhibit higher ownership rates, with 50% had smartphones and all of the respondents (100%) had television. None of the respondents had radio, transistor, newspaper and magazine.

1.4 Sources of information used by the respondents: Table 6 indicates various sources of information used by the girls from rural and urban areas. Television and radio were major source of information in rural (50%) and in urban (100%) areas. In rural areas, friends and neighbours were source of information as 20% while in urban areas, they played 100% showing culture of more social networking in urban areas. Progressive farmers, farmers fairs, Kisan Vigyan Kendra, and Kisan Call centres were also utilized

more by urban girls (25% each) as compared to rural girls (5% 10%). Notably, farm literature, agricultural supervisors, private agencies/NGOs, and research stations are not used in rural areas, though some urban respondents (25%) utilized these resources. This highlights a disparity in access to diverse information channels between rural and urban respondents.

1.5 Household assets: Visualization of table 6 provides clear understanding of the distribution of household items among respondents indicates varied levels of ownership. The majority own gas stoves (85% in one group and 50% in another), making it the most common item. Pressure cookers are moderately popular, with 50% ownership across both groups. Smokeless chullahs/kerosene stoves are less common, with 40 per cent ownership in one group and 100 per cent in another, possibly reflecting a targeted adoption program.

Improved kitchen tools (such as peelers and graters) and electrical kitchen equipment were owned by a smaller portion of respondents i.e. 15% and 25% in the rural and urban areas respectively. Specifically, small electrical kitchen equipment is owned by 5% in one group and 10% in another, while larger equipment has very minimal ownership. Refrigerators and sewing machines show the least ownership, with only 10 and 5%, respectively, highlighting potential gaps in household appliance access.

S. No.	Particular	Rural		Urban	
1.	Media Ownership	f	%	f	%
	1. Smart phone	0	0	0	0
	2. Newspaper/Magazine	0	0	0	0
	3. Radio/ Transistor	5	25	20	100
	4. Television				
2.	Source of information used by the respondents	f	%	f	%
	1. Farm Literature/ Newspaper/ Magazine	0	0	0	0
	2. T.V. and Radio	10	50	20	100
	3. Friends/ Neighbour's	4	20	20	100
	4. Progressive farmers	1	5	5	25
	5. Farmer's fair/ Exhibition	0	0	5	25
	6. Kisan Vigyan Kendra	2	10	5	25

	7. ATIC	0	0	0	0
	8. Kisan Call Canter and number	0	0	5	25
	9. Agriculture supervisors	0	0	5	25
	10. Private agencies/ NGOs	0	0	0	0
	11. Research stations	0	0	0	0
	12. Any other (state Dept)	0	0	0	0
	Household Items	f	%	f	%
	1. Smokeless chullah/ Kerosene stove	17	85	10	50
	2. Gas stove	10	50	10	50
	3. Pressure cooker	3	15	5	25
	4. Improved kitchen tools (peeler, grater etc)	1	5	2	10
	5. Electrical kitchen				
	a) Small equipment (fan, iron, mixer, etc.)				
	b) Large equipment (cooler, washing machine, churner etc.)	2	10	2	10
		0	0	1	5
	6. Refrigerator				
	7. Sewing machine				
3.					

Table 6: Access to information sources and household assets in rural and urban areas

2. **Knowledge of Rural and Urban school going girls regarding nutrition** Knowledge is the most important component of the nutrition status. Table 7 is showing the existing data regarding knowledge of the respondents presented as below:

S. No.	Particulars	Rural				Urban			
		Yes		No		Yes		No	
		f	%	F	%	f	%	f	%
1.	Daily eat food	18	90	2	10	20	100	0	0
2.	Take breakfast in the morning	19	95	1	5	20	100	0	0
3.	Eat in breakfast	12	60	8	40	19	95	1	5
4.	Take lunch to school	16	80	4	20	17	85	3	15
5.	Fruits in lunch to school	16	80	4	20	9	45	11	55
6.	Consume milk or dairy products regularly	15	75	5	25	17	85	3	15
7.	Water you drink throughout the day	10	50	10	50	9	45	11	55
8.	eat fast food or junk food	9	45	12	60	16	80	4	20

9.	Get mid-day meals in your school	19	95	1	5	10	50	10	50
10.	Eat in the evening	11	55	9	45	9	45	11	55

Table 7: Knowledge regarding nutrition in rural and urban school going girls

The table presents a nutritional status of rural and urban school-going girls based on their dietary habits. It highlights that while most rural (90%) and all urban girls (100%) eat food multiple times a day, a slightly higher percentage of urban girls (100%) consistently have breakfast compared to rural girls (95%). Urban girls also show a higher regular consumption of dairy products (85%) than rural girls (75%). However, rural girls are more likely to take lunch to school (80%) compared to urban girls (45%). Notably, urban girls have a greater tendency to consume fast food or junk food (80%) than rural girls (45%). In terms of water intake, both groups show inadequacy, with only 50% of rural and 45% of the urban girls drinking sufficient water daily. Mid-day meal programs benefit rural girls more (95%) than urban girls (50%). Evening meal patterns indicate that 55% of rural and 45% of urban girls have regular meals.

The findings suggest disparities in dietary habits, with urban girls leaning toward fast food consumption despite having better breakfast and dairy habits, while rural girls rely more on mid-day meal programs and homemade lunches. Both groups face challenges such as inadequate water intake and inconsistent evening meals, potentially affecting their nutritional Health.

3. Assess physical changes of rural and urban school going girls: In this section physical changes of school going girls were assessed through structured questions (Table 8):

S. No.	Particulars	Rural				Urban			
		Yes		No		Yes		No	
		F	%	f	%	f	%	f	%
1.	Noticed any changes in your height or weight in the past year	4	20	16	80	20	100	0	0
2.	Feel tired or weak during the day, especially during school or physical activities? How often	14	70	6	30	20	100	0	0

	does this happen								
3.	Diet impact on how you perform in school or in sports	5	14	15	75	19	95	1	5
4.	Any changes in your skin, hair, or nails.	4	20	16	80	19	95	1	5
5.	Noticing changes in your body (such as breast development, menstruation, or other signs of puberty)	1	5	19	95	1	5	19	95
6	Energy increase after eating	20	100	0	0	20	100	0	0
7.	Get stomach ache after eating junk food	2	10	18	90	15	75	5	25
8.	Exercise before eating food	13	65	7	35	17	85	3	15
9.	Weakness in your body when you run or play sports	16	80	4	20	13	65	7	35
10.	Include balance diet in our daily food consumption pattern	0	0	20	100	3	15	17	85

Table 8: Categorization of respondents according to their Physical changes (n=40)

The table 8 outlines the physical changes observed in rural and urban school-going girls, focusing on their perceptions and experiences. The findings reveal that all urban girls (100%) noticed changes in their height or weight in the past year, while only 20% of rural girls reported the same. Similarly, all urban girls (100%) reported feeling tired or weak during the day, compared to 70% of rural girls. Regarding the impact of diet on performance in school or sports, 95% of urban girls believed it plays a significant role, whereas only 14% of rural girls shared this view.

In terms of changes in skin, hair, or nails, 95% of urban girls attributed these to their diet, while only 20% of rural girls made the same connection. The onset of physical changes related to puberty was noticed by 5% of girls in both groups, indicating a shared trend. Interestingly, all girls (100%) in both rural and urban settings reported an increase in energy after eating.

When it comes to junk food, 75% of urban girls experienced stomach aches, compared to only 10% of rural girls. Exercise before meals was more common among urban girls

(85%) than rural girls (65%). Physical changes during sports activities were reported by 80% of rural girls and 65% of urban girls. Lastly, while none of the rural girls agreed with including balanced diets in their daily food patterns, 15% of urban girls showed agreement.

These results highlight significant differences between rural and urban girls in terms of their awareness of physical changes, dietary habits, and the relationship between diet and physical well-being. Urban girls appear to have a stronger awareness of diet's impact on their health and performance, while rural girls exhibit less awareness and engagement in certain health-related practices.

4. Overall knowledge of respondents

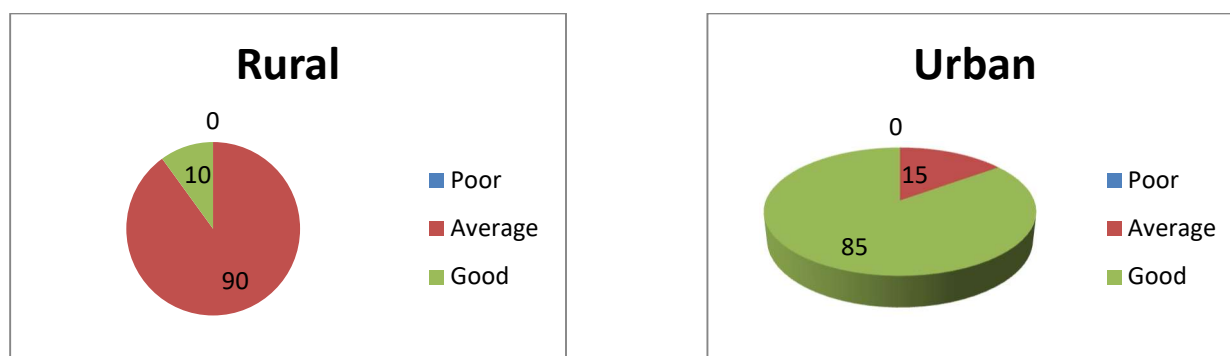


Figure 1: Categorization of respondents according to their knowledge (n=40)

The figure 1 highlights the disparity in knowledge levels between rural and urban respondents. Among rural participants, the majority (90%) were categorized as having "Average" knowledge (scores between 7-13), while only 10% demonstrated "Good" knowledge (scores between 14-20). In contrast, none of the rural respondents fell into the "Poor" category (scores between 0-6). On the other hand, urban respondents showed significantly higher knowledge levels, with 85% falling into the "Good" category and only 15% in the "Average" category. Similar to rural respondents, no urban participants were categorized as having "Poor" knowledge. This data underscores a notable gap in knowledge levels, with urban respondents displaying a considerably better understanding compared to their rural counterparts.

5. **Assessment of nutritional status through anthropometry:** In this section we assess height & weight of school going girls through anthropometric measurement.

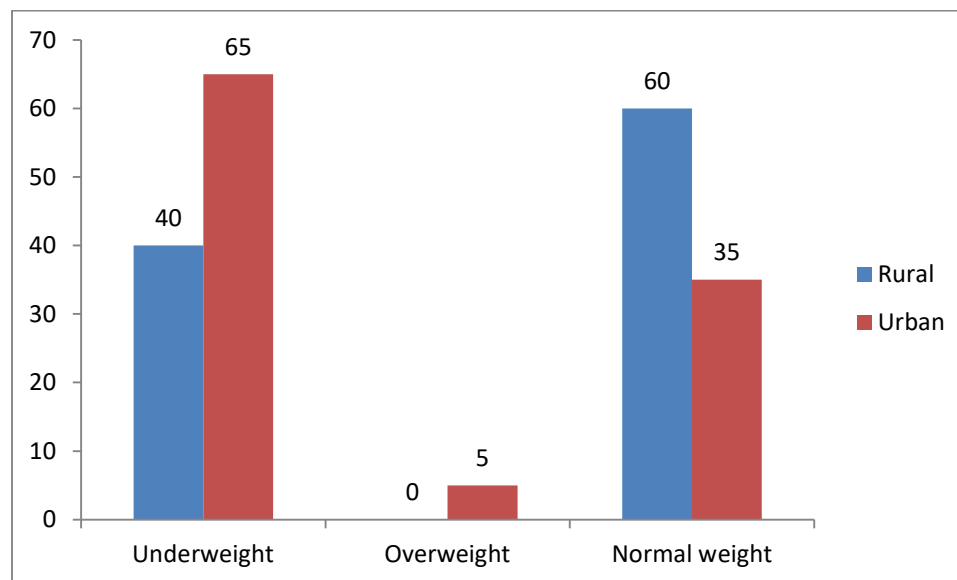


Figure 2: Categorization of respondents according to their height & weight assess through anthropometric measurement (n=40)

Figure 2 compares the weight status of rural and urban school-going girls based on the categories of underweight, overweight and normal weight. Among rural girls, 40% (8 out of 20) were underweight, whereas 60% (12 out of 20) showed normal weight, with no cases of overweight. In contrast, 60% (12 out of 20) of urban girls were underweight, 35% (7 out of 20) fall within the normal weight category, and 5% (1 out of 20) were overweight as was observed by Choudhary et al 2016 also.⁶

These findings indicate that underweight is more prevalent among urban girls than rural girls. Rural girls exhibit a higher percentage of normal weight compared to their urban counterparts. The single case of overweight is found only in the urban group. This suggests that urban girls may face greater challenges in achieving balanced nutrition and maintaining a healthy weight compared to rural girls.⁷

6. **Development of teaching aid on nutrition education:** Nutrition is the cornerstone of good health, influencing both our physical and mental well-being. A balanced diet provides the body with essential nutrients and energy, enabling it to

function effectively. However, consuming too much or too little food can lead to serious health complications. Overeating high-calorie, nutrient-poor foods such as pizza, fried chicken, and sugary beverages can result in overweight or obesity, which increases the risk of diabetes, heart disease, and joint problems. On the other hand, inadequate food intake may lead to being underweight, causing issues such as anemia, osteoporosis, a weakened immune system, and even long-term conditions like cancer. The key to a healthy life lies in moderation and balance, ensuring a diet rich in diverse nutrients while avoiding harmful extremes. By balancing our plates, we can balance our lives, safeguarding our health and preventing diet-related illnesses. To identify key learning areas and knowledge of respondents teaching aid was developed.

Conclusion

This study highlights the critical role of nutrition in maintaining health and well-being of rural and urban school-going girls. Two groups showed remarkable disparity in their knowledge and health status due to socio-economic factors, cultural norms, and limited access to nutritious resources. Urban girls exhibit greater awareness of balanced diets and healthy practices, whereas rural girls face challenges such as inadequate access to nutritious food, lower dietary diversity, and limited education on healthy nutrition.

Malnutrition, whether through under-nutrition or over-nutrition has significant impacts on physical development, emotional well-being, and future health outcomes. Rural girls benefit from mid-day meal programs and homemade lunches, which help bridge the nutritional gap, yet there is a pressing need for consistent and comprehensive solutions. In contrast, urban girls encounter issues such as higher consumption of fast food and insufficient water intake, highlighting the need for education on healthy lifestyle choices, including diet, exercise, and hydration.

The development of teaching aids, such as informative posters, serves as an effective tool for improving understanding and awareness of nutrition among girls. By fostering better nutritional practices, schools and communities can empower girls to make

healthier choices, contributing to their overall well-being. Addressing these nutritional needs through education, community involvement, and policy support is essential for breaking cycles of malnutrition and promoting sustainable development. By ensuring that both rural and urban girls receive adequate nutrition, we can create a more equitable and healthier future.

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