

# Assessment of Dietary Habits and Nutritional Knowledge among Food and Nutrition Students

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## ABSTRACT

The prevention of lifestyle-related diseases and the maintenance of good health depend on good nutritional understanding and appropriate eating habits. This is particularly relevant for students studying food and nutrition as a major subject in their curriculums, as they are expected to possess both theoretical understanding and practical application of healthy eating behaviors. However, academic exposure to nutrition does not always translate into optimal personal dietary choices. In India, the situation is particularly concerning due to the double burden of malnutrition including both undernutrition, the rising prevalence of obesity and diet-related non-communicable diseases. Adolescents and young adults are at risk of developing poor dietary patterns, including high consumption of sugar-sweetened beverages, low intake of proteins and fibres, and inadequate hydration. This study aims to assess the dietary habits and nutritional knowledge of college-going girls pursuing studies in Home Science in which Food and Nutrition is one of the major subjects. By evaluating their meal patterns, food group intake, snacking behavior, awareness of dietary guidelines and self-perception of health, this research seeks to identify whether their theoretical knowledge is reflected in their dietary practices. The survey was conducted in Dayanand Mahila Mahavidyalaya, Kurukshetra and Hindu Girls College, Jagadhri during the academic year 2024-25. A total of eighty-two students were selected using purposive sampling, considering their relevance to the study focus. Questionnaire was developed to assess the young girl's demographic profile, dietary habits, nutritional knowledge and preferences with the help of Google form. The girls were fully informed of the purpose and procedure of the investigation and provided consent at the outset. After submission of the questionnaire their nutritional knowledge was assessed and analysed.

The results were analysed using arithmetic mean and standard deviation. A significant number of subjects still exhibit suboptimal practices like meal skipping, delayed eating and frequent dining out. The study reflects that even though these college students eat vegetables and choose whole wheat products, there are still some significant nutritional gaps in their total dietary intake pattern which include low fruit and protein consumption, suboptimal dairy intake and limited diversity in whole grain choices. Overall, the snacking and beverage patterns among these students reveal a combination of moderate hydration, occasional indulgence in unhealthy snacks and prevalent caffeine consumption, suggesting that while some healthy behaviors are present, there is ample scope for nutritional improvement. Overall, while a majority of the students demonstrated basic nutritional awareness and an intent to improve their habits, there are visible gaps in dietary implementation, supplement use and diet quality assessment. These findings underline the importance of converting academic nutrition knowledge into actionable, sustainable dietary behaviors. Thus, tailored strategies such as workshops, meal planning guides and motivational counselling may be beneficial for these students in future.

**KEYWORDS:** Dietary Habits, Nutritional Knowledge, Food and Nutrition Students.

## INTRODUCTION

Nutrition plays a pivotal role in the maintenance of health and the prevention of chronic diseases. Dietary habits formed during adolescence and early adulthood often persist into later life, making this period critical for the establishment of healthy eating patterns [1]. College students, particularly those studying Food and Nutrition as a subject, are expected to possess not only sound theoretical knowledge of nutrition but also to practice healthy dietary behaviors. However, evidence suggests that possessing nutritional knowledge does not always translate into appropriate eating habits [2].

Students studying Food and Nutrition as a subject are assumed to be better informed about the consequences of poor dietary practices. Despite this, many engage in behaviors such as meal skipping, irregular eating schedules, low intake of fruits and vegetables and increased consumption of processed and convenience foods [3]. Academic stress, peer pressure, availability of fast food, hostel living and time constraints often contribute to unhealthy dietary practices among college going students [4].

In India, the situation is particularly concerning due to the double burden of malnutrition including both undernutrition, the rising prevalence of obesity and diet-related non-communicable diseases. Adolescents and young adults are at risk of developing poor dietary patterns, including high consumption of sugar-sweetened beverages, low intake of proteins and fibres as well as inadequate hydration [5]. The dietary habits of students studying Food and Nutrition reflect not just their individual preferences, but also the effectiveness of the nutritional education they receive.

Understanding the gap between nutritional knowledge and dietary behavior is essential for improving educational programs. Studies have shown that even students in health-related disciplines often do not meet recommended dietary guidelines [6]. Moreover, even though students know a lot about nutrients and calories, they are often unsure or confused about whether their diet is truly healthy or not [7]. This discrepancy highlights the need for educational interventions that go beyond knowledge dissemination and incorporate behavioral change strategies.

This study aims to assess the dietary habits and nutritional knowledge of college-going girls pursuing studies in Home Science in which Food and Nutrition is one of the major subjects. By evaluating their meal patterns, food group intake, snacking behavior, awareness of dietary guidelines and self-perception of health, this research seeks to identify whether their theoretical knowledge is reflected in their dietary practices. The findings will provide insight into the effectiveness of current nutrition curricula and inform strategies to promote sustainable, healthy eating behaviors among future generation.

MATERIAL METHOD

**Procedure:** The survey was conducted in Dayanand Mahila Mahavidyalaya, Kurukshetra and Hindu Girls College, Jagadhri during the academic year 2024-25. A total of eighty-two students were selected using purposive sampling, considering their relevance to the study focus. Questionnaire was developed to assess the young girl’s demographic profile, dietary habits, nutritional knowledge and preferences with the help of Google form. The questionnaire included five sections each having five questions respectively. Questionnaire was shared with the selected participants to know their demographic profile, dietary habits, nutritional knowledge and preferences on an assigned day in a room. The girls were fully informed of the purpose and procedure of the investigation and provided consent at the outset. After submission of the questionnaire their nutritional knowledge was assessed and analysed.

**Statistical Analysis:** The results were analysed using arithmetic mean and standard deviation.

RESULTS & DISCUSSION

All the subjects were studying in undergraduate courses in Dayanand Mahila Mahavidyalaya, Kurukshetra and Hindu Girls College, Jagadhri. The results (Table 1) showed that the mean age of the subjects was 19.08±2.17years, height was 1.53±0.83m and weight was 46.91±697kg respectively. According to the present height and weight of the studied subjects their calculated mean BMI was 19.91±3.23kg/m<sup>2</sup> .

Table 1: Mean (S.D) Anthropometric Dimensions of the Selected Subjects

| Anthropometric dimension | Mean (± S.D) |
|--------------------------|--------------|
| Age                      | 19.08±2.17   |
| Height (meters)          | 1.53±0.83    |
| Weight (Kg)              | 46.91±697    |
| BMI (Kg/m <sup>2</sup> ) | 19.91±3.23   |

The dietary habits of the participants (Table 2) provide critical insights into their nutritional behavior. A majority of the respondents (47.6 per cent) reported consuming three meals per day, which is consistent with recommended dietary patterns. However, a noteworthy proportion (26.8 per cent) reported consuming more than three meals, suggesting possible inclusion of smaller, frequent meals; a practice that, when done healthfully, can support metabolism and satiety [8]. Alarming, 7.3 per cent of the students reported consuming only one meal per day, which may point to irregular eating patterns often linked with academic stress, time constraints, or body image concerns [2].

Breakfast, widely regarded as the most important meal of the day, was regularly consumed by 70.7 per cent of the students. This is a positive trend and aligns with evidence suggesting that regular breakfast consumption is associated with improved cognitive function, weight regulation and overall nutritional adequacy [9]. However, 6.2 per cent of students admitted to never eating breakfast, a habit often linked with increased risk of obesity and impaired glucose regulation [10].

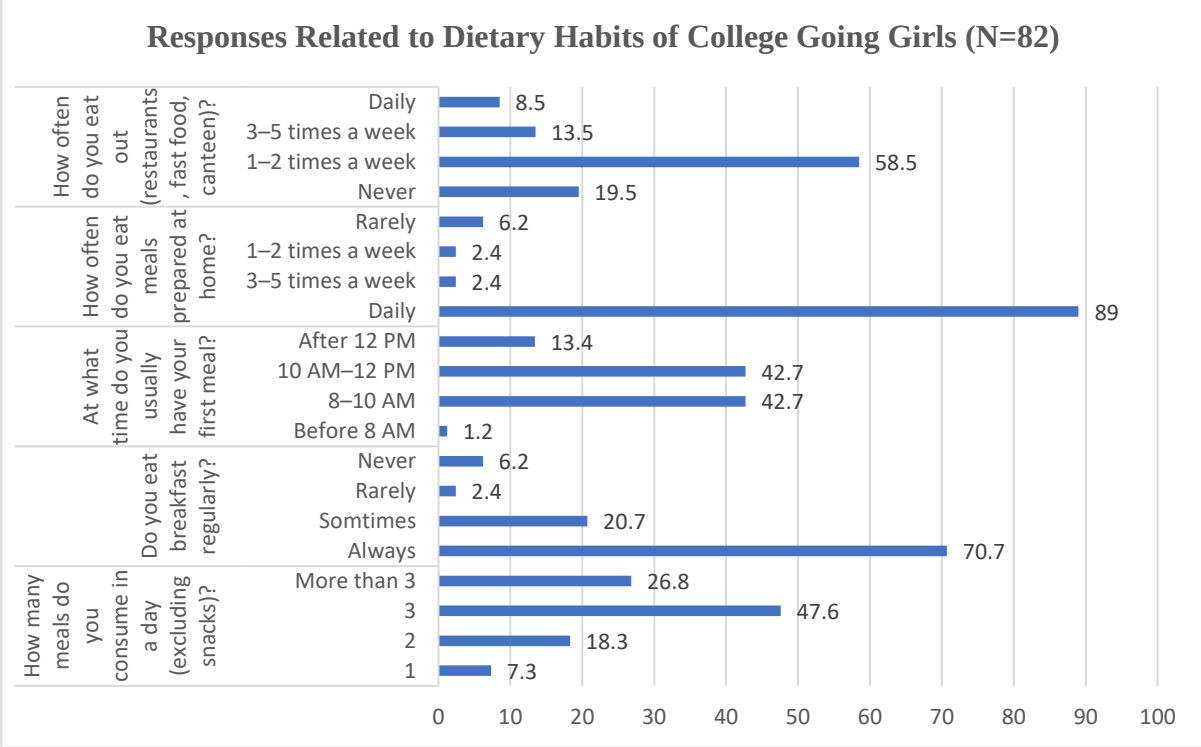
The timing of the first meal revealed that 42.7 per cent of participants had their first meal between 8–10 AM and an equal proportion (42.7 per cent) between 10 AM–12 PM. Delayed breakfast timing, particularly post-10 AM, may reflect lifestyle habits associated with late waking hours or class schedules. Only 1.2 per cent reported eating before 8 AM, highlighting a trend toward late breakfast timing among students.

In terms of meal preparation habits, an encouraging 89 per cent of participants reported eating homemade meals daily, indicating a preference for home-cooked food. This finding is significant, as home-prepared meals tend to be lower in sodium, trans fats, and added sugars compared to restaurant or packaged food [11]. However, 6.2 per cent stated they rarely consumed homemade meals, which could compromise dietary quality depending on their food choices outside.

Eating out remains prevalent, with 58.5 per cent of students reporting 1–2 times a week and 8.5 per cent doing so daily. While occasional eating out is common, frequent consumption of fast food is often associated with higher intake of saturated fats, sugars, salt and lower consumption of essential nutrients such as fiber, calcium and vitamins [12]. The 13.5 per cent of the subjects reported eating out 3–5 times a week.

**Table 2: Responses Related to Dietary Habits of College Going Girls (N=82)**

| Parameter                                                   | Responses        | Number (n) | Percentage (n/N×100) |
|-------------------------------------------------------------|------------------|------------|----------------------|
| How many meals do you consume in a day (excluding snacks)?  | 1                | 06         | 7.3                  |
|                                                             | 2                | 15         | 18.3                 |
|                                                             | 3                | 39         | 47.6                 |
|                                                             | More than 3      | 22         | 26.8                 |
| Do you eat breakfast regularly?                             | Always           | 58         | 70.7                 |
|                                                             | Sometimes        | 17         | 20.7                 |
|                                                             | Rarely           | 02         | 2.4                  |
|                                                             | Never            | 05         | 6.2                  |
| At what time do you usually have your first meal?           | Before 8 AM      | 01         | 1.2                  |
|                                                             | 8–10 AM          | 35         | 42.7                 |
|                                                             | 10 AM–12 PM      | 35         | 42.7                 |
|                                                             | After 12 PM      | 11         | 13.4                 |
| How often do you eat meals prepared at home?                | Daily            | 73         | 89                   |
|                                                             | 3–5 times a week | 02         | 2.4                  |
|                                                             | 1–2 times a week | 02         | 2.4                  |
|                                                             | Rarely           | 05         | 6.2                  |
| How often do you eat out (restaurants, fast food, canteen)? | Never            | 16         | 19.5                 |
|                                                             | 1–2 times a week | 48         | 58.5                 |
|                                                             | 3–5 times a week | 11         | 13.5                 |
|                                                             | Daily            | 07         | 8.5                  |



**Figure 1: Responses Related to Dietary Habits of College Going Girls (N=82)**

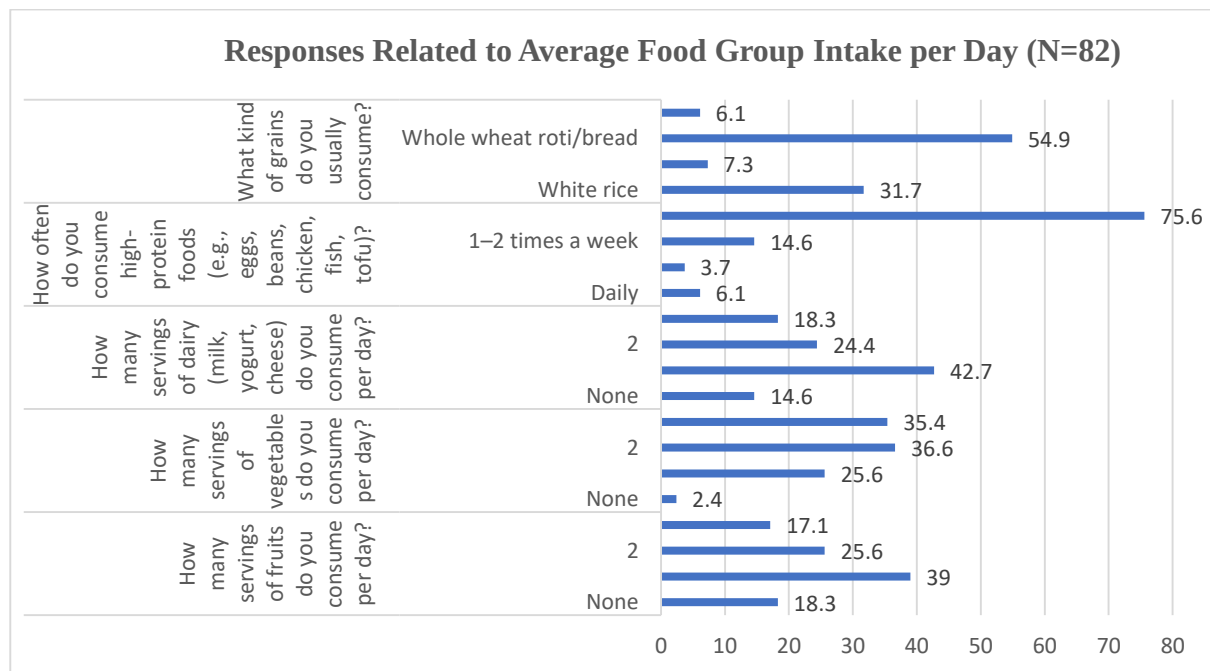
The dietary intake patterns of college-going girls, as revealed in Table 3, highlight several nutritional concerns as fruit consumption appeared inadequate in a significant portion of the sample. Only 17.1per cent of the subjects consumed three or more servings of fruits daily, while 18.3per cent reported not consuming any fruits at all and 39per cent consumed just one serving per day. These figures fall below the World Health Organization’s [13] recommendation of at least five servings of fruits and vegetables per day which help to prevent non-communicable diseases (NCDs). Low fruit intake, especially among adolescents and young adults, has been linked to deficiencies in key nutrients such as vitamin C, potassium and dietary fiber [14]. In contrast, vegetable intake was relatively better, with 35.4per cent of students consuming three or more servings per day and 36.6per cent consuming two servings. Only 2.4per cent of the subjects reported zero vegetable intake, suggesting a greater awareness or availability of vegetables compared to fruits. This is consistent with findings from Singh et al. (2021)[15], who observed that Indian female college students often show a preference for cooked vegetables as part of traditional meals. Nevertheless, a significant portion still does not meet the combined daily fruit and vegetable intake guideline, which may impact long-term health outcomes.

Regarding dairy consumption, 42.7per cent of respondents consumed one serving daily, while only 18.3per cent met or exceeded three servings per day, which is the recommended intake for young adults to ensure adequate calcium and vitamin D [16]. Alarmingly, 14.6 per cent reported not consuming dairy at all, which could elevate their risk for osteoporosis and other bone health-related issues in the future, particularly in females who are already at higher risk for calcium deficiency [17].

**Table 3: Responses Related to Average Food Group Intake per Day (N=82)**

| Parameter                                               | Responses | Number (n) | Percentage (n/N×100) |
|---------------------------------------------------------|-----------|------------|----------------------|
| How many servings of fruits do you consume per day?     | None      | 15         | 18.3                 |
|                                                         | 1         | 32         | 39                   |
|                                                         | 2         | 21         | 25.6                 |
|                                                         | 3 or more | 14         | 17.1                 |
| How many servings of vegetables do you consume per day? | None      | 02         | 2.4                  |
|                                                         | 1         | 21         | 25.6                 |
|                                                         | 2         | 30         | 36.6                 |
|                                                         | 3 or more | 29         | 35.4                 |
|                                                         | None      | 12         | 14.6                 |
|                                                         | 1         | 35         | 42.7                 |

|                                                                                       |                                      |    |      |
|---------------------------------------------------------------------------------------|--------------------------------------|----|------|
| How many servings of dairy (milk, yogurt, cheese) do you consume per day?             | 2                                    | 20 | 24.4 |
|                                                                                       | 3 or more                            | 15 | 18.3 |
| How often do you consume high-protein foods (e.g., eggs, beans, chicken, fish, tofu)? | Daily                                | 05 | 6.1  |
|                                                                                       | 3–5 times a week                     | 03 | 3.7  |
|                                                                                       | 1–2 times a week                     | 12 | 14.6 |
|                                                                                       | Rarely                               | 62 | 75.6 |
| What kind of grains do you usually consume?                                           | White rice                           | 26 | 31.7 |
|                                                                                       | Brown rice                           | 06 | 7.3  |
|                                                                                       | Whole wheat roti/bread               | 45 | 54.9 |
|                                                                                       | Refined flour (e.g., noodles, pasta) | 05 | 6.1  |



**Figure 2: Responses Related to Average Food Group Intake per Day (N=82)**

Protein intake patterns showed significant gaps. Only 6.1per cent of students consumed high-protein foods daily, while an overwhelming 75.6per cent reported consuming them rarely. These findings are aligned with broader reports highlighting a "protein gap" among young Indian women, due to dietary preferences, affordability issues and lack of emphasis on protein-rich foods in traditional vegetarian diets [18].

The responses related to grain consumption were more encouraging. Among the studied subjects 54.9per cent reported consuming whole wheat roti or bread, suggesting a moderate preference for whole grains. However, 31.7per cent of the respondents consumed white rice regularly and 6.1 reported frequent intake of refined flour products such as noodles and pasta. The low intake of brown rice (7.3per cent) reflects a general trend of limited whole grain diversification in Indian diets. While the preference for whole wheat is a positive sign, the reliance on white rice and refined grains indicates room for dietary quality improvement, especially since whole grains are associated with reduced risks of obesity, type 2 diabetes and cardiovascular diseases [19].

Table 4 highlights the snacking patterns and beverage consumption habits among college-going girls. A significant number of participants (50 per cent) reported snacking once a day, while 34.1per cent revealed that they rarely or never snack between meals. A smaller group (9.8per cent) snacked 2–3 times a day and 6.1per cent reported snacking more than three times a day. These patterns are relatively consistent with data from similar age groups, where snacking is often influenced by academic stress, peer behavior and accessibility of snack options [20]. While moderate snacking can support healthy metabolism if the snacks are nutrient-rich. However, frequent snacking especially on calorie-dense, low-nutrient foods can lead to excessive energy intake and poor dietary quality [21].

The type of snacks consumed further reflects dietary preferences. The most common snack choices were packaged snacks like chips and biscuits (36.6per cent), followed closely by healthier options such as fruits,



nuts or seeds (33per cent). Homemade snacks were consumed by 23.1per cent of the respondents, while only 7.3per cent reported having sweets or desserts as regular snacks. These findings suggest a mixed pattern, where some students opt for healthier choices while a substantial number still depend on processed, high-sodium and high-fat foods. A concern given the rising rates of overweight and metabolic syndrome in young adults [22].

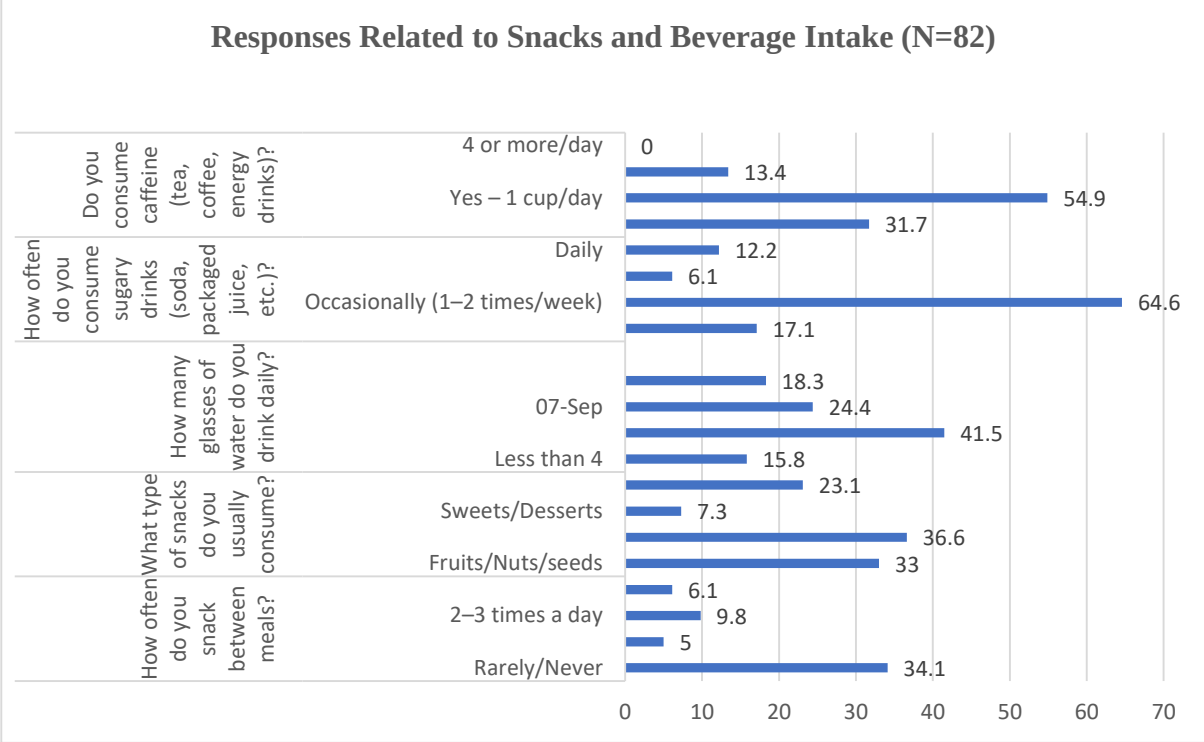
Hydration habits show that most participants had moderate water intake, with 41.5 per cent consuming 4–6 glasses and 24.4per cent drinking 7–9 glasses per day. However, 15.8per cent reported consuming less than 4 glasses daily, which is below the recommended daily fluid intake (approximately 2–2.5 liters) [23]. Dehydration can impair cognitive function, mood and overall well-being, particularly among students engaged in high mental activity [24]. Encouraging adequate water intake is thus crucial for both academic performance and general health.

When it comes to sugary beverage consumption, the majority (64.6per cent) of the respondents drank them occasionally (1–2 times per week), while 17.1per cent never consumed sugary drinks. However, 12.2per cent of the studied subjects reported daily intake, which is concerning, as frequent consumption of sugar-sweetened beverages has been linked to obesity, type 2 diabetes, and dental caries [25]. Although a large portion of participants avoided frequent consumption, the presence of daily consumers indicates a need for greater awareness regarding hidden sugars in drinks like packaged juices and sodas.

Caffeine consumption was common among the studied students. Among the students under investigation, caffeine use was widespread 54.9 percent of the individuals drank one cup each day, while 13.4 percent drank two to three cups, according to the statistics. A smaller group (31.7 percent) did not consume any caffeine at all. While moderate caffeine intake (up to 400 mg/day for adults) is generally considered safe and can enhance alertness and concentration, excessive intake may contribute to sleep disturbances, anxiety and dependency [26]. In the context of college students, caffeine is often used to combat fatigue, especially during exams.

**Table 4: Responses Related to Snacks and Beverage Intake (N=82)**

| Parameter                                                                   | Responses                        | Number (n) | Percentage (n/N×100) |
|-----------------------------------------------------------------------------|----------------------------------|------------|----------------------|
| <b>How often do you snack between meals?</b>                                | Rarely/Never                     | 28         | 34.1                 |
|                                                                             | Once a day                       | 41         | 50                   |
|                                                                             | 2–3 times a day                  | 08         | 9.8                  |
|                                                                             | More than 3 times a day          | 05         | 6.1                  |
| <b>What type of snacks do you usually consume?</b>                          | Fruits/Nuts/seeds                | 27         | 33                   |
|                                                                             | Packaged snacks (Chips/biscuits) | 30         | 36.6                 |
|                                                                             | Sweets/Desserts                  | 06         | 7.3                  |
|                                                                             | Homemade snacks                  | 19         | 23.1                 |
| <b>How many glasses of water do you drink daily?</b>                        | Less than 4                      | 13         | 15.8                 |
|                                                                             | 4-6                              | 34         | 41.5                 |
|                                                                             | 7-9                              | 20         | 24.4                 |
|                                                                             | 10 or more                       | 15         | 18.3                 |
| <b>How often do you consume sugary drinks (soda, packaged juice, etc.)?</b> | Never                            | 14         | 17.1                 |
|                                                                             | Occasionally (1–2 times/week)    | 53         | 64.6                 |
|                                                                             | Often (3–5 times/week)           | 05         | 6.1                  |
|                                                                             | Daily                            | 10         | 12.2                 |
| <b>Do you consume caffeine (tea, coffee, energy drinks)?</b>                | No                               | 26         | 31.7                 |
|                                                                             | Yes – 1 cup/day                  | 45         | 54.9                 |
|                                                                             | Yes – 2–3 cups/day               | 11         | 13.4                 |
|                                                                             | 4 or more/day                    | 00         | 00                   |



**Figure 3: Responses Related to Snacks and Beverage Intake (N=82)**

Table 5 provides important insights into the dietary preferences, supplements use and nutritional awareness of college-going girls studying food and nutrition. Interestingly, 68.3per cent of participants reported not following any special diet, while 31.7per cent followed a specific dietary pattern, such as vegetarian, vegan, or others. The prevalence of restrictive or alternative diets in this group may reflect personal beliefs, cultural values or emerging health trends. However, such diets require careful planning to prevent micronutrient deficiencies, especially in iron, calcium, and vitamin B12 [27].

Supplements use was reported by 39per cent of the respondents, while 61per cent did not take any supplements. This is concerning given the increased nutritional needs during adolescence and early adulthood, especially for females who are at higher risk of iron-deficiency anaemia and vitamin D deficiency [28]. The lack of supplementation, despite known vulnerabilities, may reflect either a gap in practical application of knowledge, accessibility or affordability issues. A study by Sharma and Choudhary (2020) [29] among Indian college girls found that even when nutritional awareness was present, it didn’t always translate into supplement use unless advised by a healthcare provider.

A noteworthy finding is that 72per cent of the participants claimed awareness of the recommended daily calorie or nutrient intake for their age group. This high level of awareness can likely be attributed to their academic background in food and nutrition. However, it is concerning that 47.6per cent were unsure whether their current diet is healthy and 6.1per cent clearly stated it was not. This discrepancy between knowledge and self-perception aligns with studies indicating that nutritional knowledge alone is often insufficient to ensure healthy dietary practices [30]. Factors such as stress, time constraints, peer influence and food preferences often override informed decision-making, even among students in health-related fields.

Importantly, 63.4per cent of respondents expressed a willingness to improve their dietary habits, showing openness to change and a positive outlook toward healthier behavior. Only 7.3per cent reported no interest and 29.3 per cent were undecided. This readiness to improve is promising and reflects potential for successful nutritional interventions if guided appropriately.

Table 5: Responses Related to Dietary Awareness and Preferences Among College Going Girls(N=82)

| Parameter                                                                 | Responses | Number (n) | Percentage (n/N×100) |
|---------------------------------------------------------------------------|-----------|------------|----------------------|
| Do you follow any special diet (vegetarian, vegan, keto, etc.)?           | No        | 56         | 68.3                 |
|                                                                           | Yes       | 26         | 31.7                 |
|                                                                           | Sometimes | 00         | 00                   |
| Do you take any dietary supplements (e.g., multivitamins, iron, calcium)? | No        | 50         | 61                   |
|                                                                           | Yes       | 32         | 39                   |
|                                                                           | Sometimes | 00         | 00                   |
| Are you aware of recommended daily calorie/nutrient intake for your age?  | No        | 23         | 28                   |
|                                                                           | Yes       | 59         | 72                   |
|                                                                           | Partially | 00         | 00                   |
| Do you feel your current diet is healthy?                                 | No        | 05         | 6.1                  |
|                                                                           | Yes       | 38         | 46.3                 |
|                                                                           | Not sure  | 39         | 47.6                 |
| Would you like to improve your dietary habits?                            | Yes       | 52         | 63.4                 |
|                                                                           | No        | 06         | 7.3                  |
|                                                                           | Maybe     | 24         | 29.3                 |

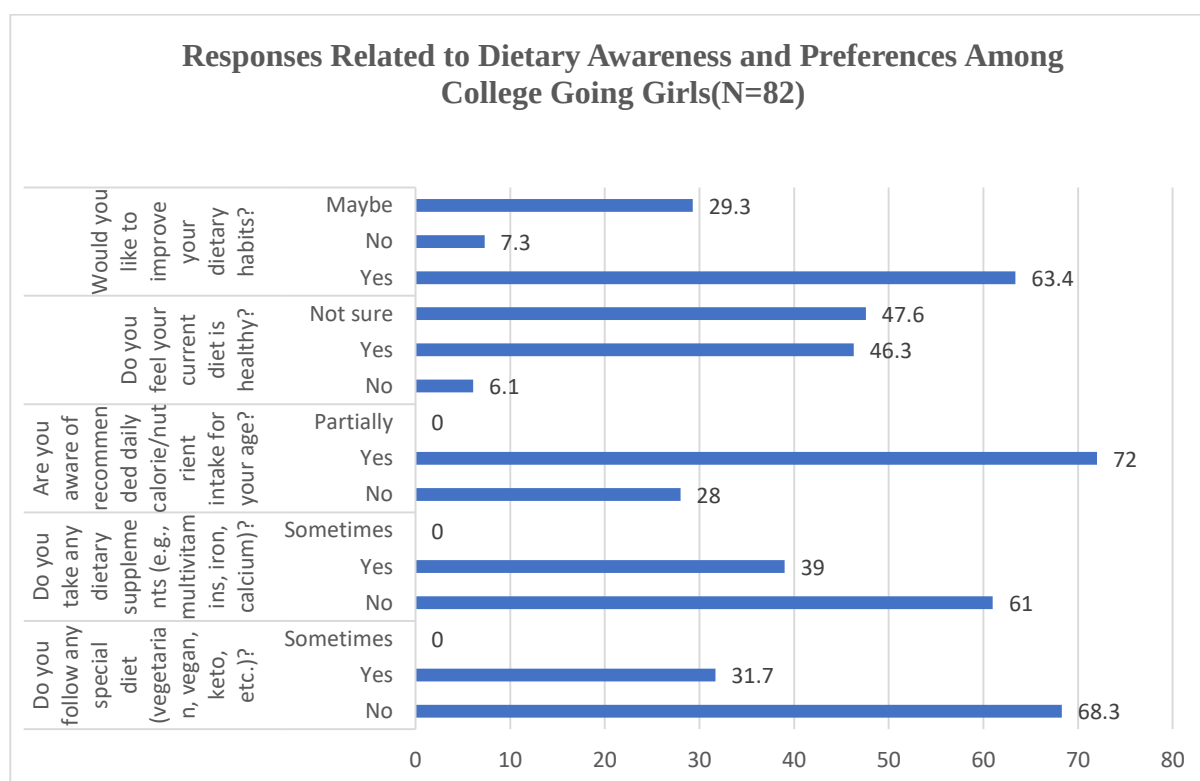


Figure 4: Responses Related to Dietary Awareness and Preferences Among College Going Girls(N=82)

## CONCLUSION

The findings of the present study suggest that a large proportion of students demonstrate some awareness of healthy dietary habits such as regular breakfast intake and preference for homemade meals. A significant number still exhibit suboptimal practices like meal skipping, delayed eating and frequent dining out. The study reflects that even though these college students eat vegetables and choose whole wheat products, there are still some significant nutritional gaps in their total dietary intake pattern which include low fruit and protein consumption, suboptimal dairy intake and limited diversity in whole grain choices. These findings call for targeted nutritional counselling, practical food planning strategies and reinforcement of dietary knowledge through behavior-based interventions.

Overall, the snacking and beverage patterns among these students reveal a combination of moderate hydration, occasional indulgence in unhealthy snacks and prevalent caffeine consumption, suggesting that while some healthy behaviors are present, there is ample scope for nutritional improvement. Interventions to



promote healthy snacking, discourage sugar-laden drinks and support adequate hydration could substantially enhance the dietary quality and long-term health of this population. Overall, while a majority of the students demonstrated basic nutritional awareness and an intent to improve their habits, there are visible gaps in dietary implementation, supplement use and diet quality assessment. These findings underline the importance of converting academic nutrition knowledge into actionable, sustainable dietary behaviors. Thus, tailored strategies such as workshops, meal planning guides and motivational counselling may be beneficial for these students in future.

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