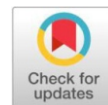


Original Research Article

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Dietary practices and nutritional awareness among adolescent girls: A comparative study

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ABSTRACT

Adolescence is the transitional period between childhood and adulthood, representing a critical window of opportunity to improve nutritional status and address poor dietary habits. The World Health Organization (WHO) defines an adolescent as any person between the ages of 10 and 19. The present study was conducted to assess the dietary practices and nutritional awareness of urban and rural adolescent girls in Ropar district, Punjab. Findings revealed that, compared to their urban counterparts, rural adolescent girls consumed fewer green leafy vegetables and fruits. A majority (77%) of rural adolescent girls demonstrated moderate nutritional awareness, whereas the majority (53%) of urban adolescent girls exhibited a high level of nutritional awareness. The study faced challenges such as gathering accurate self-reported information from adolescents and aligning research activities around school schedules. The research contributes by distinctly comparing urban and rural girls, highlighting dietary gaps and awareness differences, and providing evidence to design targeted, school-based nutrition education programs to improve dietary practices and foster long-term health benefits among adolescents.

Keywords: Adolescents, dietary practices, green vegetables, fruits, nutritional awareness and status.

INTRODUCTION

Adolescence, from ages 10 to 19, is a critical phase for developing lifelong health. Rapid growth impacts how adolescents think, feel, and behave. Nutritional deficiencies are common, especially iron deficiency anaemia in girls. Poor habits put both genders at risk for micronutrient deficits and obesity.

A healthy diet for adolescent girls should be balanced and varied, focusing on meeting the needs of growth and development during this period. This includes consuming adequate protein, calcium, iron, and other essential nutrients. Adolescent girls should prioritize foods such as fruits, vegetables, whole grains, lean protein sources, and dairy or fortified alternatives. Make choices from all food groups—fruits, vegetables, grains, protein foods, and dairy and fortified soy alternatives—every day. Each group gives you different nutrients and you need all of them. Eating a variety of healthy foods can offer numerous benefits, including increased energy, stronger bones, and healthier skin. A healthy diet helps to maintain or improve overall health. A healthy diet provides the body with essential nutrients: fluid, macronutrients, micronutrients, and adequate calories.

In recent years, growing concern has been raised regarding the dietary quality of children and adolescents. Although there have been significant efforts to promote healthier eating habits—such as encouraging a shift from fast food to more nutritious traditional meals—many young individuals still fail to adhere to established dietary guidelines.

Most children continue to lack healthy eating practices, with their diets often falling short in key nutrients. As they age, these issues tend to worsen, marked by a decline in the intake of fruits, vegetables, and milk, alongside an increase in the consumption of sugary beverages like soft drinks.

There is a high prevalence of the double burden of malnutrition—both undernutrition and overnutrition—among adolescent girls [1]. Consequently, there is an urgent need to modify and strengthen existing adolescent health programs in India to effectively address both ends of the nutritional spectrum. Thus, the present study aimed to evaluate nutritional knowledge among rural and urban adolescent girls.

MATERIAL AND METHODS

A sample of 60 adolescent girls was randomly selected as their subjects, 30 from rural areas and 30 from urban areas, enrolled in both government and private schools of Ropar District. Principals of the respective schools were approached for the preparation of list of the respondents. Adolescent girls from the class 8th 9th and 10th were approached to collect the sample. Data were collected with slightly modifications of the questionnaire [5] aimed at assessing the dietary practices of rural and urban adolescent girls. The specific objectives of the study are as follows:

1. To examine the general profile of adolescent girls in rural and urban areas.
2. To analyze the dietary practices of rural and urban adolescent girls.
3. To assess the level of nutritional awareness among rural and urban adolescent girls.

RESULTS AND DISCUSSION

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Table 1: To study general profile of rural and urban adolescent girls

Serial No.	Variable	Rural (n=30)		Urban (n=30)		Total (n=60)	
		F	%	F	%	F	%
1.	Age						
	11-14 years	20	66.66	24	80	44	73.33
	14-17 years	10	33.33	6	20	16	26.66
2.	Level of Education						
	VIII class	0	0	5	16.66	5	8.33
	IX class	28	93.33	18	60	46	76.66
	X class	2	6.66	7	23.33	9	15.0
3.	Type of Family						
	Joint	25	83.33	4	13.33	9	15.0
	Nuclear	5	16.66	26	86.66	51	85.0
4.	Fathers education						
	Illiterate	25	83.33	4	13.33	29	48.33
	Primary School	2	6.66	2	6.66	4	6.66
	Middle School	2	6.66	5	16.66	7	11.66
	High School	1	3.33	10	33.33	11	18.33
	College education	-	-	9	30.0	9	15.0
5.	Mothers Education						
	Illiterate	24	80.0	5	16.66	29	48.33
	Primary School	3	10.0	3	10.0	6	10.0
	Middle School	2	6.66	6	20.0	8	13.33
	High School	1	3.33	10	33.33	11	18.33
	College Education	-	-	6	20.0	6	10.0

According to Table 1, the maximum number of respondents in both urban and rural areas were between the ages of 11 and 14 years, accounting for 80% and 66% respectively. The educational level of the respondents was categorized into three groups: 8th class, 9th class, and 10th class. In rural areas, the maximum number of respondents (93.33%) was enrolled in 9th class, followed by 6.66% in 10th class, and none in 8th class (0%). In urban areas, the majority (60%) were also in 9th class, followed by 23.33 per cent in 10th class, and 16.66 per cent in 8th class.

Table 2: To study the dietary practices of rural and urban adolescent girls

S, No.	Dietary food habits	Rural Population (n=30)			Urban Population		
		F (%) Daily	F (%) Occasionally	F (%) Never	F (%) Daily	F (%) Occasionally	F (%) Never
1.	How often do you eat cereal or pulse products	6 (20.0)	18 (60.0)	6 (20.0)	8 (26.66)	17 (56.66)	5 (6.66)
2.	How often do you eat green leafy vegetables	7 (23.33)	19 (63.33)	4 (13.33)	18 (60.0)	9 (30)	2 (6.66)
3.	How often do you eat fruits	3 (10.0)	22 (73.33)	5 (16.66)	22 (73.33)	6 (20.0)	2 (6.66)
4.	How often do you drink milk	8 (26.66)	13 (43.33)	8 (26.66)	13 (43.33)	7 (23.33)	10 (33.33)
5.	How often do you eat sweets	2 (6.66)	24 (80.0)	4 (13.33)	4 (13.33)	21 (70.0)	5 (16.66)
6.	How often do you eat eggs	5 (16.66)	13 (43.33)	12 (40.0)	11 (36.66)	14 (46.66)	5 (16.66)
7.	Do you skip your meal in the name of fasting.	2 (6.66)	8 (26.66)	20 (66.66)	11 (36.66)	16 (53.33)	3 (10.0)
8.	How often do you drink tea/coffee	11 (36.66)	11 (36.66)	8 (26.66)	8 (26.66)	15 (50.0)	7 (23.33)
9.	How often do you eat non veg foods	6 (20.0)	23 (76.66)	1 (3.33)	8 (26.66)	19 (63.33)	3 (10.0)
10.	Do your family members force you to eat more.	8 (26.66)	15 (50.0)	7 (23.33)	23 (76.66)	7 (23.33)	0 (0)
11.	Do you follow three meal pattern per day.	16 (53.33)	14 (46.66)	0 (0)	25 (83.33)	5 (16.66)	0 (0)
12.	How often do you drink cool beverages	15 (50.0)	15 (50.0)	0 (0)	27 (90.0)	3 (10.0)	0 (0)
13.	How often do you consume variety of foods.	9 (30.0)	9 (30.0)	12 (40.0)	15 (50.0)	11 (36.66)	4 (13.33)
14.	How often do you eat junk foods	14 (46.66)	2 (5.0)	14 (46.66)	23 (76.66)	2 (6.66)	5 (16.66)
15.	How often do you suffer from any health issue	0 (0)	28 (93.33)	2 (6.66)	0 (0)	18 (60.0)	12 (40.0)

With regard to the type of family structure was concerned, the maximum number of respondents in rural areas (83.33%) belonged to joint families, while only 16.66% were from nuclear families. This indicates a preference for joint family systems in rural areas compared to nuclear families. In contrast, in urban areas, the maximum number of respondents (86.66%) belonged to nuclear families, with only 13.33% from joint families. This shift may be attributed to the gradual decline of the traditional joint family system, particularly in urban settings, where nuclear families are increasingly preferred for reasons such as improved personal harmony and reduced responsibilities.

Regarding the educational level of the respondents' fathers, in rural areas, maximum number of respondents i.e. 83.33% were illiterate, followed by 6.66% who had completed primary school, and with middle school education, and only 3.33% with high school education. In contrast, in urban areas, the highest proportion of respondents' fathers (33.33%) had completed high school, followed by 30% with college education, 16.66% with middle school education, 13.33% who were illiterate, and 6.66% with primary education.

In rural areas, 80 per cent of the respondents' mothers were illiterate, followed by 10% with primary education, 6.66% with middle school education, and only 3.33% with high school education. In contrast, in urban areas, the largest proportion (33.33%) of respondents' mothers had completed high school, followed by 20% with middle school education and 20 per cent with college education and 10 per cent had completed primary school, while 16.66% were illiterate.

Table 2 shows that in rural areas, more than half (60%) of the respondents reported consuming cereal and pulse products occasionally. Similarly, in urban areas, over 56.66% of respondents stated that they consumed these products occasionally. Regarding green and leafy vegetables, 63.33% of rural respondents reported consuming them occasionally, while 60% of urban respondents included green leafy vegetables in their daily meals. In both rural areas, 73.33% of respondents reported consuming fruits occasionally, whereas the same percentage (73.33%) of respondents consumed fruits daily in the urban area. Regarding milk consumption, 43.33% of respondents in both rural and urban areas drank milk occasionally, while the same percentage of urban respondents consumed milk daily. As for sweets, 80% of urban and 70% of rural respondents consumed them occasionally. When it comes to egg consumption, 43.33% of rural and 46.66% of urban respondents included eggs occasionally in their daily meal pattern.

In terms of meal skipping for fasting, 66.66% of rural respondents reported never skipping meals, while 53.33% of urban respondents said they occasionally skipped meals for fasting purposes. Regarding tea or coffee consumption, 36.66% of rural respondents consumed it either daily or occasionally,

compared to 50% of urban respondents who consumed it occasionally. For each food item, both urban and rural populations generally followed a three-meal pattern, consumed a variety of foods, and had access to options such as cool beverages and junk foods. Respondents were asked to indicate their meal patterns, specifically whether they consumed every meal regularly or if they skipped any meals in their daily routine. A study was conducted to study the nutritional status of adolescent girls residing in the urban field practice area of S.N. Medical College, Bagalkot [2]. The study found a prevalence of thinness and stunting at 25.8% and 29.3%, respectively. Anemia was the most common micronutrient disorder [2], affecting 55.5% of the participants, followed by tongue baldness (3.5%), goiter (2%), koilonychia (1.5%), and angular stomatitis (0.3%). No cases of Bitot spots were observed. These findings indicate a high prevalence of thinness, stunting, and anemia, reflecting poor nutritional status among adolescent girls in the study area. Rural adolescent girls - 14.9% of them were underweight for their age, and based on BMI, 25.2% were under-nourished and 3.7% were over-nourished. There is a high prevalence of undernutrition among adolescent girls and it is associated with micronutrient deficiencies like anemia [4]. Nutritional awareness should be done to improve the nutritional needs of adolescent girls in rural areas.

Table 3: To study the meal pattern of rural and urban adolescent girls

S. No.	Meal pattern	Rural Population (n=30)			Urban Population (n=30)		
		Daily F (%)	Occasionally F (%)	Never F (%)	Daily F (%)	Occasionally F (%)	Never F (%)
1.	Before Breakfast	22 (73.33)	7 (23.33)	1 (3.33)	10 (33.33)	18 (60.0)	2 (6.66)
2.	Breakfast	15 (50.0)	9 (30.0)	6 (20.0)	16 (53.33)	14 (46.66)	0
3.	Interval time	24 (80.0)	4 (13.33)	2 (6.66)	23 (76.66)	5 (16.66)	2 (6.66)
4.	Lunch	30 (100)	0	0	30 (100)	0	0
5.	Evening snacks	5 (16.66)	22 (73.33)	3 (10.0)	15 (50.0)	13 (43.33)	2 (6.66)
6.	Dinner	28 (93.33)	1 (3.33)	1 (3.33)	26 (86.66)	3 (10.0)	1 (3.33)
7.	Bed Time	4 (13.33)	25 (83.33)	2 (6.66)	15 (50.0)	10 (33.33)	5 (16.66)

Table 3 reveals that the overall meal pattern of adolescent girls was similar across both rural and urban areas. However, some respondents in rural areas reported skipping breakfast. In both groups, lunch was not skipped, primarily due to the Mid-Day Meal Programme, which ensures that students attending government schools receive lunch at school, leaving little opportunity to miss this meal. Compared to rural adolescent girls, urban adolescent girls were more consistent in following all seven recommended meal patterns.

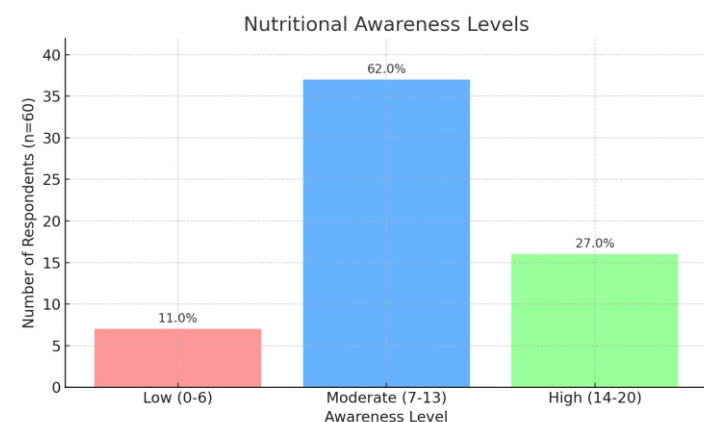


Fig 1: Distribution of Nutritional Awareness Levels Among Respondents (n=60)

Table 4 and Fig. 1 presents the distribution of respondents according to their level of nutritional awareness. The results clearly show that the majority (77%) of rural respondents had a moderate level of nutritional awareness, followed by 23% with a low level and none (0%) with a high level of awareness. In contrast, the majority (53%) of urban respondents demonstrated a high level of nutritional awareness, with none (0%) reporting a low level. Considering the total sample, the majority (62%) of respondents had a moderate level of nutritional awareness, followed by 27% with a high level and 17% with a low level of awareness.

Table 4: Distribution of respondents according to their nutritional awareness

S.No.	Nutritional awareness	Rural (n=30)		Urban (n=30)		Total (n=60)	
		F	P	F	P	F	P
1.	Low (0-6)	7	23.0	0	0	7	11.0
2.	Moderate (7-13)	23	77.0	14	47.0	37	62.0
3.	High Level (14-20)	0	0.00	16	53.0	16	27.0

The results of a study [3] indicated that thinness was significantly higher among adolescent girls from families with more than five members, those who attained menarche after the age of 11, and those who did not engage in regular physical activity.

A study [6] titled “*Determinants of School-Going Adolescent Girls' Health and Nutritional Status in District Malir, Karachi: A Baseline Cross-Sectional Study*.” The findings revealed a high prevalence of underweight among school-going adolescent girls, underscoring the need for targeted interventions. The study emphasized the importance of nutrition education to improve awareness of healthy dietary behaviors, influence food preferences, and ensure access to a safe, sufficient, and nutritious diet.

Useful tips for adolescent girls

- Nutritional requirements of growing adolescent girls require them to eat 3 regular meals a day with some snacks in between.
- Skipping meals will lead to a deficiency of vitamins, minerals, and carbohydrates, which in turn lead to a lack of energy and difficulty in concentration.
- Adolescent girls need iron-rich food to compensate for monthly period blood loss. Foods like meat, fish, green leafy vegetables, pulses, lentils, nuts, and seeds are good sources of iron.
- Drinking flavored waters, colas and sports drinks should be avoided as they can lead to weight gain. Eating an adequate amount of food at breakfast improves memory and concentration at school. It is the most important meal of the day and hence should not be skipped.
- Girls who eat breakfast regularly tend to have a healthier weight than those who skip it. Breakfast provides energy required for studying and playing.

Future scope of the study

Future research can be expanded by including data from multiple districts or states to enhance the generalizability of the data. A longitudinal approach could also be implied to understand dietary changes and nutritional awareness over time. Furthermore, qualitative research involving focus group discussions with adolescents, parents and teachers could provide additional insights to healthy eating and awareness. Additionally, interventions like school-based nutrition modules, peer-led education programs, and family centered initiatives can be designed to improve adolescent dietary practices.

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this research paper.

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