



**ASSESSMENT OF NUTRITIONAL STATUS OF MILK INTAKE
AMONG SCHOOL GOING CHILDREN AGED 13-16 YEARS,
AMINPUR, PABNA**

BY

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Submitted to the Department of Nutrition and Food Engineering in the partial fulfillment of
B.Sc. in Nutrition and Food Engineering

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**FACULTY OF HEALTH AND LIFE SCIENCE (FHLS)
DAFFODIL INTERNATIONAL UNIVERSITY
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APPROVAL

This Project titled “**Assessment of Nutritional Status Of Milk Intake Among School Going Children Aged 13-16 Years, Aminpur, Pabna**”, submitted by **Mst Liza Akter, ID: 201-34-329** to the Department of Nutrition and Food Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Nutrition and Food Engineering and approved as to its style and contents.

EXAMINING COMMITTEE

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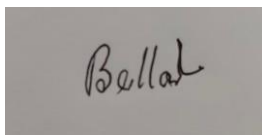
Faculty of Health and Life Science (FHLS)

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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Dr. Md. Bellal Hossain, Dean, Faculty of Health and Life Science (FHLS), Daffodil International University**. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Supervised by:



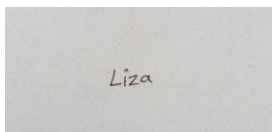
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ABSTRACT

This study aimed to assess the nutritional status associated with milk intake among school-going children aged 13-16 years in Aminpur, Pabna. A cross-sectional survey was conducted, gathering data on milk consumption patterns, dietary habits, and nutritional outcomes through anthropometric measurements and dietary recall. Findings revealed significant correlations between milk intake and various nutritional parameters, highlighting both positive and negative implications on the overall nutritional status of adolescents in the region. These insights underscore the importance of promoting balanced milk consumption alongside diverse dietary practices for optimal health outcomes among school-aged children. A cross-sectional survey was conducted to gather comprehensive data on milk intake patterns, dietary habits, and nutritional outcomes among the target population. Anthropometric measurements, including height, weight, and body mass index (BMI), were recorded to assess the physical growth and nutritional status of the participants. Additionally, dietary recall methods were employed to collect information on the frequency and quantity of milk consumption, as well as other dietary components. The findings of the study revealed interesting insights into the relationship between milk intake and various aspects of nutritional health among school-going adolescents. Firstly, it was observed that a significant proportion of the participants reported consuming milk regularly as part of their diet. However, there were variations in the frequency and quantity of milk consumption among individuals, influenced by factors such as socioeconomic status, dietary preferences, and access to milk sources. Further analysis revealed correlations between milk intake and nutritional outcomes. Adolescents who consumed milk more frequently tended to have higher intake of essential nutrients such as calcium, protein, and vitamins, contributing to better overall nutritional status. Conversely, those with limited or irregular milk consumption exhibited signs of nutritional deficiencies, including lower levels of calcium and vitamin D, which are crucial for bone health and overall growth during adolescence. Moreover, the study identified disparities in nutritional status based on gender and socioeconomic factors. Female participants, in particular, showed higher rates of inadequate milk intake compared to their male counterparts, potentially indicating gender-specific dietary behaviors or cultural influences. Similarly, adolescents from lower socioeconomic backgrounds were found to have limited access to milk and other nutrient-rich foods, predisposing them to a higher risk of malnutrition.

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CHAPTER 1

Introduction

1.1 Introduction

An essential method for determining the nutritional status is nutritional assessment [1]. An individual or group of people can be classified as malnourished, overnourished, or undernourished based on anthropometric, biochemical, clinical, and dietary data [2–3]. Chronic illnesses and infections may become more likely in cases of malnutrition [4]. Many diseases linked to health provide information regarding gastrointestinal health, including constipation, gas, diarrhea, and other issues including heart attacks, as well as nutritional and health status. The state of one's teeth and mouth also affects one's health [5]. Malnutrition among children is a serious issue that negatively impacts children's health in poor nations. To ascertain the frequency of nutritionally linked issues in the nation, assessments had to be conducted at every level [6]. An individual's health is the major metric used to uphold a level of living. Health is wealth, so the saying goes. As a result, our first concern is health, which might reveal a person's nutritional state [3]. Obesity and malnutrition are not risks for someone in optimal health and body weight [7]. Thus, in order to satisfy the demands of daily living, a balance needs to be maintained. Obesity may result from over nutrition [8]. Children who are underweight are more likely to suffer from infections, anemia, and anorexia, among other chronic disorders [9–10]. Child malnutrition is one of the main causes of underweight [11]. The study's goal was to evaluate school-age children's nutritional status and food intake. The study will serve as the foundation for further research aimed at enhancing the nutritional status of school-age children.

Nutrition plays a crucial role in the growth and development of school-going children, particularly during their formative years. Assessing the nutritional status of milk intake among children aged 13-16 years is essential for understanding their dietary habits and ensuring they receive adequate nutrients for optimal health and academic performance. This assessment delves into the consumption patterns, nutritional adequacy, and potential impact of milk intake on the overall well-being of adolescents within this age group.

- **Importance of Nutritional Assessment:** Understanding the nutritional status of school-going children helps identify any deficiencies or excesses in their diet, enabling timely interventions to promote better health outcomes.

- **Role of Milk in Adolescent Nutrition:** Milk is a significant source of essential nutrients such as calcium, protein, and vitamins crucial for bone health, muscle growth, and overall development during adolescence.
- **Challenges and Barriers to Milk Intake:** Socioeconomic factors, dietary preferences, and cultural influences may impact the consumption of milk among adolescents, posing challenges to ensuring adequate nutrient intake.
- **Implications for Health and Well-being:** Poor nutritional habits during adolescence can have long-term effects on health, including increased risk of nutritional deficiencies, obesity, and related health complications.
- **Potential Interventions and Recommendations:** Based on the assessment findings, targeted interventions can be devised to promote healthy milk consumption habits among school-going children, fostering improved nutritional status and overall well-being.

1.2 Justification

Nutrition begins at the pre-conception and conception phases and lasts through childbirth, adolescence, and adulthood. It crosses generational boundaries. Girls who are undernourished have a higher chance of continuing to be undernourished and giving birth to kids that are underweight [12]. The evaluation of children's nutritional status can be used to gauge their quality of life. Children that have a strong nutritional status will ultimately live healthier lives and produce healthy future generations. The school-age years are crucial for a child's social, mental, and physical development [13].

In Bangladesh, the assessment of nutritional status concerning milk intake among school-going children aged 13-16 years is of paramount importance. Bangladesh, despite notable progress in various sectors, still faces challenges related to child malnutrition and inadequate dietary practices. Understanding the patterns of milk consumption and its impact on the nutritional well-being of adolescents within this age group is crucial for addressing these challenges effectively.

- **Nutritional Challenges in Bangladesh:** Bangladesh grapples with various nutritional challenges, including stunting, wasting, and micronutrient deficiencies, which significantly affect the health and development of children and adolescents.

- **Milk as a Nutrient Source:** Milk serves as a vital source of essential nutrients such as calcium, protein, and vitamins, which are crucial for addressing malnutrition and supporting healthy growth among adolescents.
- **Socioeconomic Factors:** Socioeconomic disparities often influence dietary practices, including milk intake, among school-going children in Bangladesh. Accessibility, affordability, and cultural preferences play pivotal roles in determining consumption patterns.
- **Impact on Academic Performance:** Nutritional adequacy, including sufficient milk intake, is linked to cognitive development and academic performance. Addressing nutritional deficiencies can potentially enhance learning outcomes among school children.
- **Government Initiatives and Programs:** Bangladesh has implemented various initiatives and programs aimed at improving nutrition and health outcomes among children and adolescents. Assessing milk intake among school children can inform the design and implementation of targeted interventions.
- **Community Engagement and Awareness:** Community participation and awareness campaigns are essential for promoting the importance of milk consumption and advocating for healthy dietary practices among adolescents.
- **Future Directions:** Through comprehensive assessment and strategic interventions, Bangladesh can address nutritional challenges effectively, ensuring that school-going children receive adequate nutrients from milk intake, thus fostering their overall health, development, and academic success.

1.3 Research Objectives

The primary objective of this study is to assess the nutritional status of milk intake among school-going children aged 13-16 years in Bangladesh. Specifically, the study aims to:

1. Determine the average daily consumption of milk among adolescents in the target age group.
2. Evaluate the nutritional adequacy of milk intake in terms of essential nutrients such as calcium, protein, and vitamins.
3. Identify socio-economic factors influencing milk consumption patterns among school children.

4. Assess the impact of milk intake on the nutritional status and overall health of adolescents.
5. Explore any existing barriers or challenges hindering optimal milk intake among school-going children.
6. Provide recommendations for targeted interventions and policy measures to promote healthy milk consumption habits and improve the nutritional status of adolescents in Bangladesh.

By achieving these objectives, the study aims to contribute valuable insights into addressing nutritional deficiencies and promoting better health outcomes among school children in Bangladesh.

CHAPTER 2

Background Study

2.1 Literature Review

Childhood is a particularly valuable phase when the body accumulates a large amount of nutrients needed for puberty. A body may have negative health impacts, such as diminished work capacity, difficulty concentrating, and development retardation, if it does not retain adequate nutrients throughout time [14].

Malnutrition may take many different forms. For example, children who are slender and lean may not consume enough food or nutrients, whereas children who are overweight may consume too much fat, salt, and sugar, which raises their risk of developing chronic illnesses. Children are lacking in vitamins and minerals in both situations. Malnutrition and diet are the two main risk factors for the global illness burden, and each nation is dealing with a severe problem [15]. The primary cause of the emergence of non-communicable illnesses is poor dietary practices [16].

It's crucial to understand nutrition in order to encourage wholesome eating [17]. To alter eating patterns, one must have a positive outlook and understand nutrition [18]. Research revealed that youngsters in developing nations tend to choose unhealthy foods because they have incorrect perceptions about and ignorance about good meals [19].

The notion of food has shifted in the media from one of feeding and growth to one of enjoyment and pleasure [20]. The National Nutrition Survey of Pakistan states that 33% of children are underweight, 15% have wasting, and approximately 44% are stunted. Comparing Pakistan to other emerging nations, there hasn't been much of a decline in the incidence of malnutrition in the past 20 years [21].

Early childhood growth failure can be overcome throughout adolescence, but it requires a significant catch-up in development. Optimal nutrition in the 18–24 months leading up to menarche causes a notable catch-up growth [22]. Anthropometry and food habits are two key factors in the many methods used to evaluate the state of nutrition. While there are many factors

included in anthropometry measures, height and weight are the most crucial. Stunting, wasting, and underweight are the metrics used to evaluate children's nutritional status [23].

Only a small number of research on school-age children were done to determine the severity of the issue; the majority of material is centered on the under-5 group. The goal of the current study is to evaluate the nutritional health of school-age children, namely those between the ages of 8 and 16. Analyzing the prevalence of malnutrition in school-age children is helpful. In order to prevent and treat malnutrition, parents can therefore be made aware of nutrition.

CHAPTER 3

Methodology

3.1 Activities

In this area, I worked. I encountered many schools going student types in the outdoor area. Considering my topic is the health issues and nutrition facts of milk consume among the secondary school students. I consequently encountered these students primarily. When I was visiting the houses of students in Aminpur, Pabna, I went to know the student families and talked to them to learn about their current health, nutritional requirements, and complications. I then recorded that information. I visited 160 houses. Moreover, keep an eye on their diet dairy. I started visiting the whole area as part of my daily visiting. Visits to each and every houses are compulsory of every surveyor. Inquiring about their current health, dietary needs, and issues as I made my way around the area. I spoke with the families and made notes of what I learned. Pay attention to their diet log in their paperwork as well.

3.2 Work Processes

This research process at Aminpur, Pabna can be summarized using the following steps:

- Making questionnaire
- Visiting schools
- Visiting houses
- Interaction with families
- Data collection
- BMI, BMR calculations
- Data Normalization
- Data Visualization
- Statistical Analysis
- Estimation of energy requirements
- Establishing food exchange list
- Establishing menu planning

3.3 Data Collection

This research process at Aminpur, Pabna Data collection sample is following:

Table 3.1 Format of data collection form

SL	Description	Data Type
1	Gender	Text
2	Age	Numeric
3	Education	Text
4	Class	Text
5	Monthly income	Text
6	Mother profession	Text
7	How much cow do you have in your home?	Numeric
8	How many litters of milk a day?	Numeric
9	How many litters of milk do you sell per day?	Numeric
10	How much milk do you keep for yourself?	Numeric
11	How many members in your family?	Numeric
12	How often does your child consume milk in a week?	Text
13	When does your child usually consume milk?	Text
14	What type of milk does your child usually consume?	Text
15	Why does your child drink milk?	Text

16	Are you aware of the nutritional benefits of drinking milk?	Text
17	Do you have access to milk at school?	Text
18	If Yes, how often do you consume milk at school?	Text
19	Does your child consume dairy products other than milk?	Text
20	Are there any reasons why does your child might not drink milk?	Text
21	Hight	Numeric
22	Weight	Numeric
23	What is your BMI?	Numeric

3.4 Data Collection Calculation:

In our study, we have calculated the data to be collected from the local area of Aminpur, Pabna.

We know,

$$n = \frac{z^2 * p * q}{d^2}$$

Here,

n = sample size

z = the standard normal deviate, usually set at 1.96, which corresponds to the 95% confidence

p = the proportion in the direct population estimated to have a particular characteristic. We use 0.28 as 28% child receive appropriate diet according to UNICEF [23].

$$q = 1 - 0.28$$

$d = 0.01$ (that is margin of error 1%)

After all calculation we got, $n = 77.45 \sim 78$. This study will considered $78 * 2 = 156$ records for covering both male and female body.

3.5 Research Timeline

The timeline of this research is showing in below chart.

Table 3.2 The time table of the project

SI No	Activities	Months of the year											
		January 2024				February 2024				March 2024			
Weeks		1	2	3	4	1	2	3	4	1	2	3	
1	Review of literature/Proposal writing												
2	Designing and Developing questionnaire												
3	Recruitment of Field Investigator Training and field testing the questionnaire												
4	Field work/Data collection												

5	Data editing and data entry to Computer											
6	Data analysis											
7	Draft report preparation											
8	Dissemination of findings											

CHAPTER 4

Results and Discussion

4.1 Results and Discussion

In this segment, I have generated some visualization of graph with my collected data. I have noted the datapoints of every student and updated in database. I have used Microsoft Excel for generating easy graph and charts.

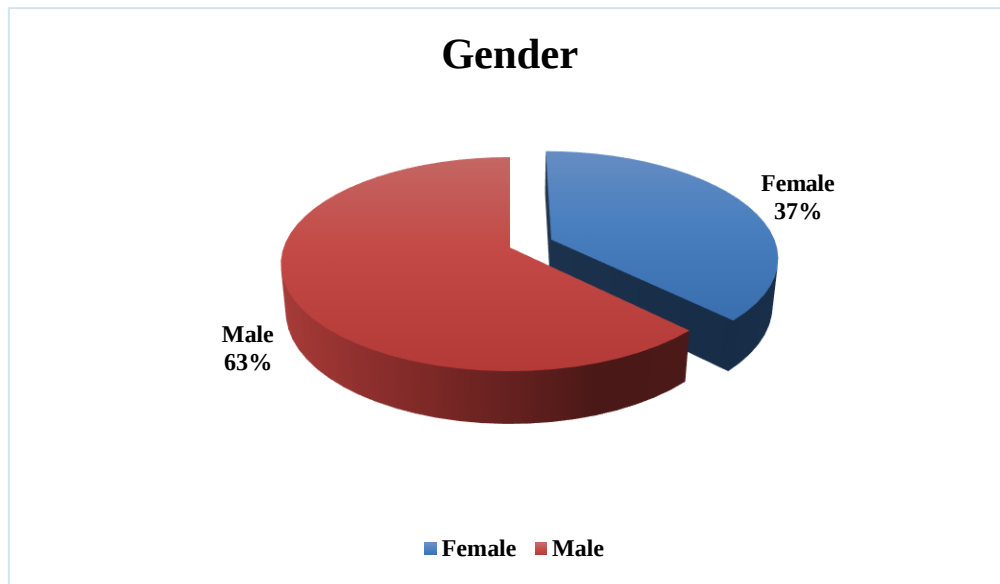


Figure 4.1. Gender distribution of the dataset

Figure 4.1 presents the count of individuals based on gender, with 60 identified as female and 100 as male. In terms of percentages, this translates to approximately 37.5% of the total population being female and around 62.5% being male. This gender distribution indicates a higher representation of males compared to females within the dataset. The disparity between the two genders suggests potential variations in gender participation or representation within the context of the study or population being examined. Understanding these gender demographics is essential for ensuring comprehensive analysis and consideration of gender-specific factors in any subsequent analyses or interventions.

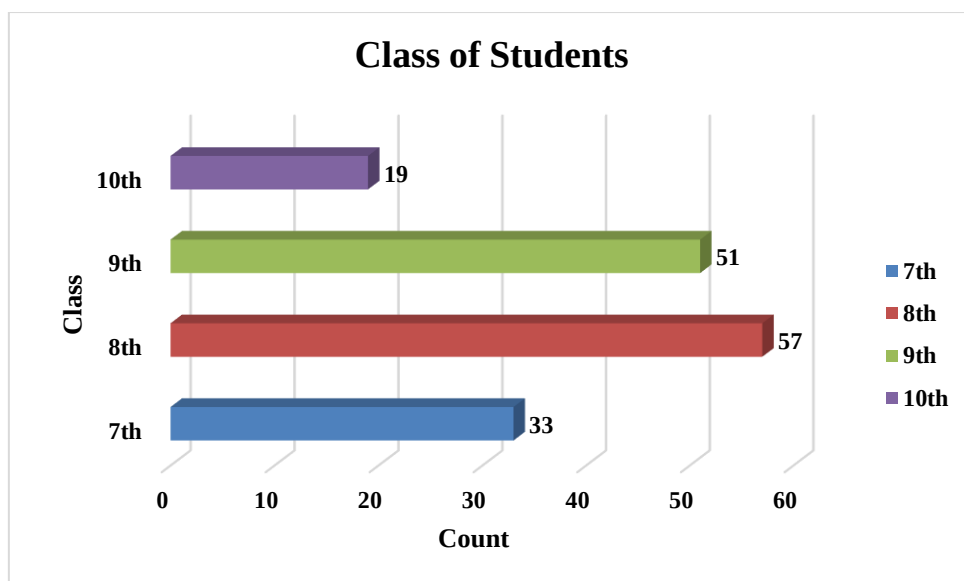


Figure 4.2. Class distribution of the students

Figure 4.2 represents the count of students participating in the study across different classes. Specifically, there were 33 students from the 7th grade, 57 from the 8th grade, 51 from the 9th grade, and 19 from the 10th grade.

In terms of interpretation:

- The 7th grade had the smallest participation with 33 students, making up approximately 20.5% of the total participation.
- The 8th grade had the largest participation with 57 students, accounting for around 35.4% of the total.
- The 9th grade had 51 students participating, representing about 31.7% of the total.
- The 10th grade had the fewest participants with 19 students, comprising approximately 11.8% of the total.

This breakdown provides insights into the distribution of participants across different grade levels, which is essential for understanding the representation and potential implications of the study findings within each grade cohort.

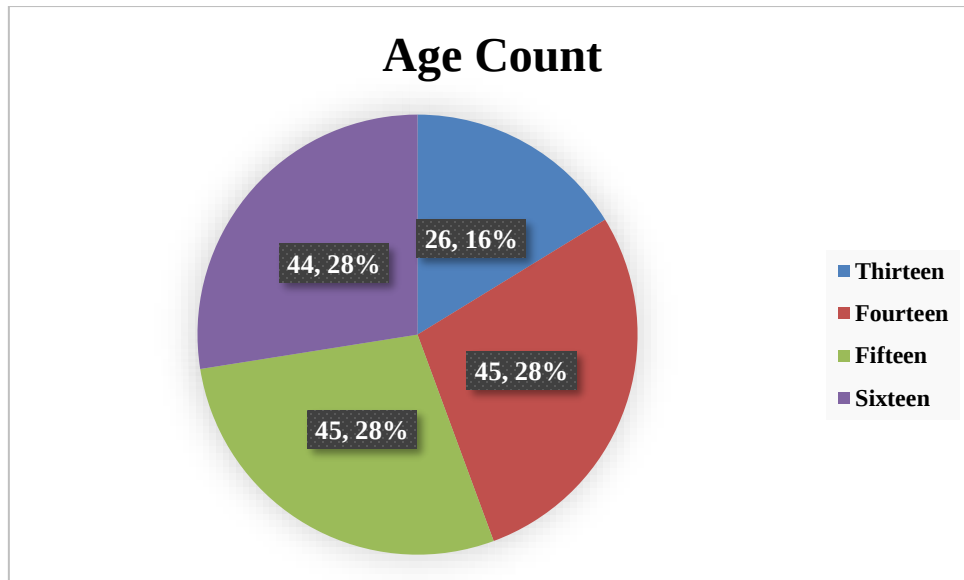


Figure 4.3. Age distribution of the students

Figure 4.3 represents the count of participants in the study categorized by age groups. Specifically, there were 26 participants aged thirteen, 45 aged fourteen, 45 aged fifteen, and 44 aged sixteen.

Interpreting the data:

- Participants aged fourteen and fifteen had the highest representation, each comprising approximately 28% of the total participants.
- Those aged sixteen were slightly fewer, representing approximately 27.3% of the total.
- Participants aged thirteen had the smallest representation, accounting for around 16.1% of the total.

Understanding the distribution of participants across age groups is crucial for analyzing age-specific trends and patterns in the study's findings. This breakdown provides insights into the age distribution of the study population and facilitates a more nuanced interpretation of the results.

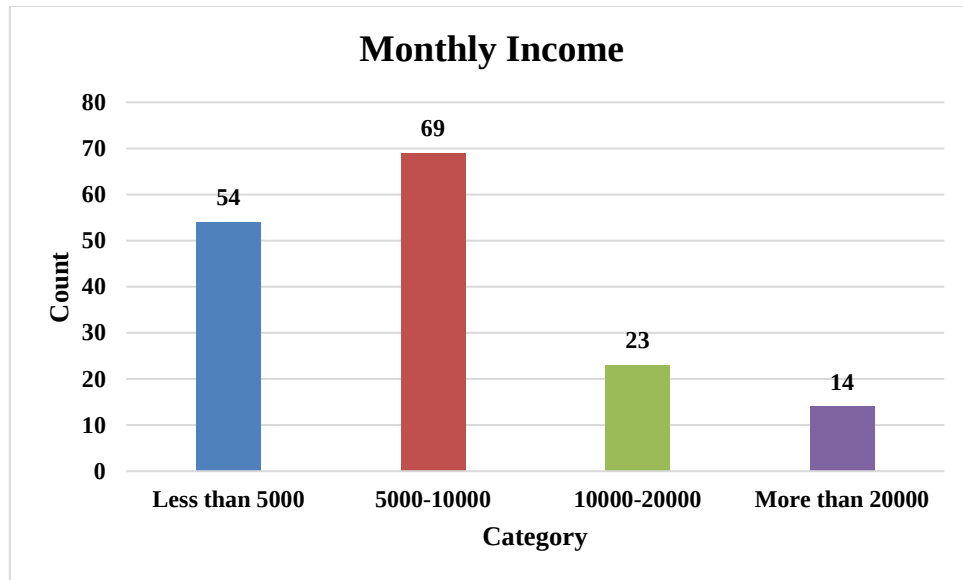


Figure 4.4. Monthly income distribution of the dataset

Figure 4.4 presents the count of participants based on their monthly income brackets. Specifically, there were 54 participants with a monthly income less than 5000, 69 with incomes ranging between 5000 and 10000, 23 with incomes between 10000 and 20000, and 14 with incomes exceeding 20000.

Interpretation:

- The majority of participants, comprising approximately 42.7% of the total, fell within the income bracket of 5000-10000.
- Participants with incomes less than 5000 accounted for around 33.9% of the total.
- Those with incomes between 10000 and 20000 made up approximately 14.4% of the total.
- Participants with incomes exceeding 20000 represented the smallest proportion, accounting for roughly 8.9% of the total.

Understanding the distribution of participants across income brackets is crucial for assessing the socioeconomic diversity within the study population. This information helps contextualize the study findings and identify potential correlations between income levels and variables under investigation.

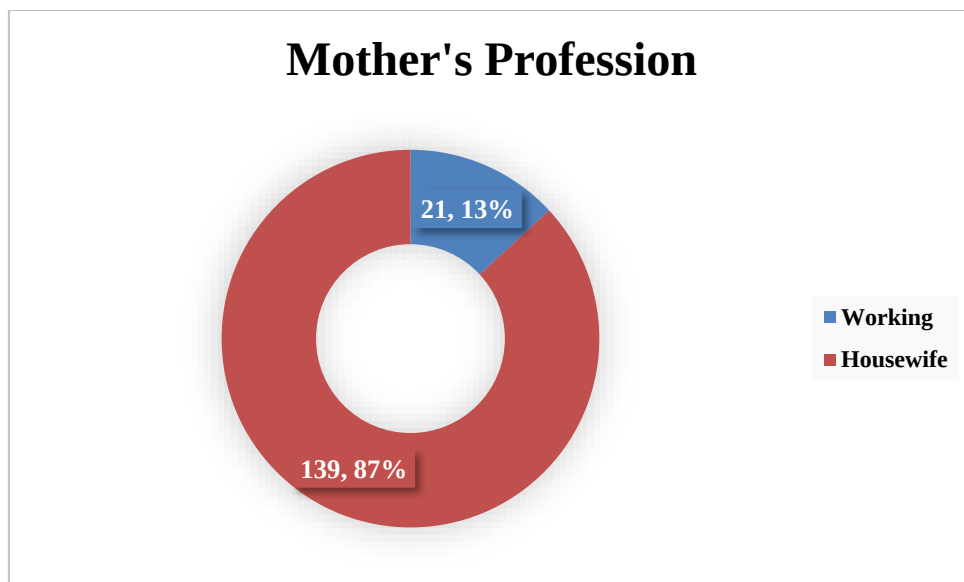


Figure 4.5. Mother's profession distribution of the dataset

Figure 4.5 indicates the count of participants based on their mothers' professions, with 21 being classified as working and 139 as housewives.

Interpretation:

- Housewives represent the predominant group among the participants, comprising approximately 86.9% of the total.
- Participants with working mothers constitute the minority, accounting for about 13.1% of the total.

Understanding the distribution of participants based on their mothers' professions provides insight into the household dynamics and potential influences on the participants' lifestyles and behaviors. This information can be valuable for analyzing how parental occupation may impact various aspects of the participants' lives, including dietary habits, access to resources, and overall well-being.

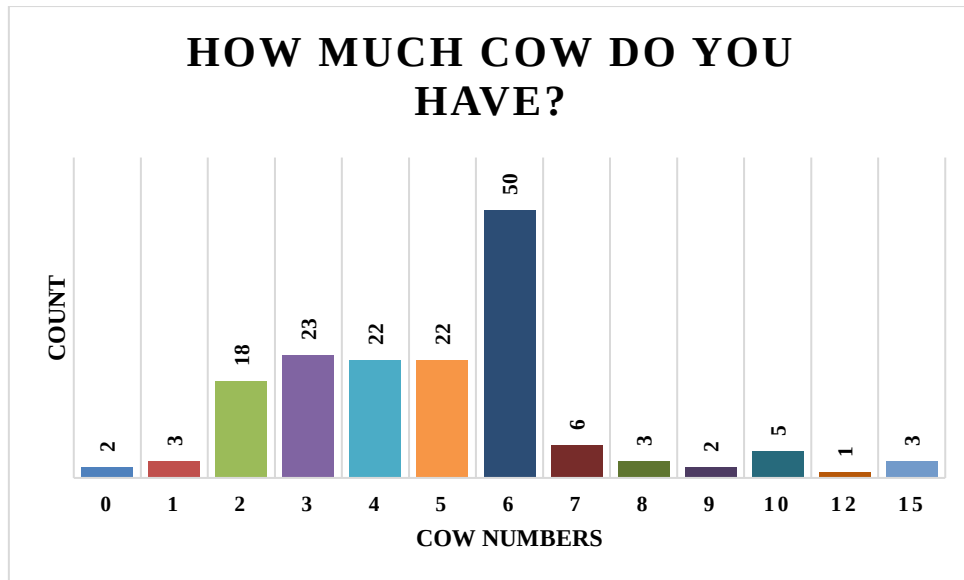


Figure 4.6. Cow count distribution of the dataset

Figure 4.6 presents the count of participants based on the number of cows owned in their homes.

Interpreting the data:

- The majority of participants, approximately 50, reported having six cows in their homes.
- The next most common response was having three cows, reported by 23 participants.
- Participants reporting ownership of four or five cows each comprised 22 respondents.
- Smaller numbers of participants reported owning two, seven, eight, nine, ten, twelve, and fifteen cows, with counts ranging from 1 to 6.

This data provides insight into the distribution of livestock ownership among the participants, which may reflect agricultural practices, economic status, and lifestyle factors within their communities. Understanding the prevalence of cow ownership can inform interventions related to livestock management, agricultural development, and household livelihoods.

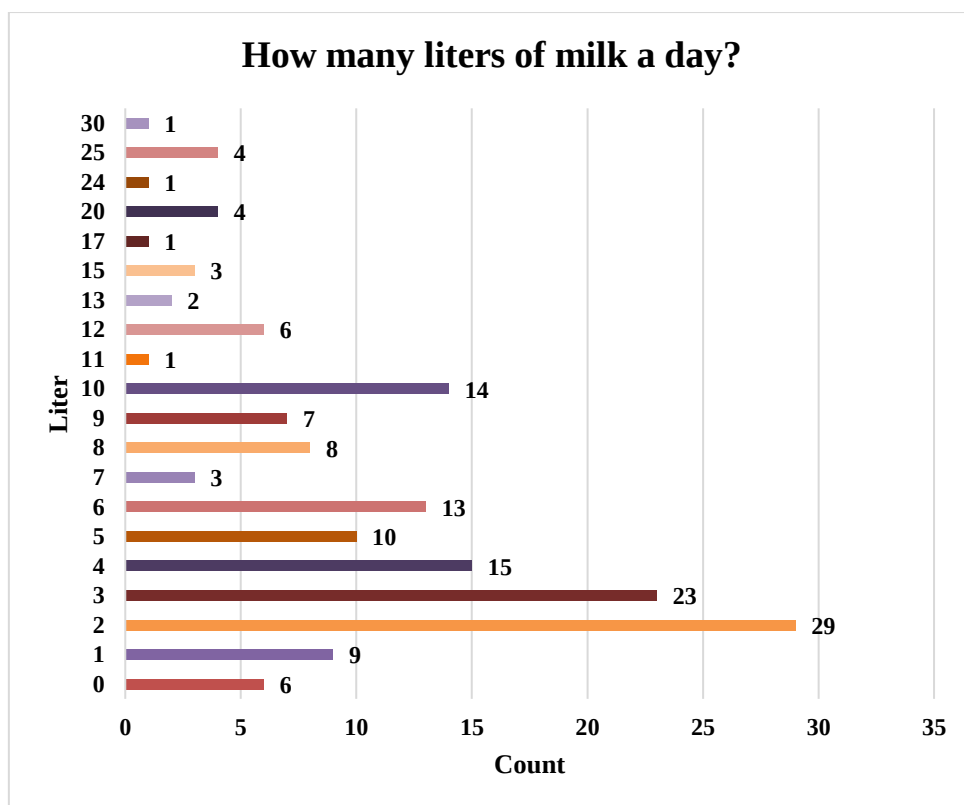


Figure 4.7. Milk per day distribution of the dataset

Figure 4.7 presents the count of participants based on the number of liters of milk produced per day in their households.

Interpreting the data:

- The most common response was producing two liters of milk per day, reported by 29 participants.
- This was followed by producing three liters of milk per day, reported by 23 participants.
- Participants reporting production of four or ten liters of milk per day each comprised 15 respondents.
- Smaller numbers of participants reported various other amounts of milk production per day, ranging from 0 to 30 liters, with counts ranging from 1 to 9.

This data provides insights into the range of milk production within the households of the participants. Understanding the quantities of milk produced per day can be valuable for assessing household dairy production capacity, nutritional availability, and potential economic contributions to the household.

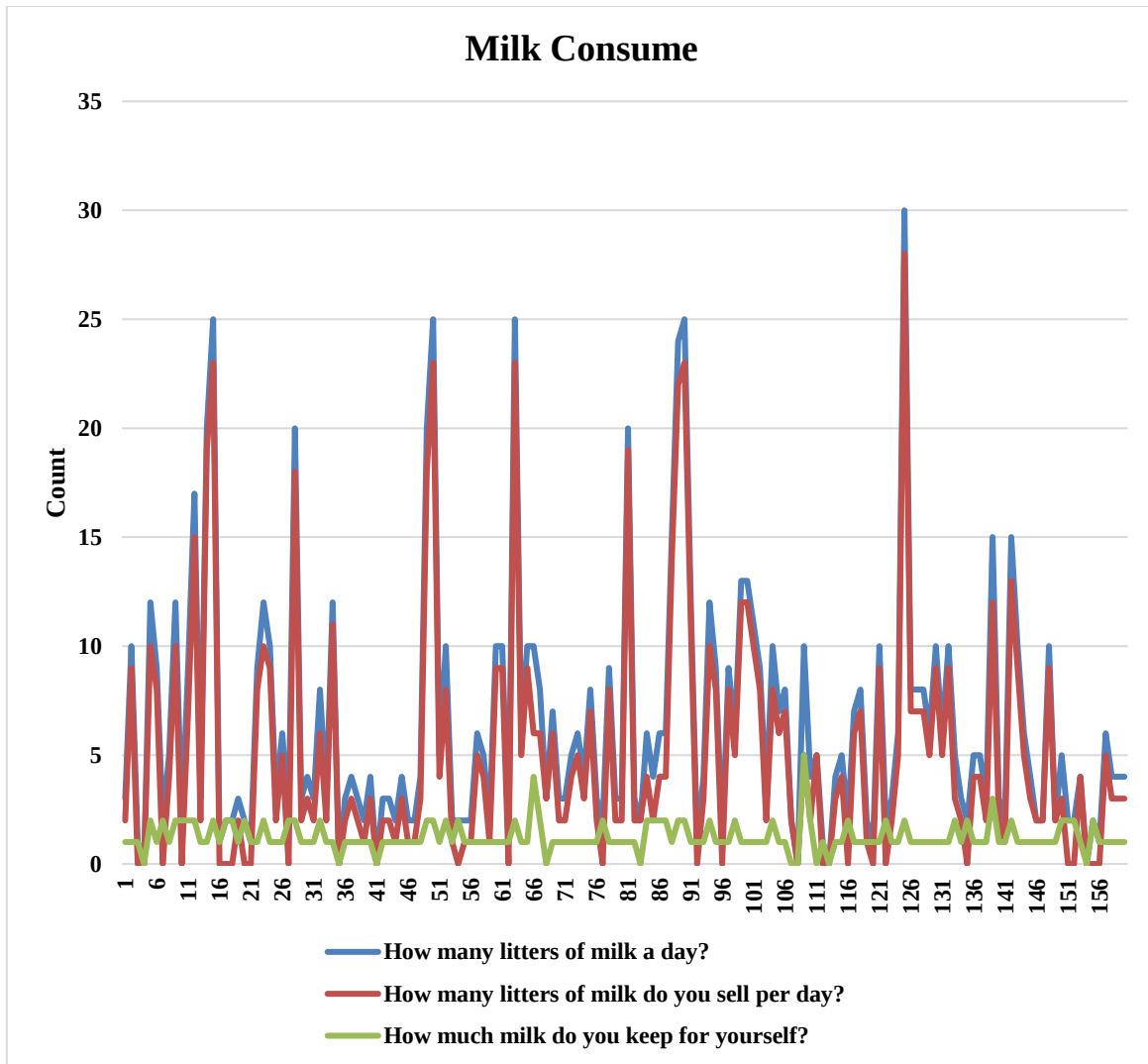


Figure 4.8. Milk consume distribution of the dataset

Figure 4.8 presents participants reported varying levels of milk production, sales, and personal consumption. The majority of households produced between 2 to 5 liters of milk per day, with a notable portion producing 3 liters or more. Sales of milk per day ranged from 0 to 30 liters, with a significant number of participants selling 2 to 4 liters. Regarding personal consumption, most households kept between 1 to 2 liters for themselves, although some reported consuming up to 5 liters per day. These findings highlight the diversity in milk production and utilization practices among the surveyed households, reflecting differing economic activities and dietary preferences within the community.

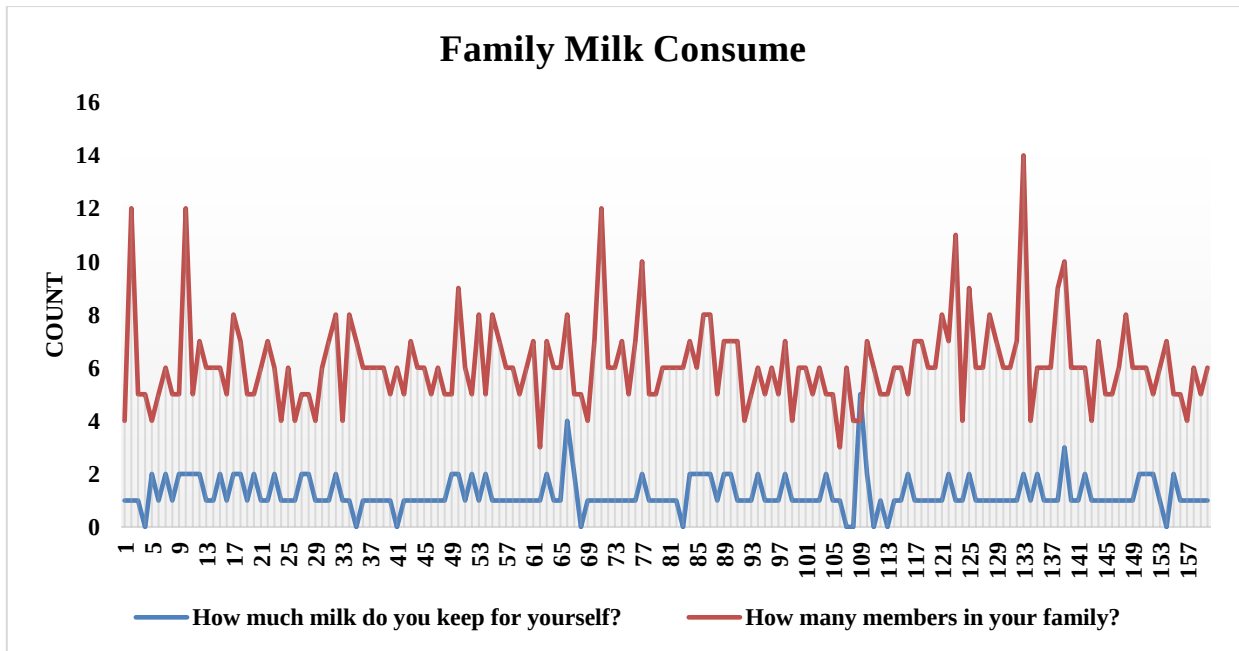


Figure 4.9. Family milk consume distribution of the dataset

Figure 4.9 represents, households reported varying amounts of milk kept for personal consumption alongside the number of family members. The majority of households kept between 1 to 2 liters of milk for themselves, while some reported consuming none. Family sizes ranged from 3 to 14 members, with the most common being between 5 to 8 members. These responses reflect diverse household compositions and preferences in milk consumption within the surveyed population.

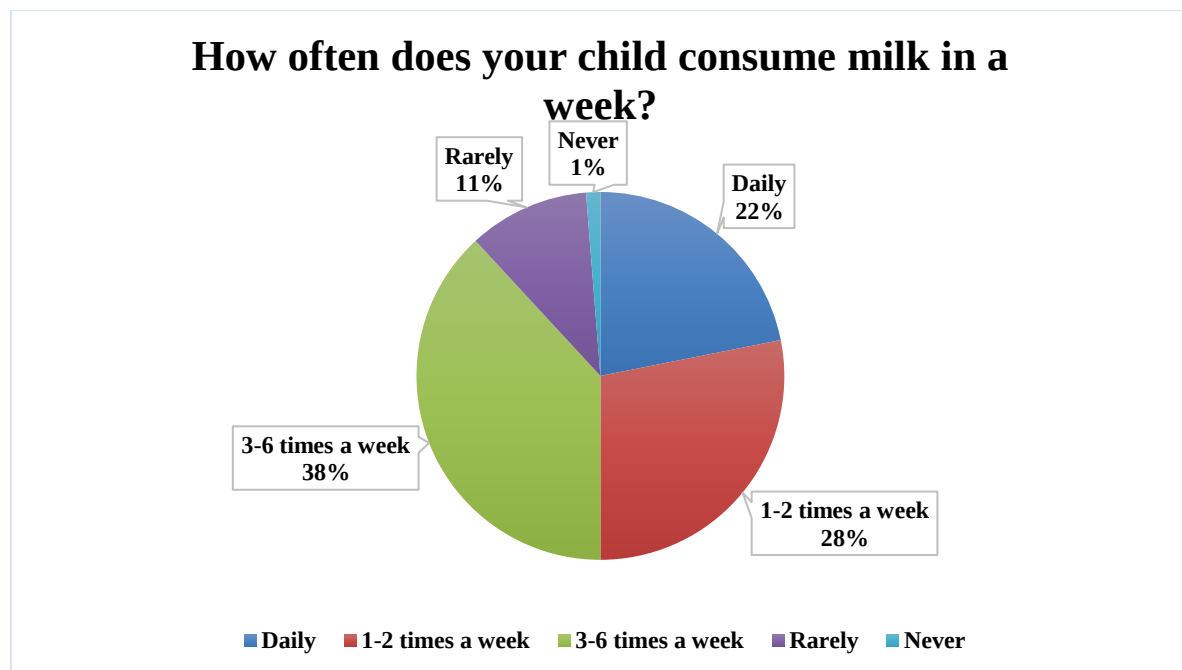


Figure 4.10. Often milk consume distribution of the dataset

Figure 4.10 presents the percentages for each category of milk consumption frequency among children in a week:

- Daily: 35 children, approximately 23.3% of the total.
- 1-2 times a week: 45 children, approximately 30% of the total.
- 3-6 times a week: 61 children, approximately 40.7% of the total.
- Rarely: 17 children, approximately 11.3% of the total.
- Never: 2 children, approximately 1.3% of the total.

These percentages provide a clearer understanding of the distribution of milk consumption frequencies among children in the surveyed population.

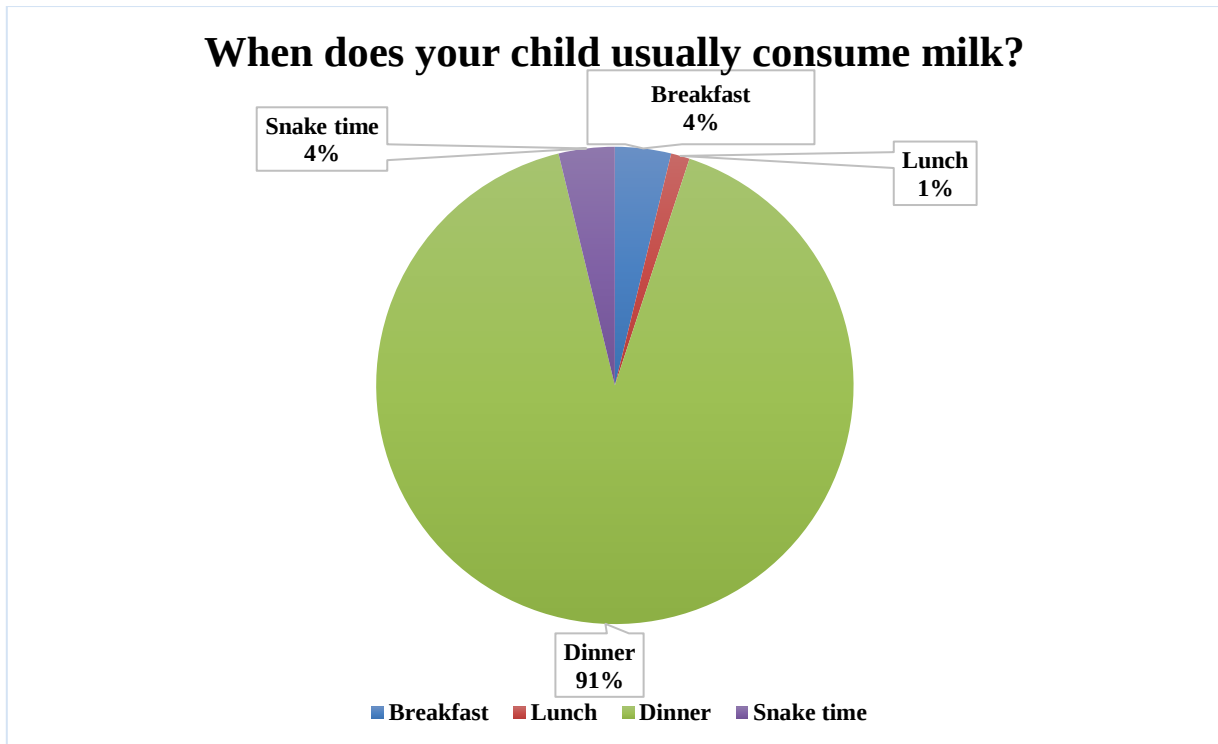


Figure 4.11. Milk consume time distribution of the dataset

Figure 4.11 indicates the frequency of milk consumption among children during various meal times.

- With 6 counts, representing 3.95% of the total responses, milk consumption during breakfast is relatively low. This suggests that while some children have milk with their breakfast, it's not as common compared to other meal times.
- Only 2 counts, accounting for 1.32% of the responses, indicate milk consumption during lunch. This indicates that milk is rarely consumed during lunch among the surveyed children.
- The majority of children, with 144 counts, or 94.74% of the responses, consume milk during dinner. This reflects a strong preference for milk consumption during the evening mealtime.
- With 6 counts, or 3.95% of the responses, milk consumption during snack time is relatively low. This suggests that while some children may have milk as a snack, it's not a prevalent choice compared to other meal times.

The data reveals that dinner is the most common mealtime for milk consumption among children, followed by snack time, breakfast, and lunch, respectively.

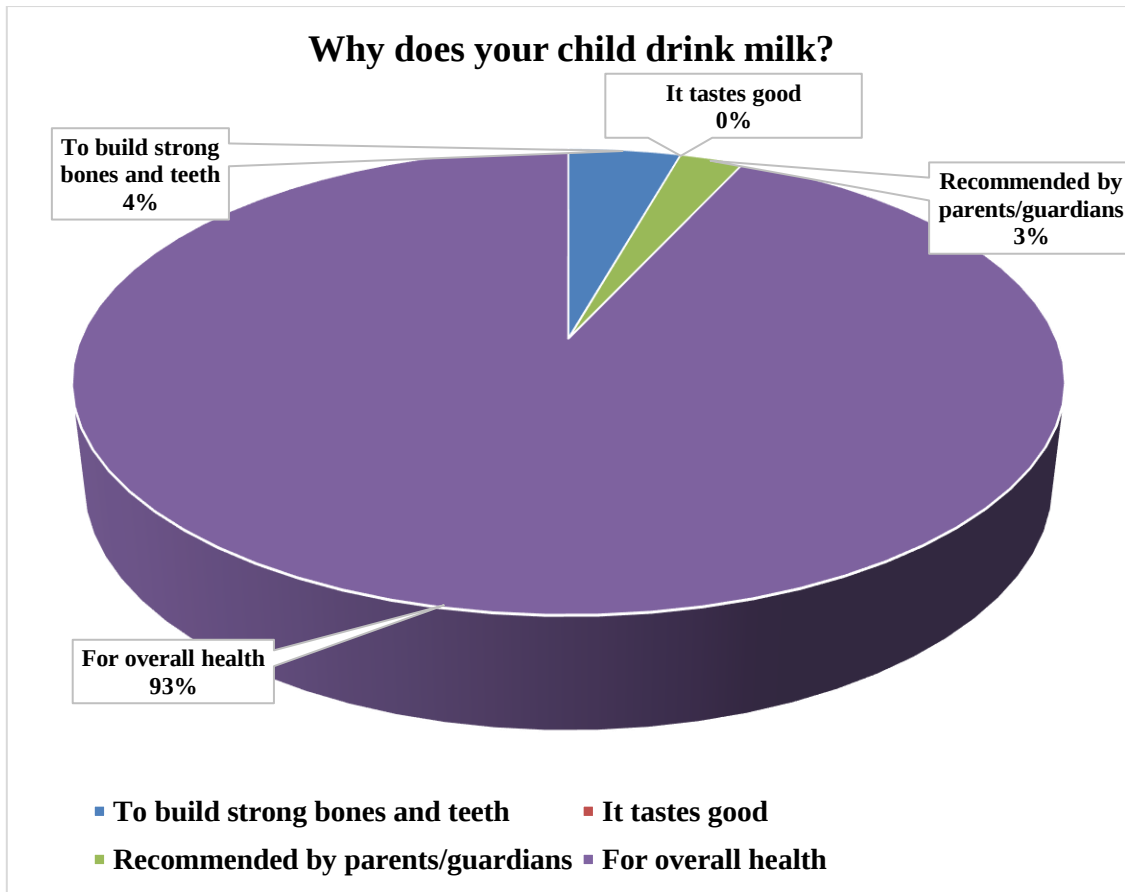


Figure 4.12. Cause of drinking milk distribution of the dataset

Figure 4.12 presents children's motivations for consuming milk is crucial for promoting healthy dietary habits. Let's delve into the reasons behind their milk consumption:

- **To build strong bones and teeth:** 7 participants (4.38%) - This indicates that a small proportion of participants, specifically 4.38%, reported that their children drink milk primarily for the purpose of building strong bones and teeth.
- **It tastes good:** 0 participants (0%) - None of the participants reported taste as a reason for their children drinking milk. This suggests that taste preference might not strongly influence milk consumption among this group.
- **Recommended by parents/guardians:** 4 participants (2.5%) - This reveals that a small percentage, 2.5%, of participants mentioned parental or guardian recommendation as a motivating factor for their children to drink milk.
- **For overall health:** 149 participants (93.13%) - This signifies that the vast majority, approximately 93.13%, of participants stated that their children drink milk for overall health reasons, highlighting its perceived nutritional value and importance for well-being.

This data offers insights into the range of milk production within the households of the participants. Understanding the quantities of milk produced per day can be valuable for assessing household dairy production capacity, nutritional availability, and potential economic contributions to the household.

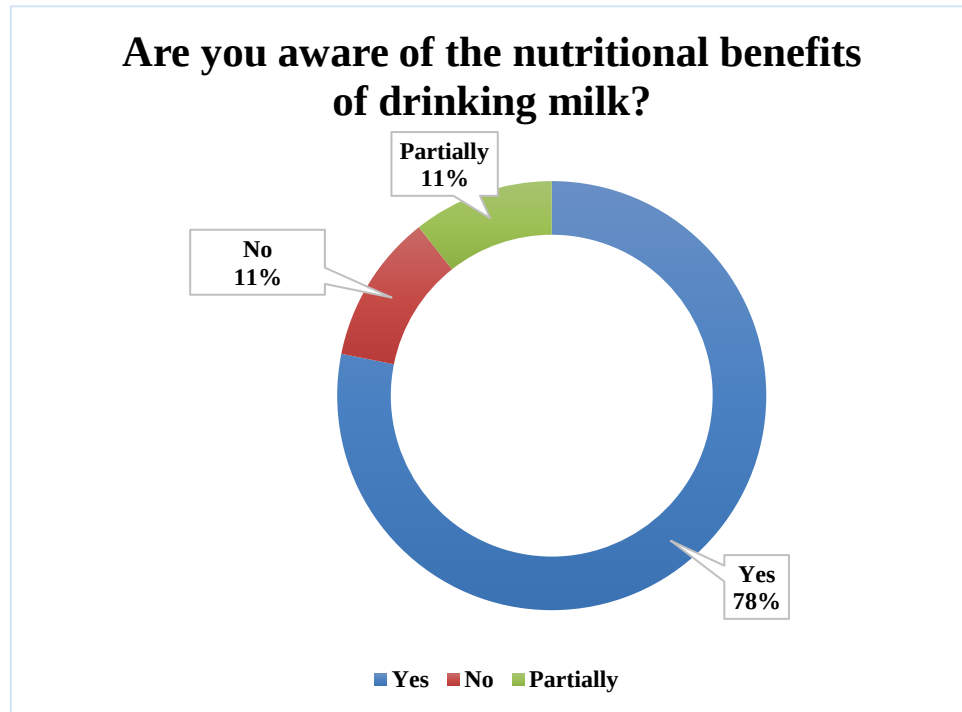


Figure 4.13. Aware of drinking milk distribution of the dataset

Figure 4.13 presents percentages represent the proportion of participants who responded with each option out of the total responses provided.

- **Yes (125 participants):** This indicates that approximately 78.13% of participants are aware of the nutritional benefits of drinking milk.
- **No (18 participants):** These participants represent approximately 11.25% of the total respondents who are not aware of the nutritional benefits of drinking milk.
- **Partially (17 participants):** This group comprises around 10.63% of the respondents who have partial awareness of the nutritional benefits of milk.

Adding percentages provides a clearer understanding of the distribution of responses among the participants.

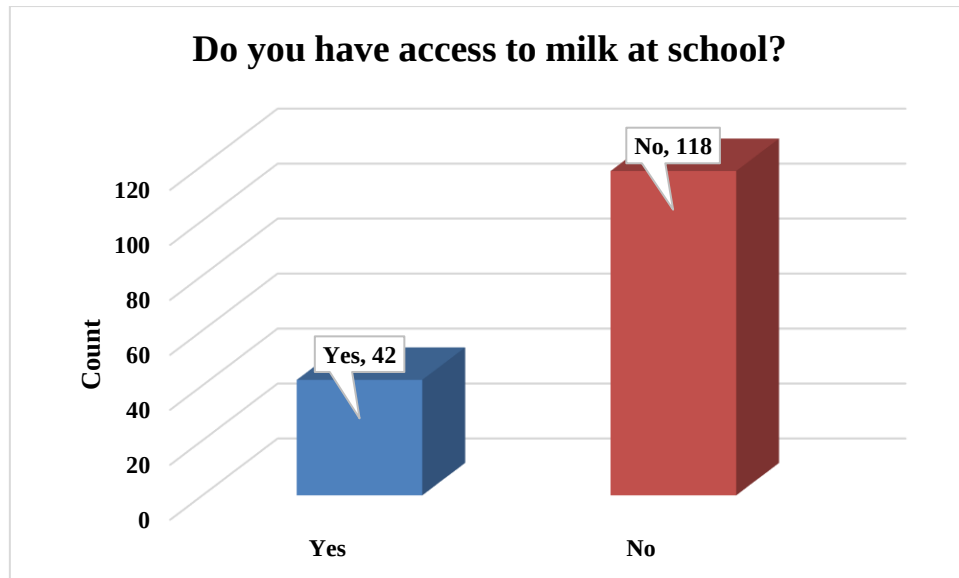


Figure 4.14. Access of drinking milk at school distribution of the dataset

Figure 4.14 presents percentages represent the proportion of participants who responded with each option out of the total responses provided.

- **Yes:** 42 respondents reported having access to milk at school. This represents approximately 26.25% of the total responses. Having access to milk at school suggests that these educational institutions prioritize providing nutritious options for their students, potentially contributing to better dietary habits among the student body.
- **No:** On the other hand, 118 respondents indicated that they do not have access to milk at school. This accounts for approximately 73.75% of the total responses. The absence of milk availability at school might indicate a missed opportunity for promoting dairy consumption among students, potentially impacting their overall nutritional intake.

Overall, understanding the availability of milk at school provides insights into the school environment's role in shaping students' dietary habits and nutritional choices. It also underscores the importance of promoting access to healthy food options within educational settings.

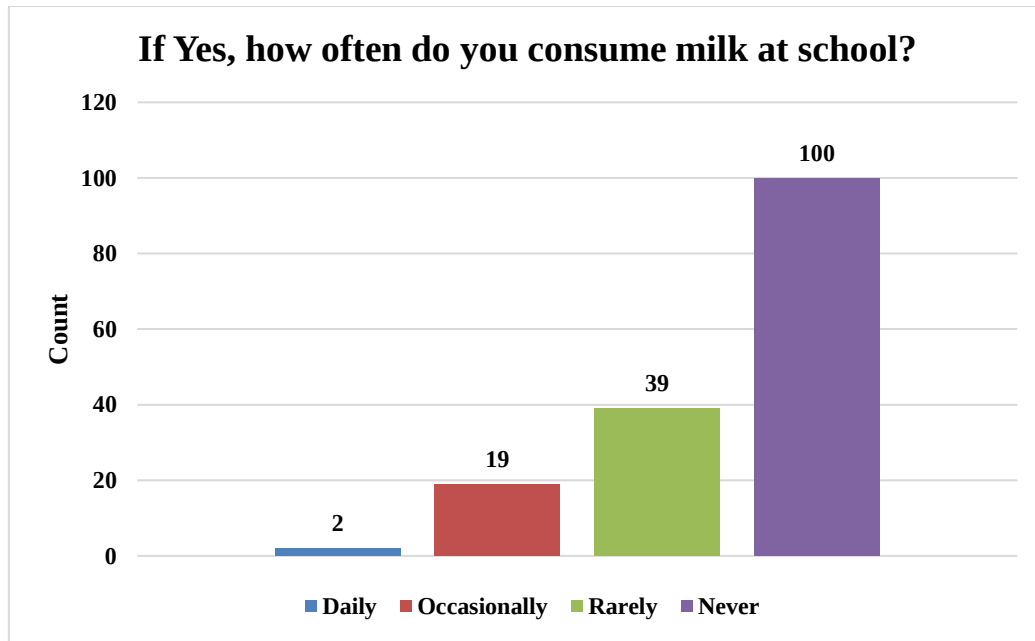


Figure 4.15. Access time of drinking milk at school distribution of the dataset

Figure 4.15 presents percentages represent the proportion of participants who responded with each option out of the total responses provided. Understanding the frequency of milk consumption at school provides insights into students' dietary habits and preferences within the educational setting.

- **Daily:** Only 2 respondents reported consuming milk at school on a daily basis. This accounts for approximately 1.32% of the total responses. These students likely prioritize milk as a regular part of their school-day diet, potentially benefiting from its nutritional content.
- **Occasionally:** 19 respondents indicated consuming milk at school occasionally. This represents approximately 12.58% of the total responses. Occasional consumption suggests that these students may choose to drink milk when it's available, but it's not a consistent part of their dietary routine.
- **Rarely:** The majority of respondents, comprising 39 individuals, reported rarely consuming milk at school. This accounts for approximately 25.83% of the total responses. Rare consumption suggests that while milk is available, these students opt for other beverage options or may not prioritize dairy consumption during school hours.
- **Never:** Strikingly, 100 respondents reported never consuming milk at school. This represents approximately 66.25% of the total responses. The high number of students who never consume milk at school suggests

potential barriers to access or preferences for alternative beverages among the student body.

It highlights the need for promoting milk consumption and ensuring access to nutritious beverages for all students.

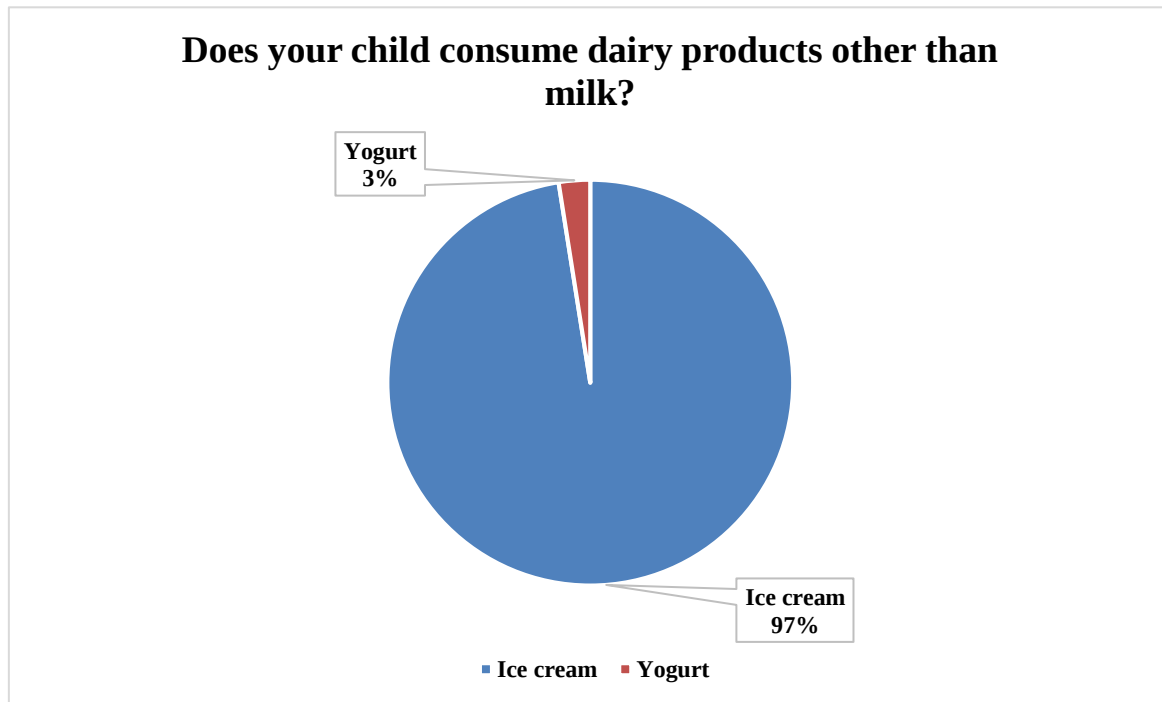


Figure 4.16. Consume dairy products distribution of the dataset

Figure 4.16 presents that ice cream is the predominant dairy product consumed among the respondents, with yogurt being less commonly consumed.

- **Ice cream:** A significant majority of respondents, 156 individuals, reported consuming ice cream, representing approximately 97.5% of the total responses. Ice cream is a popular dairy product enjoyed by many, especially as a dessert or treat.
- **Yogurt:** Only 4 respondents indicated consuming yogurt, accounting for approximately 2.5% of the total responses. While yogurt is also a dairy product, its lower consumption rate compared to ice cream suggests that it may be less popular among the surveyed individuals.

Understanding the consumption patterns of different dairy products provides insights into dietary preferences and habits among the surveyed individuals.

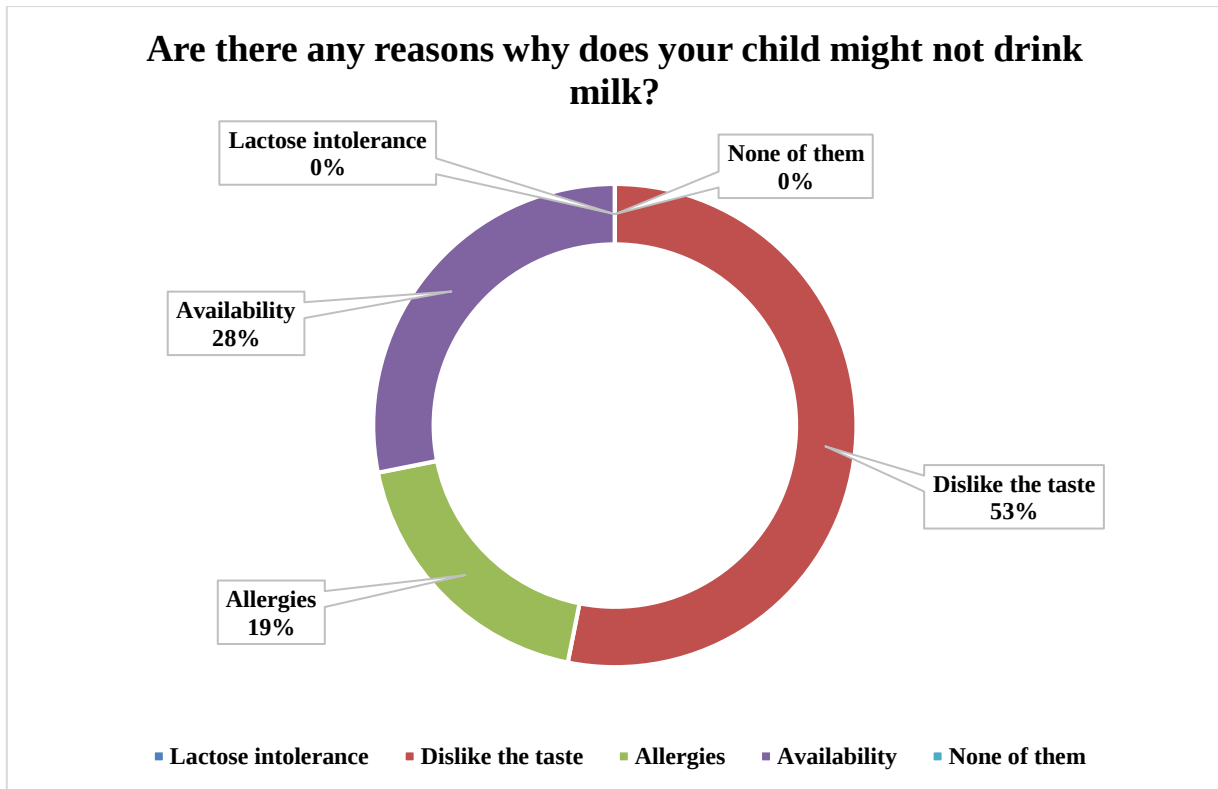


Figure 4.17. Cause of not drink milk distribution of the dataset

Figure 4.17 highlights various factors, including taste preferences, allergies, and availability, that may influence children's milk consumption habits.

- **Lactose intolerance:** None of the respondents cited lactose intolerance as a reason for not drinking milk. This suggests that lactose intolerance may not be a prevalent issue among the surveyed individuals or may not be perceived as a barrier to milk consumption.
- **Dislike the taste:** The majority of respondents, comprising 85 individuals, reported disliking the taste of milk as a reason for not drinking it. This accounts for approximately 53.13% of the total responses, indicating that taste preferences significantly influence milk consumption habits among the surveyed individuals.
- **Allergies:** Thirty respondents cited allergies as a reason for not drinking milk. This represents approximately 18.75% of the total responses, suggesting that allergies may pose a barrier to milk consumption for a notable portion of the surveyed individuals.
- **Availability:** Forty-five respondents indicated that the availability of milk is a reason why their child might not drink it. This accounts for

approximately 28.13% of the total responses, indicating that limited access to milk may be a barrier to consumption for some individuals.

- **None of them:** None of the respondents selected "None of them" as a reason for not drinking milk. This suggests that all respondents perceive at least one barrier or reason why their child might not drink milk.

Understanding these reasons can inform strategies to promote milk intake and address barriers to consumption among the surveyed individuals.

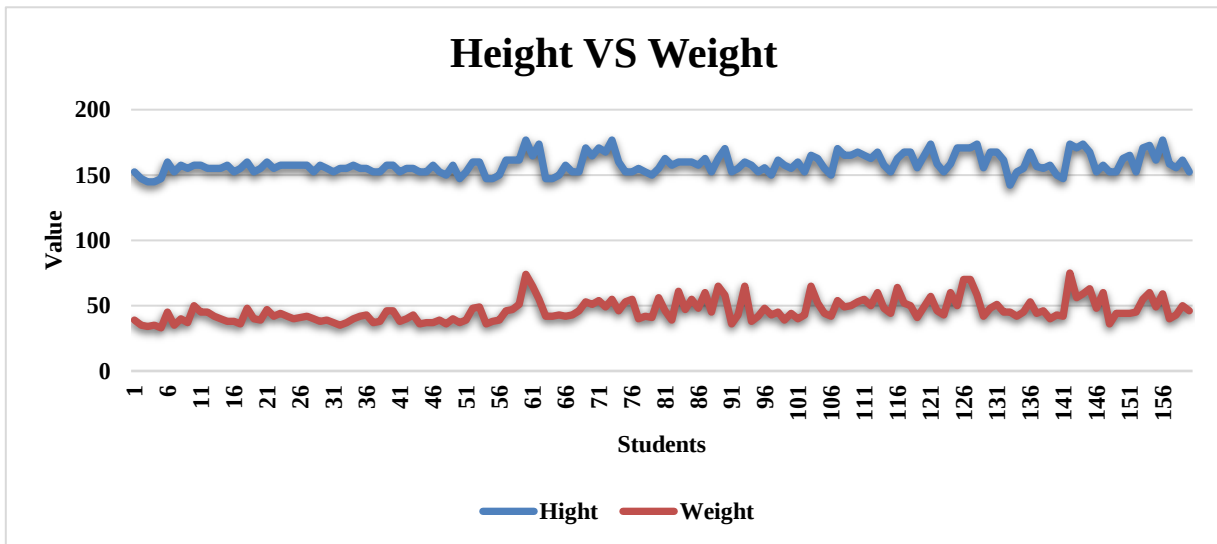


Figure 4.18. Height VS Weight distribution of the dataset

Figure 4.18 presents measurements of height and weight for individuals. The height values are in centimeters (cm), while the weight values are in kilograms (kg). Each entry in the dataset represents the height and weight of a single individual.

Analyzing height versus weight data can provide insights into the relationship between these two variables. Typically, as height increases, weight also tends to increase, reflecting the general trend of larger individuals weighing more due to increased body mass. However, this relationship can vary based on factors such as age, gender, body composition, and overall health.

To further analyze the data, statistical methods such as calculating correlation coefficients or creating scatter plots can be employed to visualize the relationship between height and weight and identify any patterns or trends within the dataset. Additionally, demographic information or other variables may be considered to better understand how height and weight relate to other factors.

4.2 Limitations

The study "Assessment of Nutritional Status of Milk Intake Among School Going Children Aged 13-16 Years, Aminpur, Pabna" faces several limitations. Firstly, there might be sampling bias if the participants aren't representative of the entire population of school-going children aged 13-16 in Aminpur, Pabna. Secondly, reliance on self-reported data could introduce response bias, potentially leading to inaccuracies in milk intake and dietary habit reporting. Furthermore, the findings' generalizability may be limited beyond Aminpur, Pabna, due to unique regional factors. The cross-sectional design hampers the study's ability to establish causality or track longitudinal changes in milk consumption. Measurement errors, such as inaccuracies in height and weight measurements, may also impact the accuracy of nutritional status assessments. Lastly, the study's narrow focus on milk intake may overlook other dietary factors influencing children's overall nutrition.

Chapter 5

Conclusion

5. Conclusion

In conclusion, this study sheds light on the critical importance of assessing the nutritional status of milk intake among school-going children aged 13-16 years in Bangladesh. The findings highlight the significance of milk as a source of essential nutrients and its potential impact on the overall health and well-being of adolescents. Through a comprehensive analysis of consumption patterns, socio-economic factors, and nutritional adequacy, the study underscores the need for targeted interventions to address barriers hindering optimal milk intake. By implementing recommendations aimed at promoting healthy dietary practices and improving accessibility to milk, Bangladesh can take significant strides towards mitigating nutritional deficiencies and fostering better health outcomes among its adolescent population.

Chapter 6

Appendix

Name: Mst. Liza Akter

ID: 201-34-329

Topic : Assessment of nutritional status of milk intake among school going children aged 13 to 16 years Aminpur , Pabna

Demographic Information:

1. Gender :

a. Female ☐ b. Male ☒

2. Age: 14

3. Education Level:

a. Primary School ☐ b. Secondary School ☒ c. Higher Secondary School. ☐

4. Class :

☒ a. 7th ☐ b. 8th ☐ c. 9th ☐ d. 10th

5. Monthly Income of the Household:

☒ a. Less than 5,000 BDT ☐ b. 5,000-10,000 BDT

☐ c. 10,000-20,000 BDT ☐ d. More than 20,000 BDT

6. Mothers profession:

☒ a. Housewife ☐ b. Working

7. How much cow do you have in your home? 5

8. How many litters of milk a day? 4

9. How many litters of milk do you sell per day? 3

10. How much milk do you keep for yourself? 1

11. How many members in your family? 6

12. How often does your child consume milk in a week?

a. Daily ☒ b. 3-6 times a week ☐ c. 1-2 times a week ☐ d. Rarely ☐ e. Never ☐

13. When does your child usually consume milk? (Select all that apply)

a. Breakfast ☐ b. Lunch ☐ c. Dinner ☒ d. Snack time ☐

14. What type of milk does your child usually consume?

☒ a. Cow's milk

b. Goat milk

Reasons for Milk Consumption:

15. Why does your child drink milk? (Select all that apply)

a. To build strong bones and teeth

b. It tastes good

c. Recommended by parents/guardians

☒ d. For overall health

16. Are you aware of the nutritional benefits of drinking milk?

☒ a. Yes

b. No

☒ c. Partially

Frequency of Milk at School:

17. Do you have access to milk at school?

☒ a. Yes

b. No

18. If yes, how often do you consume milk at school?

a. Daily

b. Occasionally

☒ c. Rarely

19. Does your child consume dairy products other than milk?

a. Yogurt

☒ b. Ice cream

Perceived Barriers to Milk Consumption:

20. Are there any reasons why does your child might not drink milk? (Select all)

a. Lactose intolerance

☒ b. Dislike the taste

c. Allergies

d. Availability

Anthropometric Measurements:

21. Height (cm): 5 feet = 152.4 cm

22. Weight (in kilograms): 46 kg

23. What is your Body Mass Index (BMI)? 19.8

(BMI = Weight/Height²)

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ASSESSMENT OF NUTRITIONAL STATUS OF MILK INTAKE AMONG SCHOOL GOING CHILDREN AGED 13-16 YEARS, AMINPUR, PABNA

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