

## Assessment of Physical Activity and Dietary Practices of Institutionalized Adolescent Students Staying In Hostel

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### Abstract

The study to assess the nutritional status of adolescent students was conducted at the Institutionalized hostels of Chandra Shekhar Azad University, Kanpur, and Uttar Pradesh, India. In this study 70 members of adolescent Institutionalized hostellers students were selected and they were assessed for the nutritional status. The nutritional status was assessed with the help of their dietary intake using 24 hours recall method, anthropometry measurement, dietary assessment, along with nutritional knowledge (set of 70 questions to assess nutritional knowledge relating to balanced nutrition and health status). Students' general health status can be impacted by their dietary habits and lifestyle choices. According to the report which details the nutritional status of the hostler girls institutionalized as adolescents, 51.44% of the girls had a normal BMI, 18.57% were underweight, 17.14% were overweight, and 12.85% were obese and adolescent girls' food intake is 103.6% appropriate nutrition practices. This study identifies the pattern of food consumption among adolescents. Girls are better than in the proportion of consuming nutrients like Protein, Carbohydrates, Minerals, Vitamins, and Fats, dietary supplements in breakfast, and lunch habits. Displays data about participant's daily routines. Participant's physical activity was broken down into yoga, running/walking, dancing, gym, swimming, and any other activities. Girls performed yoga at a rate of 30%, while boys performed running/walking at a rate of 24.28%, while girls danced at a rate of 12.85%, and men participated in the gym at a rate of 8.57%. Adolescent girls did not participate in any of the other 8.57 physical activities.

**Keywords:** Nutrition Status; Adolescent; BMI; Anthropometry; Obese; Dietary Assessment; Knowledge; Physical Activity

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**Citation:** Devi KM, Mishra S (2023)

Assessment of Physical Activity and Dietary Practices of Institutionalized Adolescent Students Staying In Hostel. Health Sci J. Vol. 17 No. 9: 1059.

**Received:** 01 Sep-2023, Manuscript No. Iphsj-23-14061; **Editor assigned:** 03- Sep -2023, Pre-QC No. Iphsj-23-14061 (PQ); **Reviewed:** 17- Sep-2023, QC No. Iphsj-23-14061; **Revised:** 22- Sep-2023, Manuscript No. Iphsj-23-14061(R); **Published:** 29- Sep-2023, DOI: 10.36648/1791-809X.17.9.1059

### Introduction

The purpose of this study was to investigate how adolescents' eating habits and nutritional status relate to one another. As a result, increasing adolescent understanding of the value of good nutrition during the growth phase and understanding related to a healthy diet requires the collaboration of numerous parties. It is intended that more research will be done on additional elements that affect adolescents' nutritional condition. Expanding knowledge has a significant impact on how people live [1-3]. India is a developing nation whose way of life is changing significantly, especially with regard to how university students commute. Adolescents are becoming less physically active and are sitting down more often. Adolescents continue to be susceptible to issues with under- and overeating. The food served at their hostel should satisfy all of their daily nutritional needs because certain foods are served in insufficient quantities or with a poor

nutritional composition by the hostels.

University students are responsible and aware of the value of correct nutrition, but they frequently disregard healthy eating and diet. Girls who live in dorms typically eat from canteens where the food is prepared in an unclean manner, most of the vital nutrients are typically destroyed, and the food does not meet the students' nutritional needs. As it is common knowledge that students living in dorms can be classified as adolescents, extra eating time is necessary to meet the body's demands for growth. As a result of their increased food intake from academics and other university activities, students need to consume more nutrients. But due to the socioeconomic issues that are now plaguing underdeveloped nations, such as Kanpur, it is well known that students receive subpar nutrition because few people can afford to buy healthy food. As a result of inadequate food procedures, students living in hostels consume few nutrients [4].

Adolescents frequently experience nutritional issues. The double burden of malnutrition refers to this issue with adolescent's health. Many adolescents suffer from under nutrition and over nutrition, a condition known as the "double weight of malnutrition." Many nations, particularly low- and middle-income nations, experience this double weight. Malnutrition in Adolescents are an issue that is becoming more widespread [5].

Since habits formed during this period frequently last throughout the adolescent years, it is a vital time for promoting healthy eating and lifestyle choices. Food intake is influenced by a variety of factors, including as eating habits, snacking habits, nutritional understanding, and family economics (parents' jobs, the availability of food, living conditions, and parental income). Environment, agent, and host are indirect contributors. Nutritional requirements, metabolism, and physiology are examples of host factors. Agent factors include nutrients, including macronutrients like proteins, lipids, and carbs as well as micronutrients like vitamins and minerals. Ingredients in food, how it is processed, serving size, personal hygiene, and sanitation are all environmental influences [6].

Different anthropometric parameters, particularly weight and height, represent the physical development of adolescent girls. When a person is developing and in the college years, nutrition has a significant impact on the physical dimensions of the body. Both job capacity and cognitive abilities will be impacted by poor health and nutritional state. As children go through physical, mental, emotional, and social changes, this age group is a dynamic time of growth and development. Therefore, it is important to evaluate this demographic group's nutritional health. The adolescent girls who eat breakfast will eat fewer calories throughout the rest of the day. Skipping breakfast makes your body goes into starvation mode, leading you to compensate and overeat later in the day 1. In addition, it's not only eating a breakfast but eating a healthy well-balanced meal [7].

It is important to have a breakfast that consists of protein, grains (such as whole grain breads or cereals) and fruits. A combination of these types of foods helps to keep your energy level up throughout the day. Girls often skip breakfast in an attempt to manage their weight. By skipping breakfast, it can often lead to more snacking later on in the day, increasing food intake. Food and how it is consumed, digested, and assimilated are always a part of nutrition in order to supply our bodies with the right nutrients and protect them from various illnesses and infections. A physically and emotionally healthy atmosphere is encouraged through nutrition. In order to have a healthy life in society, one needs to eat properly [8-12].

Additionally, biochemical analysis, clinical observation, evaluation of fat and lean body mass, and other methods can be used to establish nutritional status. Additionally, measuring each

person's height and weight and determining their Body Mass Index (BMI) is the coolest and most straightforward way to determine the nutritional state of a community. The definition of kilograms per square meter is kilograms divided by height in meters (kg/m<sup>2</sup>). Malnutrition is a category for nutritional status that includes both under nutrition and overnutrition. The components of

diverse foods called nutrients are what fuel biological activity and are vital to our bodies. The body may become malnourished if the daily nutritional supplements required of dormitory girl students are not met. It may result in physiological system alterations, metabolic changes, and changes in body mass [13, 14].

One of the main factors contributing to nutrition-related health issues in individuals, particularly in adolescent girls who are away from home, especially in hostel girls, is inadequate food intake and poor eating habits (junk foods) at inappropriate and irregular schedules. The study's objective was to determine how often female university students were overweight or obese. According to their typical eating routines and body composition. Thus, including food in the diet reduces energy intake, aiding in weight management. We are aware that students who lived in dorms might need extra support for their academic performance to participate in extracurricular activities on campus. The food served in their dorms should satisfy their daily nutritional needs. Due to the inadequate nutritional makeup of some institutions' cuisine. The major objective of this study is to examine dormitory girls' knowledge, attitudes, and practices regarding their nutritional needs. The factors both directly and indirectly affecting dietary status [15-18].

## Materials and Methods

### Selection of Hostels

The present study was conducted at Institutionalized hostels of Chandra Shekhar Azad University Kanpur, Uttar Pradesh, India. A total of 70 adolescent girls' hostels students were selected for the study. A random selection method was used to select the students.

### Survey development and data collection

The pre-prepared questionnaire was developed to gather information on 70 girls of adolescent the students were selected for the study anthropometric measurements of nutrient intake and physical activity they were assessed for the nutritional status.

### Background information

The study was carried out from March, 2022 to March, 2023.

### Anthropometric measurements

Nutritional status is the condition of health of an individual as influenced by the utilization of nutrients. Anthropometric indices such as height, weight and body mass index (BMI) were measured and tabulated. Height of an adolescent is an important anthropometric measurement which sums up the linearity of the body. Weight is most useful anthropometric measurement which relates to the body mass as its potential value is not only appreciated by the health personnel, but often by parents from whom it is useful source of health information. BMI also known as Quetlet's index. It is defined as the ratio of weight in kilograms and height in meter square. The height and weight recorded earlier were used to evaluate BMI of students [1].

### Dietary assessment

Twenty-four-hour dietary recall method describes food and

beverages in detailed that an individual consumed in the past 24 hours. The interview is conducted in two ways of "starting to recall from the beginning of the recalling day" or "starting with the current day and works backward" and in general requires approximately 15 to 20 minutes by depending on the types and variety of the food that is consumed [19-22].

### Nutrient intake

Nutrient intake was calculated using ready reckoner developed by Department of Food Science and Nutrition, of Chandrasekhar Azad University Kanpur. Food frequency using frequency questionnaire, clinical examination by visual assessment, health problem by oral questionnaire and nutritional knowledge using questionnaire (set of 70 questions to assess nutritional knowledge relating to balanced nutrition and health status).

### Physical activity

In the developing years of college age, nutrition has a significant impact on how the body looks physically. Poor nutrition and health will have an impact on cognitive abilities as well as work capacity. And this age range is a period of dynamic growth and development as adolescent females go through physical, mental, emotional, and social changes [23, 24].

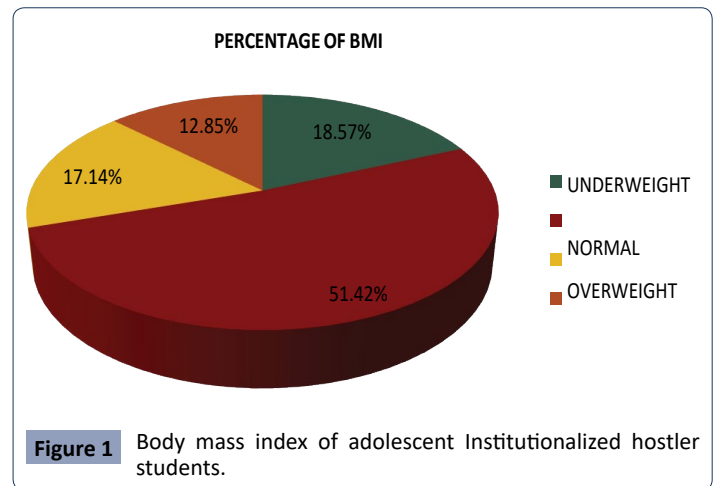
## Result and Discussion

The method of anthropometry is frequently employed to evaluate a girl's development and nutritional state. For monitoring nutritional status, such as underweight, overweight, and obesity, height and weight are the most helpful anthropometric measurements. As a result, the current study intends to thoroughly examine the knowledge, attitudes, and behaviours of hostel girls regarding nutrition, their dietary practices, and their level of physical activity, as well as the factors that influence their food selections (Table 1).

Table 1. Institutionalized Student Staying In Girls Hostels (N=70).

S.No.	Nutritional Status Of The Girls		
1	<b>Body Measurement</b>	Total	Percentage
	Underweight	13	18.57%
	Normal	36	51.44%
	Overweight	12	17.14%
	Obsess	9	12.85%
2	<b>Physical Activity</b>		Percentage
	Yoga	21	30%
	Gym	6	8.57%
	Dancing	9	12.85%
	Swimming	11	15.71%
	None Of Above	6	8.57%
3	<b>Dietary Intake</b>		Percentage
	Healthy Food	28	40%
	Junk Food / Fast Food	14	14.28%
	Both	31	44.28%
	Veg	22	31.42%
	Non-Veg	10	14.28%
	Only Egg	10	14.28%
	Both	9	12.85%
	All	24	24.14%

According to the report, which details the nutritional status of the Hostler girls institutionalized as adolescents, 51.42% of the girls had a normal BMI, 18.57% were underweight, 17.14% were overweight, and 12.85% were obese and adolescent girls' food intake is 103.6% appropriate nutrition practices. Info on physical activity levels 37.1% of the hostelled girls participated in various forms of physical activity (Figure 1).



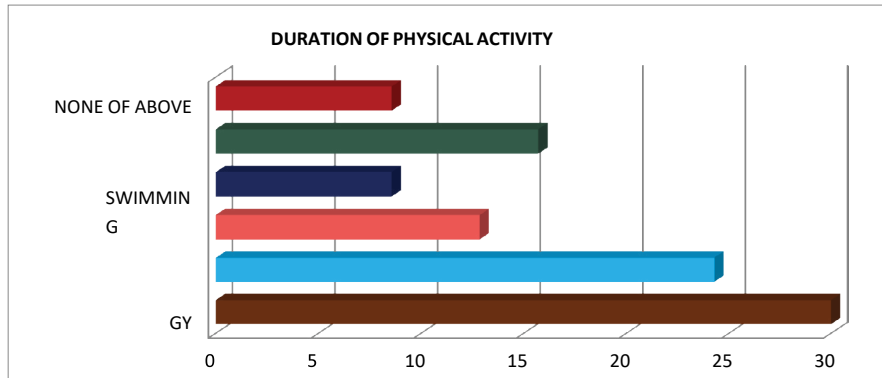
Different anthropometric parameters, particularly weight and height, represent the physical development of adolescent girls. In the growing years of college age, nutrition has a big impact on the physical measurements of the body. According to Figure 1, which presents the nutritional status of the adolescent institutionalized Hostler girls, 51.42% of the girls had normal BMI, 18.57% were underweight, 17.14% were overweight, and 12.85% were obese (Figure 2).

Figure 2 displays data about participants' daily routines. Participants' physical activity was broken down into yoga, running/walking, dancing, gym, swimming, and any other activities. Girls performed yoga at a rate of 30%, while boys performed running/walking at a rate of 24.28%, while girls danced at a rate of 12.85%, and men participated in the gym at a rate of 8.57%. Adolescent girls did not participate in any of the other 8.57 physical activities (Figure 3).

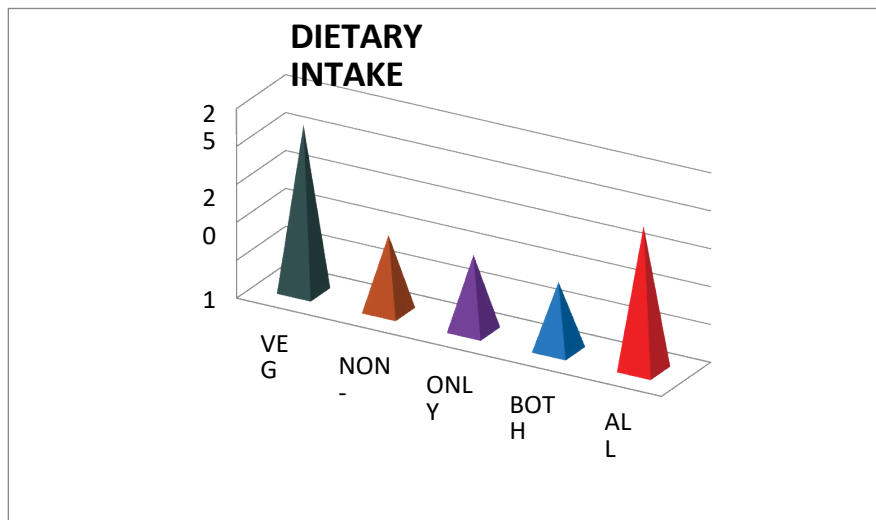
The results of the present study will be used to suggest modifications to the nutritional profiles of the girls by assessing their nutritional status and level of nutrition knowledge. Your lifestyle may be impacted by living on campus, which may alter your eating habits. Girls' eating patterns remain constant with their healthy eating habits throughout their collegiate careers. Conditions that encourage irregular mealtimes, skipping meals, and excessive snacking have a deleterious impact on university students, especially those living in hostels. According to Figure 3, the majority of people who had a high degree of knowledge about their health and diet had lower dietary intakes than vegetarians (31.42%), non-vegetarians (14.28%), and merely those who consumed eggs (14.28%).

### Health status for adolescent (Figure 4)

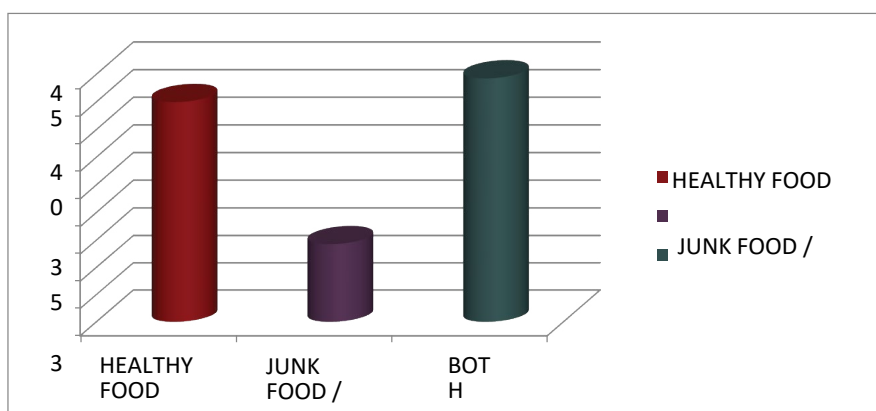
Adolescent girls' healthy eating habits are crucial because actions taken now will have an impact on their girls' eating habits and



**Figure 2** Duration of physical activity.



**Figure 3** Distribution of subjects according to the consumption of vegetarians, non-vegetarians and eggs.



**Figure 4** Distribution of subjects according to the consumption of healthy food, junk food /fast food and both.

overall health in the future. Therefore, the purpose of the current study was to evaluate nutritional and food intake. According to Figure 4, the majority of girls who had a high degree of knowledge about their health diet had dietary intakes than healthy food

(40%), junk food / fast food (14.28%), and merely those who consumed both (44.28%) (Table 2).

This study identifies the pattern of food consumption among adolescents. Table 2 shows that girls are better than in the

**Table 2.** Food consumption in pattern of adolescent's girls.

Items	Number of cases (%)
Do you know about nutrients like Protein, Carbohydrates, Minerals, Vitamins, and Fats?	
Yes	37.10%
Slightly	11.90%
Not at all	0%
Do you take any dietary supplements?	
Daily	27.30%
Once in a while	12.60%
Never	8.40%
Does your dietary pattern keep changing?	
Yes	30.80%
Once in a while	4.20%
Never	8.00%
All	5.60%
Do you ever feel tiredness, bloated, dizziness and weakness after eating hostel meal?	
Yes	9.10%
No	14%
Sometimes	25.90%

proportion of consuming nutrients like Protein, Carbohydrates, Minerals, Vitamins, and Fats .dietary supplements in breakfast, and lunch habits. Daily, Once in a while, Never is 27.3%, 12.6%and 8.45. The proportion of girls who consumes dietary pattern keep changing is Yes 30.8%, Once in a while 4.2%, Never 8%, All 5.6% higher than a girls which is you ever feel tiredness, bloated,

dizziness and weakness after eating hostel meal .Yes 9.1%, No 14%, Sometimes 25,9.The habit of eating fast food also shows the same [25].

## Conclusion

In the developing years of college age, nutrition has a significant impact on how the body looks physically. Poor nutrition and health will have an impact on cognitive abilities as well as work capacity. And this age range is a period of dynamic growth and development as adolescent females go through physical, mental, emotional, and social changes. Conditions that encourage irregular mealtimes, skipping meals, and excessive snacking have a deleterious impact on university students, especially those living in hostels. The results of the present study will be used to suggest modifications to the nutritional profiles of the girls by assessing their nutritional status and level of nutrition knowledge. Your lifestyle may be impacted by living on campus, which may alter your eating habits. Which presents the nutritional status of the adolescent institutionalized Hostler girls, 51.42% of the girls had normal BMI, 18.57% were underweight, 17.14% were overweight, and 12.85% were obese.

## Acknowledgement

I would like to thank the Faculty of Food and Nutrition, Babasaheb Bhimrao Ambedkar University, Lucknow, and Professor Sunita Mishra, Dean, Food and Nutrition, School of Home Science, Babasaheb Bhimrao Ambedkar University for supporting and providing all possible resources to undertake this research work.

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