

# Nutritional Status of Children in Tarlac City

Daisy B. Coles

Tarlac State University, Tarlac, Philippines

Corresponding author email: d.coles02700@student.tsu.edu.ph

**Date Submitted:** November 23, 2023

**Date Revised:** December 6, 2023

**Date Published:** December 7, 2023

Originality: 91%

Grammarly Score: 83%

Similarity: 9%

## Recommended citation:

Coles, D. (2023). nutritional status of children in Tarlac City. *Journal of Interdisciplinary Perspectives*, 1(4), 39-56. <https://doi.org/10.69569/jip.2023.0029>



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).

## ABSTRACT

To eradicate hunger and improve the nutritional status of children in Tarlac City, the study addressed the issue of child malnutrition in line with the government's goal of ensuring the well-being of children and reducing poverty nationwide. This study aimed to contribute to the management and enhancement of healthcare services in the city and the strengthening of primary healthcare through various strategies. Health workers played a pivotal role in describing and evaluating the nutritional status in Tarlac City, working alongside parents to educate them on how to provide their children with safe and nutritious food while managing their food preferences.

Documentary analysis and quantitative descriptive research design was adopted for the study. The use of convenience sampling was done as it is a branch of sample selection that employs non-random methods to choose a group of people. The study described and evaluated several indicators, including Weight for Age, Height for Age, Weight for Height/Length, and family profiles, including income. The research was limited in scope to Tarlac City, encompassing its 76 barangays. The findings of the study found majority of children, was weight for age had been classified "Normal (N)" with a total of 28,985 all over the Barangay of Tarlac City, while the "Severely underweight (SUW)" had the smallest number of groups with 110 children in this case. As to family income, most of the families earn 5,000 to 10,000 pesos a month. The lowest income was 2,000 to 4,000 pesos a month. The majority of the nutritional practices done was on parents' "Decision of choice of food" with a frequency of 225 and 59.21% out of 380 parent respondents. The least nutritional practices of parents for their children were the "Family practices" with a frequency of 125 and 32.89% out of the 280 parent respondents.

Lastly, the researcher proposed intervention measures which could help to enhance the health status of the children which include: Promoting free Seedlings for sustainable health development; Granting Benefits Discounts for Children Nutrients; Parents Training and Seminar for Children Development and awareness to Nutrition; and Competitive Health Workers for better Health Services. These were suggested to give the children, parents and the community a stronger approach to fighting malnutrition and natural awareness for good and quality food habits.

**Keywords:** Nutrition; Children; Nutritional Practices; Healthcare.

## Introduction

Stunting was a crisis, childhood stunting was "one of the most significant hindrances to human development, globally affecting approximately 162 million children under 5 years of age." Also, it was estimated approximately 127 million children below 5 years old will have been stunted by 2025 considering that the situation prevails. Given the current global health crisis, the pandemic, more children are at risk of being stunted if there are no solutions and measures to counter it (WHO, 2020).

The most critical health issue that affects children in the present world is malnutrition. Poverty and lack of knowledge on a healthy diet were some of the reasons why parents chose ready-to-eat foods and fast foods due to the influence of multimedia. (WHO, 2019). Additionally, all of the sustainable development goals (SDGs) were impacted by nutrition, making it a maker and marker of sustainable development. Malnutrition requires synchronized and coordinated responses from all sectors and players because it is a multi-sectoral issue.

Nutrition plays a crucial role in promoting overall well-being and growth. Improved immune function, enhanced safety during pregnancy and childbirth, reduced chances of non-communicable diseases, and increased lifespan were all linked to optimal nutrition, benefiting both infants and mothers. Well-nourished children also had improved learning capabilities. Additionally, individuals who maintained good nutrition were more productive, which could lead to opportunities for breaking the cycle of poverty and hunger.

In the Philippines, the Barangay Nutrition Scholar (BNS) program was a human resource development strategy of the Philippine Plan of Action for Nutrition, which involves the recruitment, training, deployment, and supervision of volunteer workers or Barangay Nutrition Scholars (BNS). Presidential Decree No. 1569 mandated the deployment of one BNS in every barangay in the country to monitor the nutritional status of children and/or link communities with nutrition and related service providers. PD No. 1569 also mandated the NNC to administer the program in cooperation with local government units.

Consequently, malnutrition poses serious risks to human health in all of its manifestations. The double burden of malnutrition that exists today, particularly in low- and middle-income nations, involves both undernutrition and overweight. Malnutrition could take many different forms, such as undernutrition (wasting or stunting), micronutrient deficiencies, overweight, obesity, and the ensuing noncommunicable diseases linked to diet. The global burden of malnutrition had substantial and long-lasting effects on individuals, their families, communities, and nations in terms of development, economy, social issues, and health.

In Tarlac City, Tarlac, the City Health Office (CHO) held an election, orientation, and general assembly for barangay nutrition scholars in the Bulwagan, Tarlac City Hall. 76 Tarlac City barangays sent a total of 120 Barangay Nutrition Scholars (BNS) to the event. The National Nutrition Council gave each participant a BNS Handbook, a notebook, and a bag. Dr. Carmela went to the City Health Office and oversaw the seminars, led by City Nutrition Program coordinators Sheila Dano, Michelle Bognot, and Gienelle Sabado. By PD No. 1569, there shall be one BNS in charge of providing nutrition services and other related tasks such as community health, backyard food production, environmental cleanliness, culture, mental feeding, and family planning (Tarlac City Information Office, 2018).

This study was chosen as it is crucial to address malnutrition within the vicinity of the researcher's scope of work as a Midwife at the City Health Centre 3 – San Miguel in Tarlac City. Furthermore, this would help to enhance city-level healthcare services and strengthen primary healthcare by developing new strategies and methods from the identified concerns and problems. To eradicate hunger, improve nutrition, and prevent and manage malnutrition was the first 1000 Days of Life, which began on the 1st day of pregnancy up to 24 months old. The right nutrition in the first 1000 days of life builds the foundation for the child's ability to grow, learn, and thrive as the key to reaching economic goals is good nutrition. Breastmilk is the superfood for babies, which dictates not only the best nutrition an infant could get but also serves as the primary immunization against illnesses and diseases which would serve as the foundation of babies' health.

The impact of good nutrition early in life could be reached far into the future. Children who got the right nutrition in their first 1000 days were 10 times more likely to overcome the most life-threatening childhood diseases. Also, this could complete 4.6 more grades of school. Moreover, they went on to earn 21% more in wages as adults. Lastly, they were more likely in adulthood to have a healthier family.

Also, this study had been administered to assess the nutritional status of children 0 to 59 months old. Moreover, the researcher is a city health midwife and has seen the nutritional status of the children in the area, and significant in the conduct of this study given her position as City Health Midwife in Tarlac City. Through this, the voices of the citizenry had been brought out to the government agencies to improve and provide policy implementation and policy formulation to provide the needs of the vulnerable, particularly in the nutritional aspect. As a rationale, this study aimed to analyze and describe the nutritional status of Tarlac City in terms of their weight for age, height for age, weight for height and length, coverage, and profile. Moreover, the dietary and nutritional practices of parents, interventions to promote the nutritional status of children, problems encountered by the respondents, proposed measures to improve the encountered problems, and implications to public administration were the goals of this study.

## Methodology

### Research Design

To provide consistent evidence regarding the examined event of interest, the researcher evaluated the studied procedures that had been used as a measurement of the research. The nutritional status of children in Tarlac City measured by the researcher used a quantitative descriptive method as part of the evaluation of the nutritional status of the children including the practices of parents. Documentary analysis was utilized to evaluate legal and technical compliance with standards used in the study on nutritional status data from the City Health Office of Tarlac City. Likewise, the privacy of these materials had been given.

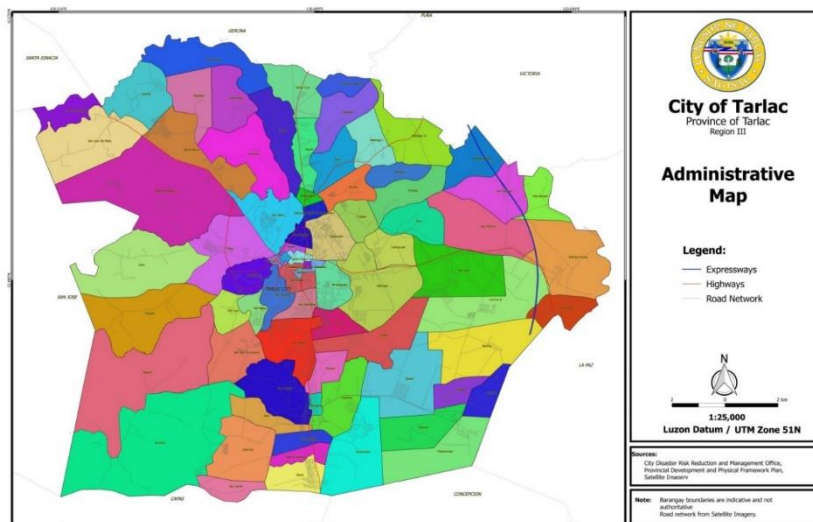
Subsequently, a quantitative descriptive research design was adopted to achieve the intention of the study. This approach is connected to describing and analyzing the nutritional status of children in Tarlac City in terms of 1) Weight for age, 2) Height for age, 3) Weight for height/length, 4) Coverage, and 5) Profile. Additionally, the study focused on 2022 coverage. The agreed upon timeline was due to the limitation time permitted for the study. The 2022 nutritional

status of children in Tarlac City was the objective of this study. The researcher conducted interviews and documentary analysis to assess the nutritional status of the children in Tarlac City to the aim of the study. The nutritional status of children plays a vital role in the community. Malnutrition rates continued to drop as living standards rose. To prevent the crisis from having long-term effects on children and vulnerable groups, governments must take decisive action.

### Research Locale

The city of Tarlac had been the focus of the study. Tarlac City is the only city in the province of Tarlac located in the Central Luzon region and serves as the capital of the Tarlac province. The city is divided into 76 barangays including the 10 City Health Centre. Tarlac City is located in the central region of Luzon Island, which is the largest island in the Philippines. It is a landlocked city surrounded by the Tarlac province and is positioned roughly 107 kilometers to the north of Manila, the capital of the Philippines. The city boasts a long and storied history that traces back to pre-colonial times when it served as a settlement for the Aetas, an indigenous group. The name "Tarlac" is thought to have its roots in the Aeta dialect, where "tarlak" refers to a grassy plain. During the colonial period, Tarlac was a part of the extensive Hacienda Luisita, a significant sugar plantation that played a pivotal role in the nation's history, particularly during the martial law era. Tarlac City is home to a diverse population, with a blend of various ethnic groups. Tagalog is the predominant language spoken, serving as both the common tongue and the official language of the Philippines. As of my last update in January 2022, the city's population had exceeded 400,000 individuals. The research was carried out in the participating barangays of Tarlac City.

The list of seventy-six (76) Barangay Nutrition Scholars (BNS) and three hundred eighty (380) parents covered by the researcher was from the different barangays in Tarlac City.



**Figure 1.** Tarlac City Map  
(source: City Planning and Development Office - Tarlac City)

### Respondents of the Study

The respondents of the study were composed of three clusters including three hundred eighty (380) parents/guardians of children from zero to fifty-nine months old who are malnourished, where they answered the Statement of the Problem numbers 1,2, and 4. On the other hand, the Interviews of the seventy-six (76) Barangay Nutrition Scholars (BNS) who were trained community workers, and voluntarily rendered nutrition services such as monthly weighing and height measurement of children under five years old through Operation Timbang Plus and thirty (30) City Health Midwives and ten (10) City Health Nurse was assigned from the ten (10) City Health Centre of Tarlac City was able to participate in answering the statement of the problem of number 4 and 5 as part of providing insight to problems encountered and measure to proposed to improve the nutritional status of children in Tarlac City. The selection of respondents used non-probability for convenience sampling as it is a branch of sample selection that employs non-random methods to choose a group of people to take part in research. Non-probability sampling does not focus on precisely reflecting all members of a large population within a smaller sample set of participants, in contrast to probability sampling and its methodologies. Because of this, not every person in the population has an equal chance of taking part in the study (Qualtrics, 2023).

### Research Instrument

The gathered data was categorized for easier data arrangement, such as through tables and graphs. Frequency is very handy in providing categorization of data. Use of Percentage and Ranking the data helps you distinguish in a comprehensive way the highs and low of the data presented. These were provided through the required statistical processing listed below:

#### Frequency count.

It displays the overall number of classifications inside a specific category, kind, or classification. The frequency simply identified the number of respondents and this can be used in Family Status, Family Income, Nutritional Practices of Parents, and even Problems Encountered.

#### Percentage.

Percentage was calculated by taking the frequency in the category divided by the total number of participants and multiplying by 100%. This has been used for the Family Status, Family Income, Nutritional Practices of Parents, and problems encountered to check the comparison of each indicator. By the use of percentages, it would be easy to determine the highest number of respondents who experience such situations, practices, and problems.

#### Ranking.

The use of statistics has been more useful by simply identifying the indicators in order from highest to lowest. This can only be applied to the nutritional practices of parents and problems encountered that had been assessed according to their frequency count and percentage to improve response display and make it easy to detect often occurring data.

### **Data Gathering Procedure**

The methods of documentary analysis, observation, and interview were used to ensure the gain of sufficient data to obtain meaningful study results.

#### Documentary Analysis.

The researcher evaluated legal and technical compliance with standards using the nutritional status data from the City Health Office of Tarlac City. Those data came from the National Nutrition Council – Region III Central Luzon in collaboration with the City Health Office of Tarlac City based on the Tally and Summary Sheet of Preschoolers. The privacy of these materials had been protected. The documentary analysis served as a guide to strengthen the research on the nutritional status of the children in Tarlac City.

#### Observation.

To obtain comprehensive information for data collection, the Official Facebook pages of various barangay offices were browsed online for approval, contacting, and scheduling of the needed observation. Then, face-to-face observations were conducted. This observation helps to identify the health status of children in Tarlac City in terms of weight and height. These were taken with approval of the various health offices.

#### Questionnaire.

The most likely solution was to gather results in a form that the researcher presented. The respondents in Tarlac City were surveyed for this study and they were chosen multiple answers, particularly on the dietary and nutritional practices of parents, which used the results to assess the nutritional status of the children and the most effective parent practices. Consequently, the issues encountered were also addressed.

### **Ethical Considerations**

Without coercion or manipulation, all respondents had the option to take part in the data gathering for the project. Participants had been notified by the researcher that their anonymity was respected before they completed the questionnaires. The respondents' data had been gathered through surveys and interviews. During a brief interview by the researcher, the respondents were asked about any problems they experienced with the program itself. Knowing that all data would only be accessible to the respondents and the researcher.

## **Results and Discussion**

### **The Nutritional Status of Children**

The nutritional status of children in Tarlac City was described and analyzed based on nutritional indicators such as weight for age, height for age, Weight for Height/Length, family status, the family income. A total of three hundred 80 respondents (380) parents of children participated in the study, which aimed to provide insight into the nutritional status of children in Tarlac City. Additionally, this could also serve as a benchmark to identify potential interventions to improve the health status of children in the city.

### Weight for Age

In this study, the weight for age could be classified into four (4) that is normal (N), underweight (UW), severely underweight (SUW), and overweight (OW). The data came from the National Nutrition Council – Region III Central Luzon with the help of City Health Office of Tarlac City based on the Tally and Summary Sheet of Preschoolers with Weight for age Age. This indicator could illustrate how many children were living on an average weight for the age of children in Tarlac City.

Table 1 presents the weight for age of children in all the barangay in Tarlac City. This could bring a good status of children's nutrition on their growth and development. The BMI-for-age = (Weight in kg) / (Height in meters)<sup>2</sup>. In this formula, "Height" is approximated by the child's age in months (since height may change significantly over this age range), and "Weight" is the child's actual weight in kilograms. The percentile indicates how the child's BMI compares to other children of the same age and gender. Common percentiles are the 5th, 25th, 50th (median), 75th, and 95th. the 5th percentile may be considered underweight. The 5th and 85th percentile is often considered healthy or normal weight. the 85th and 95th percentile may indicate overweight. the 95th percentile may indicate obesity.

**Table 1: Weight for Age**

| Weight for Age Status | Normal (N)    |             | Underweight (UW) |             | Severely Underweight (SUW) |             | Overweight (OW) |             |
|-----------------------|---------------|-------------|------------------|-------------|----------------------------|-------------|-----------------|-------------|
|                       | No            | %           | No               | %           | No                         | %           | No              | %           |
| 0-5 months            | 1,715         | 5.91%       | 12               | 3.27%       | 8                          | 7.27%       | 29              | 13.55%      |
| 6-11 months           | 1,779         | 6.14%       | 26               | 6.97%       | 6                          | 5.45%       | 15              | 7.02%       |
| 12-23 months          | 5,067         | 17.48%      | 60               | 16.08%      | 26                         | 23.64%      | 39              | 18.22%      |
| 24-25 months          | 6,097         | 21.04%      | 97               | 26.00%      | 11                         | 10%         | 38              | 17.76%      |
| 36-47 months          | 6,834         | 23.58%      | 90               | 24.13%      | 32                         | 29.09%      | 52              | 24.29%      |
| 48-59 months          | 7,493         | 25.85%      | 88               | 23.59%      | 27                         | 24.55%      | 41              | 19.16%      |
| <b>Total</b>          | <b>28,985</b> | <b>100%</b> | <b>373</b>       | <b>100%</b> | <b>110</b>                 | <b>100%</b> | <b>214</b>      | <b>100%</b> |

The data from Table 1 indicates that the majority of children in Tarlac City, spanning from 0 to 5 months up to 48 to 59 months, fall within the "Normal (N)" category, totaling 28,985 children. This classification was determined by various factors, notably weight, which serves as a significant indicator of a child's physical growth and maturity. The consistent monitoring of weight for age by barangay health workers highlighted a balanced weight-for-age trend among the children. This suggests that parents were more likely to provide appropriate feeding and food preparation, particularly within nuclear family structures. This trend was particularly evident in the 0-5 months age group, where 1,715 children (5.91% of the total) were classified as "Normal (N)." Across all age groups, a substantial number of children are within the "Normal" weight range, although the percentages vary slightly. This category is crucial as it represents children within the expected weight range for their age, signifying a lack of weight-related health concerns.

However, there were other categories identified, such as "Underweight," "Severely Underweight," and "Overweight," which signaled potential health issues requiring attention. The percentage of children classified as "Overweight" varies across age groups, indicating fluctuations in dietary and lifestyle habits over these age ranges. The proportion of underweight children, totaling 373, suggested the need for supportive feeding programs to address their nutritional needs. Additionally, 110 children identified as severely underweight raised concerns about a lack of health consciousness or control over their nutritional intake. In contrast, the 214 children classified as overweight (OW) or potentially obese indicated a different set of concerns related to eating discipline and lifestyle habits. Obesity, a multifaceted condition affecting both children and adults, often involves a combination of factors like eating habits, physical activity levels, and sleep patterns leading to excessive weight gain. Monitoring by the City Health Office was essential, as overweight or obese children might face health imbalances. These weight classifications, while indicative of potential health concerns, also serve as a spectrum rather than definitive labels. They prompt the need for tailored interventions, whether in the form of supportive feeding programs for underweight children, raising health consciousness for severely underweight individuals, or addressing eating discipline and lifestyle factors for overweight or obese children.

### Height for Age

The Height for age could also be classified into four (4) normal (N), Stunted/Short (St), severely stunted (Sst), and Tall (T). The data came from the National Nutrition Council – Region III Central Luzon with the help of City Health Office of Tarlac City based on the Tally and Summary Sheet of Preschoolers with Height Measurement by Age. This could be identified in how the height of children in Tarlac City was measured based on the age bracket. A stadiometer or a height-measuring tool designed for children ensures the child's measurement is accurate.

**Table 2: Height for Age**

| Height for Age Status | Normal (N)    |             | Stunted/Short (St) |             | Severely Stunted (SSt) |             | Tall (T)   |             |
|-----------------------|---------------|-------------|--------------------|-------------|------------------------|-------------|------------|-------------|
|                       | No            | %           | No                 | %           | No                     | %           | No         | %           |
| 0-5 months            | 1,648         | 5.88%       | 32                 | 3.95%       | 13                     | 5.35%       | 73         | 11.79%      |
| 6-11 months           | 1,670         | 5.96%       | 40                 | 4.90%       | 23                     | 9.46%       | 93         | 15.02%      |
| 12-23 months          | 4,723         | 16.86%      | 181                | 22.15%      | 60                     | 24.69%      | 231        | 37.32%      |
| 24-25 months          | 5,887         | 21.01%      | 194                | 23.75%      | 47                     | 19.34%      | 115        | 18.58%      |
| 36-47 months          | 6,685         | 23.88%      | 203                | 24.85%      | 55                     | 22.63%      | 66         | 10.66%      |
| 48-59 months          | 7,396         | 26.41%      | 167                | 20.44%      | 45                     | 18.52%      | 41         | 6.62%       |
| <b>Total</b>          | <b>28,009</b> | <b>100%</b> | <b>817</b>         | <b>100%</b> | <b>243</b>             | <b>100%</b> | <b>619</b> | <b>100%</b> |

This value is typically expressed as a z-score (standard deviation score). You will need to find the child's height-for-age z-score and then use it to determine the BMI-for-age. The BMI-for-age is usually expressed as a z-score, which indicates how a child's BMI compares to the average BMI for children of the same age and gender. A z-score of 0 represents the median (50th percentile), while positive z-scores indicate values above the median, and negative z-scores indicate values below the median. The computation of Height for Age was based on the standard used by the Department of Health and the Barangay Health Workers in Tarlac City.

Table 2 presented that most of the height for age of the children in Tarlac City were classified as "Normal (N)" with a total of twenty-eight thousand, and nine (28,009) based on the age bracket from 0-5 months up to 48-59 months. Based on the explanation that Filipinos were known for being the second shortest population in Southeast Asia when measured against average height. But the Philippines had the fifth-shortest population in the world when measured against persons of average height from everywhere else. It was safe to assume that Filipinos were small. Therefore, the indicators were set standard by the Department of Health based on the international standard. The height for age was a major important to describe how healthy the children especially if they asked about age. Traditionally, Filipinos felt short when compared to other citizens but height for age could be manageable especially when they were still young. Those in a normal stage had a good starting of nutrient status as children.

On the other hand, the eight-hundred seventeen (817) identified as "Stunted/Short (ST)". Children who experience chronic malnutrition, or long-term poor nutrition do not acquire enough nutrients for healthy growth and development experience stunting. Inadequate food intake, illnesses, and poor hygiene and sanitation practices were a few noticeable reasons for waste in children. A height-for-age measurement that was below the fifth percentile was referred to as stunting. Stunted children were frequently shorter than other children their age and may experience delayed physical and intellectual maturation. Likewise, two hundred forty-three (243) were identified as "Severely Stunted (SST)" among the children in Tarlac City. In this stage, it should be monitored by the barangay health workers they could provide vitamins and healthy food. The feeding program could last until they develop their normal height for their right age. Perhaps, Severe stress (SST) had a factor to consider such as low food intake during infancy and early childhood, common or chronic illnesses that affect a child's capacity to absorb nutrients, and poor mother nutrition during pregnancy may all contribute to stunting. Stunting was frequently associated with poverty, bad hygiene, and a lack of access to clean water and medical treatment.

Concerning this, the six hundred nineteen (619) were considered "Tall (T)" based on their age bracket. When people asked about their age, they always compare the height of others just to prove that children were well raised and were supported with good nutrients such as breast milk, branded powder milk, and having food discipline, they were guided by their parents on how and what food they should eat, and mostly it was hereditary traits.

### Weight for Height/Length

In this indicator, the Weight for Height/Length could be classified into four (4) which are Normal (N), Mod. Wasted (MW), Severy Wasted (SW), Overweight (OW), and Obese (Ob). The data came from the National Nutrition Council – Region III Central Luzon with the help of City Health Office of Tarlac City based on the Tally and Summary Sheet of Preschoolers with Weight for Height/Length based on Age Group, Sex, and Nutritional Status.

To calculate BMI for children based on weight-for-height/length per age in the Philippines, Measure the child's weight in kilograms (kg) using an accurate infant or pediatric scale. Measure the child's height in centimeters (cm) for older children or length in centimeters for infants. Use a stadiometer for height or a length board for infants.

The growth chart was used to find the BMI for age. You will need to compare the child's weight-for-height (or weight-for-length) to the expected weight for their height/length at their age. Calculate the BMI using the formula: BMI-for-age = (Weight in kg) / (Height/Length in meters). The height/length is squared in the formula to match the BMI calculation for adults.

Based on Table 3, the highest number of weights for height/length status identified as "Normal (N)" with total children of Tarlac City of twenty-eight thousand and nine hundred fifty-seven (28,957) from the age bracket of 0-5 months to 48-59 months. Parents were well-mannered and knowledgeable enough to provide the right nutrients for their children. Those children classified as normal were flexible, had good exercise, were well organized in their food preparation and they a lot of appetite to boost their interest in different foods particularly eating vegetables and fruits.

**Table 3: Weight for Height/Length**

| Weight for Height/Length Status | Normal (N)    |             | Mod. Wasted (MW) |             | Severely Wasted (SW) |             | Overweight (OW) |             | Obese (Ob) |             |
|---------------------------------|---------------|-------------|------------------|-------------|----------------------|-------------|-----------------|-------------|------------|-------------|
|                                 | No            | %           | No               | %           | No                   | %           | No              | %           | No         | %           |
| 0-5 months                      | 1,704         | 5.88%       | 16               | 6.32%       | 11                   | 7.43%       | 18              | 9.09%       | 15         | 11.19%      |
| 6-11 months                     | 1,769         | 6.11%       | 31               | 12.25%      | 14                   | 9.45%       | 16              | 8.08%       | 5          | 3.73%       |
| 12-23 months                    | 5,052         | 17.45%      | 55               | 21.74%      | 36                   | 24.32%      | 31              | 15.66%      | 18         | 13.43%      |
| 24-25 months                    | 6,097         | 21.06%      | 53               | 20.95%      | 30                   | 20.27%      | 38              | 19.19%      | 25         | 18.66%      |
| 36-47 months                    | 6,851         | 23.65%      | 47               | 18.57%      | 30                   | 20.27%      | 46              | 23.23%      | 28         | 20.90%      |
| 48-59 months                    | 7,484         | 25.85%      | 51               | 20.16%      | 27                   | 18.24%      | 49              | 24.75%      | 43         | 32.08%      |
| <b>Total</b>                    | <b>28,957</b> | <b>100%</b> | <b>253</b>       | <b>100%</b> | <b>148</b>           | <b>100%</b> | <b>198</b>      | <b>100%</b> | <b>134</b> | <b>100%</b> |

On the other hand, the two hundred fifty-three (253) was classified as "Mod Wasted (MW)". In this case, they were also experiencing a lack of food nutrients to feed, supporting and educating parents, children mostly to their extended family or grandparents, and being unable to monitor their food were considered reasons why they were experiencing moderate waste in their weight for height/length. Therefore, the support of the government and barangay health workers was important to monitor their nutrient status.

Furthermore, the one hundred forty-eight (148) classify as "Severely Wasted (SW)". Compared to being underweight, this condition was typically seen to have been a greater risk for a person's health because it was a sign of acute malnutrition and could have major negative effects if untreated. Therefore, this might have a significant effect and be a serious issue for the city's young people. Severely wasted should support the government on their feeding and vitamins until they reach the normal weight for height/length based on their age bracket.

Moreover, "Overweight (OW)" in weight height/length had a total of one hundred ninety-eight (198) children in Tarlac City. This was identified when a child was overweight, which means that their weight was too high for their height, gender, and age. Typically, it was indicated by a Body Mass Index (BMI) for children of the same age and gender on growth charts that was at or above the 85th percentile and less than the 95th percentile. Overweight children were also monitored by their barangay health workers due to their condition, they were advising their parents on what they should have done to reduce the excess weight of their children.

Lastly, there had been one hundred thirty-four (134) classified "Obese (OB)" children in Tarlac City. The nutrient status of those children was under monitoring by their respective barangay because of their physical condition which may affect their mental awareness and bullying of the other children. Perhaps, this could cause an imbalance between the children's calories consumed and expended throughout the physical activity growth and development.

Genetics, family history, food preferences, levels of physical activity, and environmental factors may all have an important part. Children who were overweight or obese ran a higher risk of developing type 2 diabetes, high blood pressure, heart disease, sleep apnea, and psychological problems like depression and low self-esteem. Making sure children get the right nutrients from a young age would help them maintain a healthy weight and prevent the development of health issues related to obesity.

## Profile of the Participants

### Family Status

Identifying the family structure was important in being engaged in their environment. This could also include the well-raised of well-being. Based on the table they came from a nuclear, single-parent, extended, grandparent, or stepfamily. The nuclear family was a classic family unit comprising two parents and their children, whereas other family types included extended relatives or followed nontraditional living arrangements. Each family structure brings unique advantages and challenges. Understanding these structures aids in comprehending the support networks available to a child. For instance, nuclear families often provide stability, while extended families offer a wider support system. Single-parent households might face challenges balancing responsibilities, whereas stepfamilies navigate merging diverse family units. Based on the table 4 it presents the family status of children in Tarlac City. The data shows that two hundred eighty-six (286) 75. 26% of the respondents were part of the nuclear family or described as the primary or an elementary family were composed married couple and their children, the sixty-three (63) with 16. 57% of the respondents were part of the extended family which is composed of two or more nuclear families or sometimes they called it several generations of families living together under one. On the other hand, twenty-seven (27) with 7. 10% were part of the single-parent family were only the father or mother, and the stepfamily and grandparent family had two (2) with 0. 52% of the respondents.

**Table 4: The Family Status**

| <b>Family Status</b> | <b>f</b>   | <b>%</b>   |
|----------------------|------------|------------|
| Nuclear Family       | 286        | 75.26      |
| Extended Family      | 63         | 16.57      |
| Single-Parent Family | 27         | 7.10       |
| Stepfamily           | 2          | 0.52       |
| Grandparent Family   | 2          | 0.52       |
| <b>Total</b>         | <b>380</b> | <b>100</b> |

Most of the respondents were part of the nuclear or had a complete family. Meaning that both parents residing in the same home typically consist of brother and sister and even grandparents. However, having a large family might have been challenging in how they sustain their everyday necessities like food making it insufficient to meet every family member. Despite having a full or nuclear family, the majority of parents do their best to provide for their family's basic needs and they only work for regular office hours. In addition, the second highest rating of family status was the extended family, they were part of the different families who could help them to feed, and more or less they were neighbours and relatives. Some of them where they could provide and eat whatever they wanted however, sometimes it depended on the food they had on the table. The nutritional status of the children was not sustained due to the different offers by the extended family.

Furthermore, families that fell under the category of single-parent residences, could either have had separated parents who care for the child or on their own. The child could have more focused care and attention when only one parent was there. Due to the parents' separation, there was also less chance of having a larger family. Compared to whole families, single parents tended to give their child's basic needs more attention. There was a greater chance that the child would receive the food of his or her choice if both parents were in charge of providing for the child's daily needs. Four (4) children were also being looked after by their grandparents and stepfamily as a result of their parent's absence. Even if their parents were not there, these kids nevertheless had enough assistance in their everyday lives because their grandparents fed them three or more than per day. The Stepfamily or blended family, is formed when one or both parents have remarried, and children from previous relationships come together in the same household. Therefore, it was clear that children belong to nuclear or complete families in a large number of households, but just a small percentage of children originate from stepfamily and grandparent families.

### Family Income

Income means earnings received from employment, investments, or business matters. The family's income served as the study's source of data for its analysis of the findings in terms of the level of income. The table shows the household income where the nutrition of the child resides after the researchers classified the income levels based on the participants' responses. The family income data as a statistical reference showed that parents had different reasons based on their daily income.

**Table 5: The Family Income**

|                            | <b>f</b>   | <b>%</b>   |
|----------------------------|------------|------------|
| Php 2,000 – 4,000 a month  | 25         | 7.36       |
| Php 5,000 – 10,000 a month | 307        | 80.78      |
| Php 11,000 above a month   | 48         | 12.63      |
| <b>Total</b>               | <b>380</b> | <b>100</b> |

Table 5 presented then families earning between Php 2,000 and Php 4,000 per month had the lowest percentage. This indicates that children suffering from malnutrition in urban areas had poor income as a major contributing factor. The discovery that low income was related to a higher prevalence of malnutrition was important because it emphasizes the need for focused measures meant to combat poverty and widen access to needed like food and healthcare. Additionally, it emphasized the significance of highlighting socioeconomic issues. This could also be addressed to the nutritional status of the children. It was discovered that stunting in children under the age of five was significantly influenced by poor family income. Due to the shortages of well-paying employment opportunities, the majority of parents of malnourished children earned between Php 5,000 and 10,000 per month. These parents typically had only done their primary or secondary education and mostly they were working in driving, vending, factories, or construction. Unfortunately, with the lack of money from this employment the parents were unable to provide for their children's necessities, which caused illnesses and suffering to malnourished.

On the other side, some respondents stated that their family earned more than Php 11,000 each month. Sometimes parents could support their family's demands and expenses because they had regular jobs. These parents, however, could be excessively permissive with their kids, especially when it came to eating habits. Children who had selective or demanding eating habits may favor harmful meals like candies, processed foods, and other junk food over wholesome foods such as vegetables and fruits. These kids were permitted to eat what they wanted, no matter how

nutritious it may be. Even when plenty of food was available, young kids may still be undernourished if they do not eat meals containing vital vitamins and nutrients.

### The Dietary And Nutritional Practices Of Parents

Children were guided by their parents on what and how they could grow with healthy lifestyles. The sustainable health discipline could help to have a better management of well-being. The connections that were secure, dependable, and supportive were essential for children's well-being, growth, and health. Children could be kept safe and healthy with the use of family and parents' guidance. The following were identified nutritional practices of parents in the City of Tarlac and the respondents chose multiple answers based on their practices.

**Table 6:** Nutritional Practices of Parents

| Nutritional Practices of Parents                                                          | <i>f</i> | %      | R   |
|-------------------------------------------------------------------------------------------|----------|--------|-----|
| Decision of choice of food                                                                | 225      | 59.21% | 1   |
| Timeframe of feeding                                                                      | 223      | 58.68% | 2   |
| Impact of social media recommendations                                                    | 220      | 57.89% | 3   |
| Always into "Ready to cook"                                                               | 210      | 55.26% | 4   |
| Prepared to eat/purchase to fast food/ready-made rather to cook                           | 200      | 52.63% | 5   |
| Proper Budget management in Purchasing food stock and changing the regular shopping list. | 180      | 47.36% | 6   |
| Provide Children allowances for thier choice of food                                      | 160      | 42.10% | 8.5 |
| Family Practices                                                                          | 125      | 32.89% | 9   |
| Others (parents abroad)                                                                   | 10       | 2.63%  | 10  |

In Table 6, the "Decision of Choice of Food" had the highest results on the nutrition practices of parents with a frequency of 225. Choosing the best food with proper management of dietary to the children had an impact on maintaining health those foods more likely were mixed vegetables, meat, fish, and liquid drank that could provide the best nutrients to the children. The decision of food to eat is asked of children based on their mood and prepare to eat on time, especially every morning. The decision to choose food was mostly prepared by those hands-on parents by including their children in assisting and managing their food.

Second, among the nutritional practices of the parents was the "Timeframe of feeding practices" which was also a concern with the frequency of 223 respondents by the parents. The impact was the lack of knowledge in terms of providing the right menu and synchronizing the meal every day. The right timeframe for feeding could also been done through the decision-making of the parents and they were guided by the parent's orientation in preparing their food. Likewise, children who were eating at the right time could have good health condition and their meal time could help them be more active less opportunity for malnourished children.

Third, the nutritional practice of parents on the "Impact of social media recommendations" had a frequency of 220 respondents. In this generation, with advanced technology people around the globe have internet access and it had an impact on the people who use different social media platforms. Parents were also watching many videos uploaded mostly about the cooking techniques and recipes that could be used as an alternative way and inculcate some ideas in cooking practice. The impact of social media could help parents prepare food for their children, especially nutritional ingredients. Based on their responses, this could be more detailed, ingredients were readily available, and they offered different styles of food to their children.

Furthermore, the fourth nutritional practice of parents was always "Ready to cook" with a frequency of 210 based on the parents' respondents. This practice happens to those parents who are busy at work because they don't have enough time to prepare their food. We all knew that cooking was time-consuming, therefore this kind of nutritional practice had an impact on their children because ready-to-cook food was mostly preservative food such as frozen food, canned goods, marinated, and others. Ready to cook applies to re-heat, fried in just a few minutes, or literally to ready to eat. The nutrients of children could not sustain in this kind of practice due to the preservative added ingredients and it could not produce the natural vitamins. But somehow there was food ready to cook with low-nutrient.

Moreover, the fifth nutrient practice of parents was "Prepared to eat/purchase fast food/ready-made rather than cook" which had a frequency of 200 respondents. Food establishments were available everywhere because of the demand backed after the COVID-19 pandemic. There were new ways to order food that was readily available to purchase anytime. Grab, Food Panda, Pasabuy, Toktok, and other food riders could offer immediate food delivery door-to-door. With the use of applications, they could add to the kart easily without hassle. However, sometimes the fulfillment of children to eat food from fast food has a big impact mostly on their mood and preparation to eat. In addition, being unable to secure those ingredients and make off the nutrients was absent to the nutrients of the children especially when it was dried, grilled, or did not have soup to offer in their order. This practice was unsure whether to provide the right nutrients to their children but it lessens the time to cook.

On the next nutrient practiced, the "Proper Budget management in Purchasing food stock and changing the regular shopping had a frequency" of 180 parent respondents. Proper budget management in all aspects could produce efficient and effective outcomes preferably in managing food supply to their family, based on the respondents purchasing

food stock could save more money than buying outside or ordering online. These practices were only applicable to those who were hands-on with food preparation and loved to cook, purchasing weekly or monthly food stock could also monitor that regular shopping listed and they could create different food nutrients that could be offered to their children especially breakfast before they came to school. Property budget management had an impact on the nutrient practices of the parents because they were allowed to change the weekly or monthly supply of their food stock which they could add or lessen based on their prepared budget.

Furthermore, another practice was to "Provide Children allowances for their choice of food" with the frequency of 160 parent respondents and ranked seven (7) on the result. Most parents could just have left some money to their children especially when they were not around and unable to prepare food. This practice depends upon the discipline of the children on how they could handle the allowances given by their parents. The positive side of these practices could choose food whatever they wanted but most children still order more often from their chosen fast food. Allowances had something to do with the budget preparation and using it wisely in buying their food. However, children bought food at half of their budget and the rest on some stuffed toys, games, and others. Guidance of the parents in choosing food was important, and providing unsupervised spending on junk food could hurt the health condition of the children.

The nutrient practices of the parents of "Family practices", had the frequency of 120 parents' respondents. Family-oriented in nutrition had a big impact because they could measure the building relationships towards the guidance in their right discipline. They held their family in the highest regard and prioritized them above anything else. They put in a full day's work and took all possible steps to support and feed their family. One of the aspects of family ties was strong communication and discipline, therefore nurturing from the "Eating at one table" could provide influence to boost the confidence of the children to eat more and these family practices would support each other to enhance their food proficiency. Family practices could boost discipline in food nutrients because parents were always there to promote and help their children sustain their healthy bodies.

In addition, other nutrient practices of the parents were also identified with the frequency of 10 parent respondents. The above-mentioned are most nutrient practices but others are more likely to be influenced by neighbours by giving them some tips and advice that have the same situation as their children. Another was the food given by the relatives using tasting new products, and souvenirs came from the other province or country. Sometimes this can have an impact on why children don't sustain their appetite when eating their food because of a lack of preparation and trying other ventures of food management. Those practices have been proven and tested, particularly by parents that is very meticulous in trying different menu to offer to their children.

### **The interventions to promote the nutritional status of children in Tarlac City**

Nurturing children in proper nutritional habits served as the foundation of lifetime well-being. Growth and development benefits from a healthy diet and exercise could also be considered. To strengthen the nutritional status of children in Tarlac City the government should provide and promote programs, projects, and activities allowing to boost the participation of children and parents in health management. For your child's growth and development, you must provide a nutritious, balanced diet. You may have a significant impact on your child's nutrition and relationship with food by making a few easy changes and adopting a positive outlook toward making healthy food choices. The following were interventions made by the non-government organization supported by the City Government of Tarlac, to promote the nutritional status of children in Tarlac City.

#### **Rise and Rebuild Foundation**

The Rise and Rebuild Foundation supported by the Non-Government Organization is dedicated to improving the nutritional status of children in Tarlac City through its well-designed programs. The primary objective of these initiatives is to provide sustenance to children over two months, aiming to enhance their overall nutritional well-being. One distinctive feature of the foundation's programs is the active involvement of parents. Recognizing the crucial role that parents play in the health and development of their children, the collaboration with the Health Officer in Tarlac City signifies a strategic partnership with local health authorities. This collaboration ensures that the nutritional programs align with established health guidelines and standards.

#### **Training for Micro Finance : Kaisa Women's Organization**

The Training for Microfinance, facilitated by the Kaisa Women's Organization and supported by a Non-Governmental Organization (NGO) in Tarlac City, represents a strategic initiative aimed at benefiting children, particularly in terms of their nutritional status. The program, led by the Kaisa Women's Organization, likely focuses on empowering women in the community through microfinance training. This training could encompass financial literacy, small business management, and entrepreneurship skills that form part of the suggested intervention for the study. Also, it helps to support their children to provide and sustain the food for their children. Parents created and suggested interventions with the help of the researcher to promote the nutritional status of children in Tarlac City. The study therefore uplifts the critical importance of early nutrition and physical activity in shaping children's well-being.

### Promote City Health Page: Children Health Management and Awareness

The influence of social media was evident. With the use of different media platforms, it was easy to promote something into business, motivational and inspirational messages, and other educational matters. Likewise, to easily promote the nutritional status of children in Tarlac City, the local government unit should create a Facebook page as the host promoting "Children Health Management and Awareness" in Tarlac City with the help of their experts, midwives, nurses, and public physicians.

This could bring educational platforms aside from printing materials that were easy to advocate nutritional status. The City Health Page could upload different health topics either videos or pictures so that every social media could provide an impact on the user especially the city government of Tarlac. This city health was handled and managed by the City Health Office headed by Dra. Ma. Carmela L. Go (City Health Officer).

### Pangagalaga at Serbisyo: "Araw ng Batang Tarlaquenos"

Children were very much excited when there were activities they could go and play. This program helps to promote and recognize the importance of the nutritional status of the children by giving them educational activities and nutritional management. The city government should provide additional budget allocation towards successful nutritional development programs as part of the basic services provided by the government.

The "Pangagalaga at Serbisyo: Araw ng Batang Tarlaquenos" could celebrate one day league per barangay and schedule based on the city government. In this program, they could also select a "batang makisig" in every barangay not just in the physical aspect but rather dealing with intelligence on how she/he can manage their health guided by their parents. Through this event, the city government could monitor the health of children in terms of strengths and weaknesses which served as a benchmark to propose other programs to them.

**Table 7: Suggested Interventions**

| Measures                                                                                  | Objective                                                                                                                                            | Strategies                                                                                                                                                                                                             | Expected Outcomes                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Rise and Rebuild Foundation</i>                                                        | Improving the nutritional status of children in Tarlac City with the help of NGO                                                                     | Well-designed programs focused on providing sustenance to children over two months, ultimately aiming to enhance their overall nutritional well-being                                                                  | Anticipates achieving tangible improvements in the nutritional status of children in Tarlac City                                                                                                     |
| <i>Training for Micro Finance : Kaisa Women's Organization</i>                            | Aims to empower women, improve children's nutritional status, and promote sustainable economic practices                                             | Campaigns to raise awareness about the link between women's economic empowerment, improved nutritional practices, and children's health                                                                                | Empowered women are better positioned to provide for their families, including the ability to access nutritious food for their children.                                                             |
| <i>Promote City Health Page: Children Health Management and Awareness</i>                 | To promote educational videos online in terms of health management                                                                                   | By the use of social media, the creating of an official page they can upload videos and pictures that was responsive to the need of tarlaquenos in health management and awareness                                     | Parents are expected to follow the page and they would be able to inculcate knowledge on Children Health Management and Awareness that is beneficial for their children securing the nutrient status |
| <i>Pangagalaga at Serbisyo: "Araw ng Batang Tarlaquenos"</i>                              | To promote children's participation and awareness of their nutrition status                                                                          | Providing educational activities in terms of health management in every barangay that promotes the children participation with the help of the City Government                                                         | To boost the confidence and knowledge of the children in their nutrient status using providing educational activities in terms of health management.                                                 |
| <i>City Advertisement: Nutritional Book for Children</i>                                  | To promote additional knowledge in recipes to all parents who having difficulties in preparing their food to their children                          | The City Government should produce a book or catalog that has cooking preparation techniques about the nutrients status of the children.                                                                               | The parents become well-versed in choosing and preparing the perfect food nutrients for their children.                                                                                              |
| <i>Strengthening the capacity to build local production system in the City Government</i> | To promote local production and Responses to local production and help to provide the right time of delivery of goods and services to the community. | The City Government will support those businesses to local production that can provide a right time of delivery and expected to have continuous production of healthy food supply preferably to vegetables and fruits. | To boost the local production in the city maintain the amount of price, and to ensure the time delivery.                                                                                             |

### City Advertisement: Nutritional Book for Children

One of the best ways to promote the nutritional status of children in Tarlac City was to produce books or catalogues that had different nutritional recipes created by the city government of Tarlac with the help of the City Health Office. This nutritional recipe book for children requires important knowledge in cooking and technique, health management, consciousness, handling difficult feeding, and those listed ingredients that indicate the nutritional such as vitamins, protein, and minerals. Providing food information, especially cooking, served as a guide by the parents. When the

decision of choice of food was substantial or it could be an alternate way to create a new one, in addition, it also included the food safety and sanitary in this book. This kind of promotion could also motivate the parents to prepare, to be educated, and to serve the best food to their children with proper nutrition.

### **Strengthening the capacity to build local production systems in the City Government**

There were several causes of undernutrition resulting from being poor. Responses that were integrated were necessary for diet, childcare, education, healthcare access, and water and sanitation. The city government should create several programs and policies to improve the issue. Local production helps to provide the right time of delivery of goods and services to the community, it could help to offer a low number of products and to support locally made products. In the end, the program aimed at native crops with high nutritional value were included in production systems centred on fruits, vegetables, and small ruminants, the integration of local food production and cultural food nutrition traditions into food nutrition education provides value to both of them, and enhancing cross-sectoral coordination.

### **Problems encountered by the respondents which affect the nutritional status of children in Tarlac City**

Every child must get a healthy diet to reach their greatest physical and developmental potential. Children with special medical needs were more likely to experience nutritional problems. To grow and develop to their greatest potential, children require the proper nutrition at the right moment in time. It could be difficult to meet a child's nutritional requirements in the early years, and many parents struggled to provide their kids with adequate food that was age-appropriate, safe, nutritious, and cheap. In this scenario, the following problems encountered by the respondents affect the nutritional status of the children, especially those parents who were responsible for handling the health situation of their children.

**Table 8: Problems Encountered**

| <b>Problems Encountered</b>                                                                | <b>f</b> | <b>%</b> | <b>R</b> |
|--------------------------------------------------------------------------------------------|----------|----------|----------|
| Low family income/poverty                                                                  | 305      | 80.26%   | 1        |
| Unable to sustain/access of nutritious food                                                | 297      | 78.15%   | 2        |
| Low level of consciousness on the proper management of nutrition                           | 221      | 58.15%   | 3        |
| Too much exposure of child on gadgets and other unhealthy activities /                     | 219      | 57.63%   | 4        |
| Environmental factors that may influence a child's access and acceptance of food           | 207      | 54.47%   | 5        |
| Food preferences of child                                                                  | 183      | 48.15%   | 6        |
| Lack of influence to habitual physical Exercises                                           | 143      | 37.63%   | 7        |
| Inadequate knowledge on food safety/sanitary                                               | 117      | 30.78%   | 8        |
| Low level of understanding of parents' rights to use city programs and services for health | 65       | 17.10%   | 9.5      |
| Unavailability of health workers and health supplies in the barangay                       | 65       | 17.10%   | 9.5      |
| Insufficient health services provided by the local government                              | 6        | 1.57%    | 10       |
| Others                                                                                     |          |          |          |

Based on the results in Table 8, the highest number of participants and ranked one who experienced the problems that affect the nutritional status of the children in Tarlac City was the "low family income/poverty" with 305 respondents. It was evident that poverty was a major problem because the health management in the country was unable to sustain it. The low family income of Tarlaquenos proves that they strive to uplift the nutritional status of the children and they face the challenges of providing the right amount of food to eat and it also affects the right time of meal. The low income of the family was the major impact because children don't attain the health complementation. Despite these challenges, they were more giving or prioritizing what was the most important rather than healthy food. Due to their low income, they could not buy and stock nutritious food such as vegetables, and fruits. Most of these families who were part of the less fortunate only defended the resources available around them their budget of food, and capacity.

Secondly, the "Unable to sustain/access nutritious food" got the second spot on the problems encountered with a frequency of 297. The local environment, particularly nearby neighbourhood infrastructure, accessibility, and affordability barriers, had a significant impact on food and nutrition insecurity. Over the years, food insecurity has become an increasingly serious issue. An increasing population and climate change were both likely to cause food prices to increase. Therefore, more people were not able to access nutritious meals. Food security was affected by factors such as income and educational attainment. The unable to sustain healthy food could affect down immune system of the children, and there was no proper health management. The inability to keep and sustain the food of children made them malnourished. Sometimes access to nutritious food was difficult particularly for vegetables, because even if they could buy them outside the high price gave an impact wherein, they could not provide or buy the right number of vitamins available to the vitamins even in fruits.

Third, the "low level of consciousness on proper nutrition" was also part of the problems encountered that affected the nutritional status of children in Tarlac City with a frequency of 221. People's levels of health consciousness about their eating habits differ. Some people thought it was critical to eat nutritiously and that what they ate affected their likelihood of getting sick. The low levelled of consciousness was one of the reasons why children encounter

different diseases due to the improper management of healthy food and even knowledge to coup up what foods should be taken.

Fourth, the "Too much exposure of child on gadgets and other unhealthy activities or environmental factors that may influence a child's access and acceptance of food" was also seen as a problem encountered with a frequency of 219. The use of electronic technologies benefits humanity it provides easy access and knowledge as well. However, this could also have a negative impact because these devices were used so frequently, there were health risks due to the radiation, more time to spend in gadgets rather than eating, and they were more valuable affect to environment that influences children like playing online games. This problem is now vulnerable to the children, as a result of their growing idleness. The impact of environmental habits was found as the weakness in maintaining the healthy lifestyle of the children in Tarlac City because they were at the age of building the right nutrients, they were more eager to play online games and that was how they could skip their meal. The access and acceptance of food influence the environment due to inconsistent sustainable food management. This problem was faced by the parents and even the nutritional health workers in the city

Fifth, the "food preferences of the child" were also a problem encountered facing the nutritional status of children in Tarlac City with frequency 207. Parents were more likely to ask their children what food they were going to cook because children could think and decide on their food preferences especially every morning before they went to school. Parents were having a problem to provide the specific nutrients to their children. The food preferences of children were most likely fried such as fried egg, longganisa, hotdog, and others that were more available in frozen food and sometimes this could also happen even at lunchtime. The food preferences were based on the mood of children which brought an impact to preparing nutritious food. In addition, the snacks, drinking available outside, and ordering fast foods were also part of the food preferences of the children. those foods could not provide a good supply of nutrients in the body of children, and sometimes once the parents could not support the food preferences of their children it could cause emotional disorder and children had a high chance would taking or eating the food prepared by their parents.

Another problem encountered was the "Lack of influence to habitual physical exercises" which was also a factor that affected the nutritional status of children in Tarlac City with a frequency of 183. In this generation, children have more time to spend on social media, particularly watching videos and playing online games. Exercise is one natural way to keep our bodies healthy and strong. Without exercise, the chance of becoming overweight or obese by creating an energy imbalance (e.g., using up less energy through exercise than you were consuming through food) was also a factor that children don't sustain the nutrients of the children. In addition, fit children sleep better in addition to benefiting from regular exercise's health advantages. Regular exercise made children more resilient to both physical and emotional difficulties.

Furthermore, the "Inadequate knowledge of food safety/sanitary" was also part of the problems encountered that affected the nutrients of the children in Tarlac City with a frequency of 183. Food safety could also be part of the preparation to ensure that children were well-secured in food safety. Some of the parents frequently lack the knowledge that was necessary to ensure the safety of their children's food especially in preservation, which could result in harmful food handling and storage habits. Due to incorrect food preparation and storage, there was a higher chance of contracting a foodborne bacterium. Other parents lack knowledge of the right techniques for handling and preparing meals for their children. Also, insufficient sanitation personal hygiene, and improper food handling could result in the spread of bacteria and infections that could result in diseases like diarrhea.

Moreover, the "Low level of understanding of parents' rights to use city programs and services for health" had a frequency of 117. It shows another problem by the parents that affects the nutritional status of the children in Tarlac City. Parents were facing a lack of knowledge regarding their rights to avail of the city's health services and programs that applied to children such as free check-ups, vitamins, and feeding programs. The majority of the parents said they were unable to take part in municipal health efforts because they were unaware of the available treatments, especially those that addressed malnutrition.

Particularly for individuals residing in far-off barangays, the local government had not successfully disseminated information about the services they provided. The limited access to health care services for the children in Tarlaquenos caused bias because sometimes they aren't provided equal distribution of medical supplies such as vitamins, food provided by the city, check-ups, and others. Therefore, the nutritional effects and service delivery of the city were challenging the health of children.

Another problem encountered that affects the nutrition of the children in Tarlac City was the "Unavailability of health workers and health supplies in the barangay" and "Insufficient health services provided by the local government" which had the same frequency of 65. Most of the parents said that, in some barangays, there were insufficient health workers and supplies available, which prevented them from bringing or asking for medicine for their kids. Due to other obligations, some health officials were unable to come frequently, which was inconvenient for parents who needed to contact them on a particular day, and they were not available on the spot especially if it was urgent. Parents were forced to seek medical attention at hospitals because barangay health offices lacked sufficient health supplies. The health services provided by the local government or the city had proven unable to address the needs of parents to their children due to the lack of medical facilities available in their barangay. Sometimes you had to go directly to the hospital to support the nutrients. Another concern was the feeding program of the barangay the children were unable to sustain due to the lack of budget, health workers, and cooperation.

Lastly, the other problems encountered that affect the nutrition of the children in Tarlac City were personal reasons, unable to support their children, number spacing of children, and being spoiled to their children. Discipline had a big impact on the management of the health of children. Personal reasons were unidentified and this couldn't give any solution aside from their strategies. The unable to support their children was not acceptable although we could understand their life situation. The passage highlights the role of discipline in managing children's health. This likely refers to instilling healthy eating habits, regular mealtimes, and the importance of balanced nutrition. Proper discipline can positively influence a child's dietary choices and overall health. Another was the poverty increase in relation to lack of knowledge of family planning which affects the children and families due to poverty.

### **Measures proposed to improve the nutritional status of children in Tarlac City**

The advantages of establishing healthy habits of eating and living early on could improve children's nutrition and health into maturity and boost productivity for both individuals and nations. The problem encountered by the respondents had been mentioned leading to the nutrition status of children in Tarlac City, those problems continually served as barriers to the health management headed by the parents and even health workers to protect the nutritional status. The following were interventions suggested by the respondents with the help of the researcher to solve the prevailing problems encountered in handling the nutritional status of children in Tarlac City.

#### **Promote Free Seedlings for sustainable health development**

The top problems encountered were being unable to sustain/access nutritious food and low family income/poverty. The resources of food nutrients did not apply to those urban areas. The city government with the collaboration of the Department of Agriculture should promote the free seedlings to the community not just to the farmers but rather this was opened to all Tarlaquenos who want to plant vegetables in their backyard such as tomatoes, peppers, squash, cucumbers, arugula, okra, eggplant, and others that apply to plant within the certain of the backyard. Therefore, this could address the poverty due to the lack of resources and promote sustainable health development the city government had proven that everyone was open to free seedlings not only the regular farmer but also to parents who were responsible for taking care of their children and giving them a better food preparation.

#### **City Ordinance: Granting Benefits Discount for Children Nutrients**

The city ordinance granting benefits discounts for children's nutrients had something to do with the same pattern to the senior citizen. Purchasing kids such as milk, vegetables, vitamins, and other intake foods either liquid or solid could give them a discount in any convenience store. This was only applicable up to 7 years old and provided with ID when purchasing. The granting of discounts for children's nutrients could save up to 10% discount on top of the total amount of purchase. This city ordinance was made under the memorandum agreement of non-governmental organizations particularly private businesses. The granting benefits discount for children addressed the problem of low family income/poverty, and the need to sustain/access nutritious food for the children.

#### **Parents Training and Seminar for Children Develop and Awareness of Nutrition**

The training and seminar could help those parents gain extraordinary information, especially focusing on the health of children together with the barangay health workers. With the help of the city government of Tarlac and the collaboration of the Department of Health, they should conduct mandatory parent training and seminars on how they could exercise the best nutritional habits for children. Aside from the promotion of the nutritional book of recipes mentioned above, these kinds of activities could be engaged and better hands-on practices had been done in this program. This training and development comprise the following topics such as food discipline, preferences of foods, psychological impact of loss of appetite, awareness used social media, sanitary and food safety, and others. Therefore, it could develop maturity and be a resource for parents on how they could handle some nutrient activities for their children.

#### **Competitive Health Workers for Better Health Service**

The distribution of healthcare professionals is a critical factor in determining the accessibility and quality of healthcare services in various regions. Often, healthcare workers are inclined to work in areas offering higher wages and closer proximity to where they received their training. Unfortunately, this preference exacerbates the issue of unequal access to healthcare services across the nation, particularly in underserved or remote areas. Addressing the maldistribution of healthcare professionals is crucial to improving access to healthcare services for the entire population. While the City Health Midwives play a pivotal role in generating and inputting health data with the support of Barangay Health Workers and Barangay Nutrition Scholars, additional skilled professionals such as paediatricians, nurses, and midwives are equally important. Recognizing this need, the city government's request for additional healthcare workers, including physicians, nurses, and midwives, is a proactive step toward addressing healthcare gaps. By recruiting more professionals, especially those with diverse specializations, it becomes feasible to establish a more robust and well-rounded healthcare system. These additional professionals not only bolster the capacity of health centers but also enhance the overall effectiveness of healthcare delivery at the grassroots level.

**Table 9:** Measures to improve the nutritional status of children in Tarlac City

| Measures                                                                                | Objective                                                                                                                         | Strategies                                                                                                                                                                                                       | Expected Outcomes                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Promote Free Seedlings for sustainable health development</i>                        | To promote equitable access and enhance the urban planning for healthy food                                                       | The City Government of Tarlac should invest in different seedlings that can be given to the parents aside from the farmers. Anyone can participate in urban planning to secure the resources for healthy food.   | Parents can solve the problem of poverty and the inability to sustain/access nutritious food because of urban planning.                                                                                                                                                                                               |
| <i>City Ordinance: Granting Benefits Discount for Children Nutrients</i>                | To provide an opportunity to buy nutritious food for children at low prices.                                                      | By the power vested of the City Government Officials, creating city ordinance on granting benefits discount for children's nutrients help the parents to buy low price of food that apply to any food nutrients. | Parents and their children can participate in all the convenience stores to buy healthy food. this can also promote equitable access and equality. In addition, the public-private partnership can be more powerful in terms of a joint memorandum of agreement in pursuing public service and social responsibility. |
| <i>Parents Training and Seminar for Children Development and awareness to Nutrition</i> | To provide skills and knowledge in handling children's growth development to the parents                                          | The City Government and Barangay will coordinate in facilitating the parent's training and seminar with the help of the Department of Health towards Child Development and Awareness of nutrition.               | Parents are now knowledgeable enough on how they manage the nutrients of their children at the same time they can help the local government to attain the goal of providing a good healthy well-being of the children.                                                                                                |
| <i>Competitive HealthWorkers for better Health Service</i>                              | To expand and hire knowledgeable health workers to help the Barangay Health Workers in assisting and managing the nutrient status | The City Government should hire additional health workers especially public physicians and nurses to supervise the nutrient status in Tarlac City                                                                | Expect that there will be more available health workers in any point of barangay health center and those health services pursuing health nutrients can be addressed.                                                                                                                                                  |

### Implications of the study to Public Administration

As it was responsible for administering and implementing government policies and programs that had significant effects on citizens' lives, public administration was an essential part of effective governance. It was the responsibility of public employees, especially Municipal and Barangay Health Officers, to see that these policies and programs were carried out in a responsible, efficient, and transparent way. The implication of this study to public administration focuses on public health management, service delivery, private-public partnership (PPP), and promoting good governance.

One of the key components in achieving the government's goals for our nation was the participation of the Filipino people. Collaboration between the public and private sectors, supporting one another with equal participation from all Filipinos, was another factor in the achievement of social services. This was probably started by our government, which must have openness and accountability for the actions it must do. Managing the number of Filipinos who suffer from starvation was one of our government's biggest responsibilities. Even though millions of Filipinos were able to eat at the appropriate times, not enough food was offered. Some best practices of other cities relative to this study for Las Piñas, Marikina, Parañaque, and Tagaytay are provision of flu vaccines to seniors, collaborations with citizenry on health programs, innovations for monitoring health promoting sustainable health development through various caravans, cash incentives for members with senior citizens, and strengthening enactment of no-smoking areas in cities. Providing that everyone in society had access to high-quality healthcare was one of the primary responsibilities of public employees in the health sector. This entails giving individuals who are ill or injured medical treatment and support, as well as putting policies and programs in effect to prevent illness and encourage healthy living. In order to give the community the best services possible, public administration in health care requires managing and coordinating resources like medical supplies, medical equipment, and qualified health personnel.

Similarly, public employees in the health sector were responsible for ensuring access to healthcare as well as addressing problems with public health like children's health management. To address this, it was necessary to create

programs and procedures that were specifically designed to prevent and treat malnutrition among people who were vulnerable, especially children. Identifying the core causes of malnutrition, such as poverty and poor access to food, was essential for effective public administration in this area. It was necessary to provide health officers and other implementers with enough orientation, training, and human relations seminars in order to enhance their abilities. They would be able to perform better and give services more effectively as a result. The findings of the study could also be used as a benchmark for the local government of Tarlac City to develop programs, projects, and activities for successful interventions for nutrient status. Public administrators can play a role in raising public awareness about the importance of child nutrition. They may launch educational campaigns, partner with advocacy groups, and engage in community outreach to inform parents and caregivers about best practices for child nutrition.

Public administrators allocate resources to different government programs and services, including those related to child nutrition. They must make decisions on budgetary allocations to ensure that essential services, such as school meal programs, maternal and child health services, and nutrition education, are adequately funded. Furthermore, the administrative and managerial skills, organizational frameworks, and mechanisms required to provide the budget to deliver healthcare services more effectively, efficiently, and equally were all covered under public health management. The discipline of healthcare management was constantly changing and evolving, including important duties in patient care, family involvement, and staff management. A Master of Public Administration degree focusing on Health Care Management could help to improve the fundamental knowledge and develop abilities in the field of health management.

## Conclusions

The children of Tarlac City were classified "Normal" based on their weight for age, as they promote nutritional wellness, and parents capable of providing the right amount of food nutrients to their children. Those children who were part of severely underweight should be supervised and monitored well based on their food preferences. The average for height for age was also considered in determining how children were healthy. In this particular classification, the children in Tarlac City were identified "Normal". Therefore, it proves that children were well raised in managing their high limits and used discipline for example for having a good sleep in the afternoon and night. On the other hand, most children who were part of "Severely Stunted (SST)" most of them were not well supervised due to their parent's absences. Weight for height/length was another classification to observe how children were healthy. Likewise, children in Tarlac City were in "Normal" proving that they met the right amount of food nutrients.

The most common family structure to which the children of Tarlac City was the nuclear or complete family. Families with many members frequently struggled to meet all of their children's demands because the parents did not have a reliable source of income. However, the four children who were part of the stepfamily and grandparents experienced physical and emotional stress that was considered a barrier to attaining good nutrition. The children were mostly part of the family income of Php5,000 to 10,000 a month from parents who only reached elementary and high school levels and they could provide the basic needs of their family. The nutrients of the children could be attained at normal levels. Family income who were earning php 2,000 to 4,000 a month mostly struggled to provide the right amount of food nutrients to their children.

The best way to sustain the nutrients of the children was the "Decision of choice of food" where the children of Tarlac City participated in the food preparation of their children based on their moods or preferences to eat. Among the least nutritional practices of the parents, the "Family practices" such as family eating together at one table were absent and this could be a negative factor why children were unable to attain their best nutrient to intake due to the parents were not around to supervise on what food they would go to ate and prepare of the children. The local government of Tarlac City should "Promote City Health Page: Children Health Management and Awareness" in order to boost and help the parents guide their children to prepare and manage their health condition. This could be a good venture and easy to promote health awareness because social media is very rampant nowadays. Parents in Tarlac City saw the "Low family income/poverty" as the main reason why the nutrients of the children in Tarlac were unable to attain. They don't have a decent job and source of income to sustain. The Local Government of Tarlac is still looking for the best solution to help parents manage their children's nutrients, therefore the insufficient health services of the local government were still considered the least problem encountered. Assisting with free vitamins and free checks was sometimes a barrier to attaining regular health consultations.

The researcher proposed that "City ordinance: granting benefits discount for children nutrients" could provide additional privileges to children. By this city ordinance, the granting benefits discount for children's nutrients had something to do with benchmarking senior citizen benefits. Purchasing groceries such as milk, vegetables, vitamins, and other intake foods for children was a big help in securing the best price for the best nutrients. The gathered findings might help educate policymakers and government officials about the necessity of enhancing healthcare services and putting strategies to work on nutritional plans of the children within the City of Tarlac.

## Contribution of authors

This paper has a single author and confirms that the author reviewed this study.

## Funding

This work received no specific grant from any funding agency.

## Conflict of Interest

The author declares that there is no conflict of interest.

## Acknowledgment

The researcher would not have been able to finish this final duty without the guidance, assistance, and inspiration of friends, family, and colleagues. To our Dean, Dr. Edwin T. Caoleng, mentor for his continuous excitement and support in completing my study. The researcher's appreciation for his efforts in identifying and assisting him is beyond words. His engagement in directing and offering point of view to make this research more accurate and beneficial has made him generous.

My sincere gratitude to the honorable panel of examiners, panel chair and former TSU President, Dr. Myrna Q. Mallari, Dr. Noel H. Mallari, Dr. Grace N. Rosete, Dr. Patricia Ann D. Estrada, and Dr. Roswaldo G. Fermin for their informative and significant comments, which helped to improve this paper's broadness and depth. Also, thank you especially to my statistician, Dr. Nancy Lenon-Mati for taking the time and making the effort to guide my data and information accurately. This also extends for my CPAG Jaguars—thank you for all the sharing and friendship we've developed over the years.

I want to extend my appreciation to Tarlac City Mayor Hon. Maria Cristina Angeles and Dr. Ma. Carmela L. Go, our City Health Officer, Tarlac City, for allowing me to use the data as a point of reference in my study. Lastly, I thank GOD ALMIGHTY for guiding me through all the struggles and issues I experienced. I have felt his unconditional support and love all the time. He is the reason I was able to successfully finish this paper.

## References

- Aguayo, V. M., & Menon, P. (2016). Stop stunting: Improving child feeding, women's nutrition and household sanitation in South Asia. *Maternal and Child Nutrition*, 12, 3–11. <https://doi.org/10.1111/mcn.12283>
- Action Against Hunger. (n.d.). Types of Malnutrition and its Symptoms.
- AFP Relaxnews. (2020). Engaging in family meals helps to improve eating habits, says study. R
- BMC Nutrition. (2023). Dietary practices and nutritional status of children served in a social program for surrogate mothers in Colombia.
- Brand Room. (2023). A decade of helping Filipino children lead happier, healthier lives through nutrition education.
- Candido, S. (2023). PHO presents the nutritional status of Eastern Samar.
- Chamidah, N., Tjahjono, E., Fadilah, A. R., & Lestari, B. (2018). Standard Growth Charts for Weight of Children in East Java Using Local Linear Estimator. *Journal of Physics: Conference Series*, 1097(1). <https://doi.org/10.1088/1742-6596/1097/1/012092>
- De Silva, I., & Sumarto, S. (2018). Child Malnutrition in Indonesia: Can Education, Sanitation and Healthcare Augment the Role of Income? *Journal of International Development*, 30(5), 837–864. <https://doi.org/10.1002/jid.3365>
- Fekadu, Y., Mesfin, A., Haile, D., & Stoecker, B. J. (2015). Factors associated with nutritional status of infants and young children in Somali Region, Ethiopia: A cross-sectional study Global health. *BMC Public Health*, 15(1), 1–9. <https://doi.org/10.1186/s12889-015-2190-7>
- Francisco, C. (2021). Bangsamoro solon raises concern over region's poor nutrition.
- Frontiers. (2023). Prediction and analysis of trends in the nutritional status of children under 5 years in Iran: reanalysis of the results of national surveys conducted between 1998 and 2020.
- Global Nutrition Report. (2022). Country Nutrition Profiles.
- Graham-Mcgregor, S. M., Fernald, L. C. H., Kagawa, R. M. C., & Walker, S. (2014). Effects of integrated child development and nutrition interventions on child development and nutritional status. *Annals of the New York Academy of Sciences*, 1308(1), 11–32. <https://doi.org/10.1111/nyas.12284>
- Hoover-Fong, J., McGready, J., Schulze, K., Alade, A. Y., & Scott, C. I. (2017). A height-for-age growth reference for children with achondroplasia: Expanded applications and comparison with original reference data. *American Journal of Medical Genetics, Part A*, 173(5), 1226–1230. <https://doi.org/10.1002/ajmg.a.38150>
- Inquirer.net. (2022). DOST-FNRI: Boost students' nutrition to prepare them for full in-person classes.

- Kolic, J., O'Brien, K., Bowles, K. A., Iles, R., & Williams, C. M. (2020). Understanding the impact of age, gender, height and body mass index on children's balance. *Acta Paediatrica, International Journal of Paediatrics*, 109(1), 175–182. <https://doi.org/10.1111/apa.14933>
- Leroy, J. L., Ruel, M., Habicht, J. P., & Frongillo, E. A. (2015). Using height-for-age differences (HAD) instead of height-for-age z-scores (HAZ) for the meaningful measurement of population-level catch-up in linear growth in children less than 5 years of age. *BMC Pediatrics*, 15(1), 1–11. <https://doi.org/10.1186/s12887-015-0458-9>
- Lifestyle, inq. (2020). Ensuring Family Nutrition by Practicing Food Safety. Retrieved from
- Mangaluz, J. (2023). DSWD, DOH unite to battle stunting through multisectoral nutrition project.
- Mercado, P. (2017). Whose business is malnutrition?
- Mwangome, M. K., & Berkley, J. A. (2014). The reliability of weight-for-length/height Z scores in children. *Maternal and Child Nutrition*, 10(4), 474–480. <https://doi.org/10.1111/mcn.12124>
- Philippine Daily Inquirer. (2020). What's the bigger picture?
- Philippine Statistics Authority. (2023). PSA Clears the Conduct of the 2023 National Nutrition Survey (NNS).
- Rodd, C., Metzger, D. L., Sharma, A., Cummings, E., Chanoine, J. P., Lawrence, S., & Palmert, M. (2014). Extending World Health Organization weight-for-age reference curves to older children. *BMC Pediatrics*, 14(1), 1–7. <https://doi.org/10.1186/1471-2431-14-32>
- Shrestha, S. K., Vicendese, D., & Erbas, B. (2020). Water, sanitation and hygiene practices associated with improved height-for-age, weight-for-height and weight-for-age z-scores among under-five children in Nepal. *BMC Pediatrics*, 20(1), 1–10. <https://doi.org/10.1186/s12887-020-2010-9>
- Tarlac City Information Office. (2020). General Assembly of Barangay Nutrition Scholars.
- Trade Economics. (2023). China-Child Malnutrition.
- United Nations Nutrition. (2022). On the road to 2030: Putting the UN-Nutrition strategy into practice during the age of intersecting crises.
- World Health Organization. (n.d.). Nutrition.