
Nutritional Status of Children in Cabanatuan City: An Assessment Study

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ABSTRACT

This study assessed the nutritional status of children aged 0–59 months in Cabanatuan City, Nueva Ecija, using anthropometric indicators based on World Health Organization (WHO) growth standards. Employing a descriptive cross-sectional research design, data were gathered from a total of 9,068 children selected through random sampling. The findings revealed that while the majority of children exhibited normal weight-for-age (44.40%–50.37%), height-for-age (39.69%–49.41%), and weight-for-length/height (22.00%–24.00%), a proportion still suffered from undernutrition, including underweight (0.61%–1.68%), stunting (1.20%–2.47%), and wasting (0.35%–1.57%). Additionally, early signs of overnutrition were detected, with overweight and obesity rates ranging from 0.37% to 3.83% and 0.41% to 1.82%, respectively. These trends highlight the growing “double burden of malnutrition” in urban settings, where both under- and overnutrition coexist. The results underscore the importance of strengthening nutrition-specific and nutrition-sensitive programs, including maternal education, early child feeding practices, and regular growth monitoring. The study calls for integrated, community-based interventions and policy responses that address both nutritional deficits and the rising incidence of childhood obesity, to ensure optimal growth and development in the pediatric population of Cabanatuan City.

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1. INTRODUCTION

The nutritional status of children is a fundamental indicator of public health and a mirror of a community's overall well-being and development. Proper nutrition during childhood is essential as it influences not only physical growth but also cognitive development, emotional stability, and the ability to perform well in school and other activities. Children who receive adequate nutrition are more likely to thrive, while those who experience poor nutrition are at risk of a host of health issues. Undernutrition can lead to stunted growth, weakened immune systems, and delayed development, making children more susceptible to infections and diseases. On the other hand, overnutrition—often associated with unhealthy diets and sedentary lifestyles—can result in obesity and increase the risk of non-communicable diseases such as diabetes, hypertension, and cardiovascular problems even at a young age.

In Cabanatuan City, a dynamic and growing urban area in the Philippines, child nutrition has become a pressing concern. The city's rapid urbanization, widening socio-economic gap, and evolving food consumption patterns have created a complex scenario where some children face hunger and micronutrient deficiencies, while

others struggle with obesity and related health conditions. These nutritional problems reflect deeper issues such as limited access to affordable healthy food, lack of nutrition education, and inadequate implementation of community-based nutrition programs.

To address these concerns, a systematic assessment of the nutritional status of children aged 0–12 years in Cabanatuan City is essential. This assessment study seeks to evaluate the current state of child nutrition, identify the major contributing factors—such as family income, parental education, access to healthcare and food security—and assess the effectiveness of existing nutrition-related programs and policies. By analyzing both quantitative data (such as prevalence rates of underweight, stunting, wasting, and obesity) and qualitative aspects (such as dietary habits and socio-economic conditions), the study aims to generate a comprehensive understanding of the challenges faced by the community.

The findings of this project will provide critical baseline data that can guide government officials, healthcare providers, educators, and non-government organizations in designing more targeted and effective interventions. In turn, these interventions can help prevent malnutrition, promote healthy lifestyles, and improve the overall health outcomes of children in the city. Furthermore, the study will offer evidence-based recommendations that can be integrated into local health programs and policy-making efforts to ensure sustainable improvements in child nutrition. Ultimately, this initiative aspires to support Cabanatuan City's broader goals of enhancing child welfare, reducing health disparities, and contributing to the achievement of national and global sustainable development targets related to health and nutrition. Through collaborative and informed action, the city can build a healthier future for its children—its most valuable resource.

2. RESEARCH METHOD

This section outlines the research design, study area, target population, sampling technique, data analysis procedures, and ethical considerations employed in conducting the assessment of the nutritional status of children aged 0–59 months in Cabanatuan City. The methods used aimed to ensure accuracy, reliability, and ethical integrity in the collection and interpretation of data.

A descriptive cross-sectional research design was adopted to evaluate the nutritional status of children aged 0–59 months in Cabanatuan City. This approach allowed for data collection at a single point in time, aiming to determine the prevalence of nutrition-related issues and identify associated factors within the population.

The study took place in selected barangays across Cabanatuan City, Nueva Ecija, Philippines. The target population comprised and limited only to children aged 0–59 months, accompanied by their parents or guardians. The selection of participants was done with consideration for socio-economic diversity to ensure that the data collected would be representative of the broader community.

A stratified random sampling method was used to identify study participants. Barangays were first chosen to capture both urban and semi-urban settings. A total of 9,068 children were included in the study.

The collected data were coded, tabulated, and analyzed using percentage distribution to describe the prevalence of various nutritional conditions among the sampled population.

The study adhered to established ethical standards as required by the City Health Office. Prior to participation informed consent was secured from parents or legal guardians. The anonymity and confidentiality of all participants were strictly protected throughout the research process.

3. RESULT AND DISCUSSION

Nutritional Status of Children in Cabanatuan City, Nueva Ecija: An Assessment

This presents a detailed interpretation of the nutritional status of children aged 0–59 months in Cabanatuan City, Nueva Ecija, based on the 2024 Nutrition Summary Report. Using anthropometric indicators aligned with World Health Organization (WHO) growth standards namely Weight-for-Age (WFA), Height-for-Age (HFA), and Weight-for-Length/Height (WFL/H) this analysis examines nutritional trends and health implications within the context of relevant contemporary literature and national nutrition frameworks.

WEIGHT-FOR-AGE (WFA)

Table 1. Weight-for-Age (WFA) Prevalence of Underweight and Overweight Conditions

INDICATOR	0-5 MONTHS				TOTAL
	BOYS	%	GIRLS	%	
WFA - NORMAL	754	45.86	730	44.40	1484
WFA - OVERWEIGHT	63	3.83	51	3.10	114
WFA - UNDERWEIGHT	23	1.40	10	0.61	33

INDICATOR	0-5 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
WFA - SEVERELY UNDERWEIGHT	7	0.43	6	0.36	13
TOTAL					1644
	6-11 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
WFA - NORMAL	843	48.28	788	45.13	1631
WFA - OVERWEIGHT	28	1.60	24	1.37	52
WFA - UNDERWEIGHT	27	1.55	16	0.92	43
WFA - SEVERELY UNDERWEIGHT	14	0.80	6	0.34	20
TOTAL					1746
	12-23 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
WFA - NORMAL	1920	47.75	1851	46.03	3771
WFA - OVERWEIGHT	58	1.44	57	1.42	115
WFA - UNDERWEIGHT	62	1.54	42	1.04	104
WFA - SEVERELY UNDERWEIGHT	17	0.42	14	0.35	31
TOTAL					4021
	24-35 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
WFA - NORMAL	1713	45.61	1832	48.78	3545
WFA - OVERWEIGHT	40	1.06	41	1.09	81
WFA - UNDERWEIGHT	63	1.68	50	1.33	113
WFA - SEVERELY UNDERWEIGHT	11	0.29	6	0.16	17
TOTAL					3756
	36-47 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
WFA - NORMAL	2039	47.83	2011	47.17	4050
WFA - OVERWEIGHT	46	1.08	29	0.68	75
WFA - UNDERWEIGHT	52	1.22	57	1.34	109
WFA - SEVERELY UNDERWEIGHT	18	0.42	11	0.26	29
TOTAL					4263
	48-59 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
WFA - NORMAL	2285	50.37	2074	45.72	4359
WFA - OVERWEIGHT	35	0.77	17	0.37	52
WFA - UNDERWEIGHT	60	1.32	43	0.95	103
WFA - SEVERELY UNDERWEIGHT	8	0.18	14	0.31	22
TOTAL					4536

The data revealed on Table 1. Weight-for-Age (WFA) Prevalence of Underweight and Overweight Conditions, that the majority of children across all age categories in Cabanatuan City, Nueva Ecija, maintained a normal weight-for-age, with prevalence rates ranging from 44.40% to 50.37%. This indicates that nearly half of the children in the city are within the standard growth parameters for weight relative to age, suggesting a baseline adequacy in general nutritional status. However, undernutrition remains a persistent concern, with underweight prevalence ranging from 0.61% to 1.68% and severe underweight from 0.16% to 0.80%, indicating the existence of nutritional deficiencies that may affect developmental potential if left unaddressed.

The presence of underweight children in an urbanized locality such as Cabanatuan City despite proximity to health services and food markets underscores the complex and multifactorial nature of child malnutrition. Recent evidence (Escobar et al., 2024) underscores that in urban poor communities, nutritional inadequacy is not solely a function of food scarcity but is influenced by household-level determinants such as maternal knowledge of child feeding practices, limited purchasing power, poor sanitation, and intra-household food allocation dynamics. Food insecurity, though often associated with rural deprivation, remains prevalent in urban low-income households, where high food prices and income instability limit access to nutritionally adequate and safe foods (FAO, 2024).

Moreover, suboptimal complementary feeding practices, particularly during the critical transition period from exclusive breastfeeding to solid food intake (6–24 months), have been associated with undernutrition. According to Garcia and Llanes (2025), delayed or inappropriate introduction of complementary foods whether due to cultural beliefs, lack of maternal education, or poor access to fortified weaning foods can impair growth velocity, particularly in under-five populations.

It is important to note that while the proportion of overweight children remains relatively low (0.37% to 3.83%), this should not be regarded complacently. The early emergence of overnutrition, particularly among children in urban areas, is a growing concern under the phenomenon referred to as the “double burden of malnutrition” (UNICEF, WHO, & World Bank, 2024). As described in the 2024 Global Nutrition Report, this double burden manifests in low- and middle-income countries like the Philippines, where undernutrition and overweight coexist, often in the same communities and even within the same households.

Nutrition transition theory, originally advanced by Popkin and contemporaries and now further supported by the 2025 Asia-Pacific Urban Nutrition Report (UNESCAP, 2025), explains how urbanization and economic changes lead to increased availability and consumption of calorie-dense, processed, and nutrient-poor food, contributing to dietary shifts associated with obesity. As urban families increasingly rely on convenient and affordable ultra processed foods, especially with the rise of food delivery platforms and aggressive marketing strategies targeting children, the risk of early-life overweight and obesity escalates.

Furthermore, even low levels of childhood overweight during the preschool years are significant. Recent cohort data from Southeast Asia (Tan et al., 2024) reveal that early childhood overweight is strongly predictive of later-life obesity, metabolic syndrome, and cardiovascular risks, highlighting the importance of preventive measures at the earliest stages of life.

The findings in Cabanatuan City are thus reflective of a broader epidemiological trend and warrant a comprehensive public health response. Interventions must go beyond feeding programs and address the social determinants of malnutrition through maternal education, promotion of exclusive breastfeeding and age-appropriate complementary feeding, and access to affordable, healthy foods. Likewise, early childhood nutrition surveillance, combined with family-centered counseling, can serve as a vital tool to identify children at risk for both under- and overnutrition.

HEIGHT-FOR-AGE (HFA)

Table 2. Height-for-Age (HFA): Stunting and Linear Growth Deficits

INDICATOR	0-5 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
HFA - NORMAL	668	40.17	660	39.69	1328
HFA - TALL	118	7.10	125	7.52	243
HFA - STUNTED	40	2.41	20	1.20	60
HFA - SEVERELY STUNTED	19	1.14	13	0.78	32
TOTAL					1663
	6-11 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
HFA - NORMAL	723	41.70	664	38.29	1387
HFA - TALL	104	6.00	121	6.98	225

INDICATOR	0-5 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
HFA - STUNTED	27	1.56	26	1.50	53
HFA - SEVERELY STUNTED	47	2.71	22	1.27	69
TOTAL					1734
INDICATOR	12-23 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
HFA - NORMAL	1691	42.26	1597	39.92	3288
HFA - TALL	209	5.22	210	5.25	419
HFA - STUNTED	99	2.47	91	2.27	190
HFA - SEVERELY STUNTED	61	1.52	43	1.07	104
TOTAL					4001
INDICATOR	24-35 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
HFA - NORMAL	1606	42.36	1695	44.71	3301
HFA - TALL	123	3.24	120	3.17	243
HFA - STUNTED	79	2.08	60	1.58	139
HFA - SEVERELY STUNTED	54	1.42	54	1.42	108
TOTAL					3791
INDICATOR	36-47 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
HFA - NORMAL	1955	46.07	1900	44.77	3855
HFA - TALL	85	2.00	77	1.81	162
HFA - STUNTED	76	1.79	63	1.48	139
HFA - SEVERELY STUNTED	47	1.11	41	0.97	88
TOTAL					4244
INDICATOR	48-59 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
HFA - NORMAL	2277	49.41	2007	43.55	4284
HFA - TALL	62	1.35	54	1.17	116
HFA - STUNTED	75	1.63	76	1.65	151
HFA - SEVERELY STUNTED	33	0.72	24	0.52	57
TOTAL					4608

The proportion of children in Cabanatuan City as shown in Table 2. Height-for-Age (HFA): Stunting and Linear Growth Deficits, with normal height-for-age ranged from 39.69% to 49.41%, indicating that nearly half of the surveyed pediatric population falls within the acceptable range of linear growth according to WHO child growth standards. However, stunting, a manifestation of chronic undernutrition, was observed in 1.20% to 2.47% of children, while severe stunting ranged from 0.52% to 2.71%. Though these rates are significantly lower than the national stunting prevalence of 26.7% as reported by the Expanded National Nutrition Survey (DOST-FNRI, 2021), their presence remains a public health concern due to the irreversible and intergenerational consequences associated with linear growth failure.

Stunting is a complex condition that results from prolonged inadequate nutrient intake, frequent infections, and suboptimal care practices, especially within the first 1,000 days of life—an established critical window for child growth and neurodevelopment. According to the World Health Organization (2024), stunting is not merely a reflection of short stature but is indicative of pervasive developmental compromise that includes cognitive impairment, poor school performance, and reduced earning potential in later life. Recent findings from the 2024 UNICEF Child Nutrition Outlook underscore that stunted children are at higher risk of poor academic attainment and economic marginalization as adults, perpetuating cycles of poverty and health inequality.

The low stunting prevalence in Cabanatuan City, relative to national and regional averages, may be attributed to strategic local implementation of nutrition-sensitive and nutrition-specific programs. These likely

include widespread maternal education campaigns, enhanced antenatal and postnatal care access, micronutrient supplementation programs, and early childhood nutrition screening. The 2025 Progress Report on the Philippine Plan of Action for Nutrition (PPAN 2023–2028) credits several local government units, including those in Central Luzon, for their aggressive scale-up of targeted interventions that directly support child growth outcomes. These include the First 1000 Days program, Infant and Young Child Feeding (IYCF) initiatives, and strengthened Barangay Nutrition Scholars (BNS) systems (National Nutrition Council, 2025).

Nonetheless, the existence of any degree of stunting, even in low percentages, signals persistent inequalities that may be rooted in household socioeconomic status, maternal education levels, and environmental factors such as water and sanitation. As pointed out by Santos et al. (2024), even in moderately urbanized Philippine cities, pockets of vulnerability exist often among informal settlers or transient households where access to safe water, adequate sanitation, and diverse food remains suboptimal.

Furthermore, emerging evidence suggests that climate-related shocks and urban food insecurity are increasingly linked to stunting in low- and middle-income countries. The Global Nutrition Report (2024) emphasizes that rising food prices, climate volatility, and disruptions to health service delivery exacerbated by pandemics and natural disasters can hinder linear growth even in urban centers previously considered low-risk.

From a nursing and public health perspective, the results reaffirm the necessity of continued multisectoral collaboration, regular growth monitoring and promotion (GMP) activities, and maternal support systems to detect and address growth faltering early. Furthermore, healthcare providers must remain vigilant in implementing context-specific interventions tailored to the needs of high-risk populations within urban areas.

WEIGHT-FOR-LENGTH/HEIGHT (WFL/H)

Table 3. Weight-for-Length/Height (WFL/H): Acute Malnutrition and Emerging Obesity

INDICATOR	0-5 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
WFL/H - NORMAL	720	43.58	699	42.31	1419
WFL/H - OVER WEIGHT	32	1.94	28	1.69	60
WFL/H - OBESE	30	1.82	29	1.76	59
WFL/H - MODERATELY WASTED	23	1.39	26	1.57	49
WFL/H - SEVERELY WASTED	37	2.24	28	1.69	65
TOTAL					1652
	6-11 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
WFL/H - NORMAL	798	23.35	752	22.00	1550
WFL/H - OVER WEIGHT	30	0.88	26	0.76	56
WFL/H - OBESE	23	0.67	21	0.61	44
WFL/H - MODERATELY WASTED	25	0.73	34	0.99	59
WFL/H - SEVERELY WASTED	15	0.44	14	0.41	1709
TOTAL					3418
	12-23 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
WFL/H - NORMAL	1865	23.45	1782	22.41	3647
<i>Continuation of Table 3. Weight-for-Length/Height (WFL/H): Acute Malnutrition and Emerging Obesity</i>					
WFL/H - OVER WEIGHT	64	0.80	70	0.88	134
WFL/H - OBESE	44	0.55	33	0.41	77
WFL/H - MODERATELY WASTED	65	0.82	53	0.67	118
WFL/H - SEVERELY WASTED	24	0.30	26	0.33	3976
TOTAL					7952
24-35 MONTHS					

INDICATOR	0-5 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
	BOYS	%	GIRLS	%	TOTAL
WFL/H - NORMAL	1665	22.50	1709	23.09	3374
WFL/H - OVER WEIGHT	62	0.84	92	1.24	154
WFL/H - OBESE	35	0.47	46	0.62	81
WFL/H - MODERATELY WASTED	46	0.62	45	0.61	91
WFL/H - SEVERELY WASTED	21	0.28	19	0.26	3700
TOTAL					7400
INDICATOR	36-47 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
	BOYS	%	GIRLS	%	TOTAL
WFL/H - NORMAL	1969	23.32	1948	23.08	3917
WFL/H - OVER WEIGHT	64	0.76	57	0.68	121
WFL/H - OBESE	57	0.68	37	0.44	94
WFL/H - MODERATELY WASTED	47	0.56	42	0.50	89
WFL/H - SEVERELY WASTED	18	0.21	15	0.18	4221
TOTAL					8442
INDICATOR	48-59 MONTHS				
	BOYS	%	GIRLS	%	TOTAL
	BOYS	%	GIRLS	%	TOTAL
WFL/H - NORMAL	2170	23.93	2017	22.24	4187
WFL/H - OVER WEIGHT	92	1.01	69	0.76	161
WFL/H - OBESE	60	0.66	41	0.45	101
WFL/H - MODERATELY WASTED	53	0.58	32	0.35	85
WFL/H - SEVERELY WASTED	10	0.11	15	0.17	4534
TOTAL					9068

The weight-for-length/height (WFL/H) anthropometric indicator offers a valuable lens through which to assess acute nutritional status among children under five, particularly by identifying current wasting (thinness) or overweight conditions that may have emerged recently. In Cabanatuan City, the findings reveal that a significant proportion of children fell within the normal WFL/H range, with prevalence rates consistently averaging between 22% and 24% across age categories. This distribution suggests that most children experience adequate short-term energy balance and are not presently facing acute nutritional stress.

Crucially, the combined rates of moderate and severe wasting in the population ranging from 0.11% to 2.24% remain well below the World Health Organization's (2023) public health emergency threshold of 5%, indicating that acute malnutrition is not a widespread concern in this urban setting. These figures may reflect the city's relative access to health services, food markets, and routine growth monitoring, all of which play preventive roles in the early detection and management of wasting. Moreover, the low prevalence may be associated with active implementation of supplementary feeding programs, health worker follow-up, and the presence of community-based nutrition surveillance systems.

Despite this encouraging trend, the presence of moderate wasting in a subset of children suggests a need for targeted screening among vulnerable households, particularly those facing transient food insecurity or illness-related growth disruptions. According to Rivas and Mercado (2024), even sub-threshold levels of wasting may carry immunological and developmental consequences if unrecognized or unmanaged, especially in densely populated urban barangays where sanitation challenges persist.

Simultaneously, the emergence of overnutrition as observed in the WFL/H findings should not be underestimated. The prevalence of overweight and obesity ranges from 0.41% to 1.82%, indicative of an early but notable trend towards excess weight gain in early childhood. Though these figures remain within manageable levels, they are consistent with patterns described in the 2024 Global Child Nutrition Trends Report, which confirms the rise of "early onset obesity" in lower- and middle-income urban regions due to shifts in diet, lifestyle, and feeding practices.

This coexistence of undernutrition and overnutrition, referred to as the "double burden of malnutrition", has been well-documented in countries like the Philippines. It presents a unique public health challenge, as communities must simultaneously address food insecurity and the increasing availability of ultra processed,

energy-dense but nutrient-poor foods (UNICEF, WHO, & World Bank, 2024). In Cabanatuan City, where both malnutrition types exist in small yet significant proportions, this duality underscores the need for integrated nutrition strategies.

From a policy and nursing practice standpoint, this necessitates the harmonization of nutrition-specific interventions, such as therapeutic feeding for wasted children, with nutrition-sensitive initiatives like health education, food labeling regulations, and maternal behavior change campaigns promoting balanced diets and physical activity. Health professionals, particularly nurses working in the community and primary care settings, play a pivotal role in executing these interventions, ensuring families receive tailored counseling, and guiding behavior modification within culturally relevant frameworks.

Furthermore, a growing body of literature suggests that the first two years of life represent a critical window for preventing the establishment of overweight and obesity. As stated by Lee and Mabunga (2025), early-life weight gain patterns particularly those influenced by feeding routines, sugar-sweetened beverages, and screen time exposure are significantly predictive of obesity later in life. Thus, early preventive education and supportive parenting programs must be included in urban public health agendas.

Table 4. Nutritional Status of Children in Cabanatuan City (2024)

Indicator	Range of Prevalence (%)	WHO Benchmark / Standard	Interpretation Based on 2024–2025 Literature
Weight-for-Age: Normal	44.40 – 50.37%	≥ 60% desirable (WHO, 2023)	Slightly below optimal; improvements needed in food security and maternal education.
Weight-for-Age: Underweight	0.61 – 1.68%	< 5% (mild); >10% (serious)	Manageable undernutrition; related to feeding practices and household food access.
Weight-for-Age: Severely Underweight	0.16 – 0.80%	< 1% (acceptable); >3% (serious)	Very low; suggests access to nutrition services, but some chronic deprivation remains.
Weight-for-Age: Overweight	0.37 – 3.83%	< 2.5% (ideal in early childhood)	Early signs of overnutrition; monitoring of diet and food marketing essential.
Height-for-Age: Normal	39.69 – 49.41%	≥ 60% (ideal)	Below desirable levels; reflects chronic nutritional gaps despite low stunting.
Height-for-Age: Stunted	1.20 – 2.47%	< 5% (acceptable); >20% (serious)	Significantly below national average; effective maternal-child health programs.
Height-for-Age: Severely Stunted	0.52 – 2.71%	< 1% (ideal); >10% (severe concern)	Within manageable levels; emphasizes importance of first 1,000 days of life.
Weight-for-Length/Height: Normal	22.00 – 24.00%	WHO does not specify a fixed percentage; normality assessed per child	Most children are not acutely malnourished; indicates acceptable short-term status.
WFL/H: Moderate Wasting	0.35 – 1.57%	< 5% (acceptable); >10% (emergency)	Well below global concern; early interventions appear effective.
WFL/H: Severe Wasting	0.11 – 2.24%	< 5% (acceptable); >10% (emergency)	Below emergency threshold; but some acute stress may still be present.
WFL/H: Overweight	0.68 – 1.69%	< 2.5% (acceptable)	Emerging trend; preventive lifestyle and diet education needed.
WFL/H: Obese	0.41 – 1.82%	< 1% (ideal)	Some exceed ideal; early prevention through food and activity awareness necessary.

Table 4. Nutritional Status of Children in Cabanatuan City 2024 shows a consolidated interpretation of anthropometric indicators drawn from the 2024 Cabanatuan City nutrition survey, supported by WHO standards

and current literature. Overall, the data present a dual narrative: one of progress in reducing undernutrition, and another signaling the emergence of overnutrition, characteristic of transitional urban environments.

Weight-for-Age (WFA)

The percentage of children with normal weight-for-age ranged from 44.40% to 50.37%. Although this suggests that nearly half of the under-five population falls within standard growth parameters, the values remain below the ideal threshold of $\geq 60\%$ set by the WHO (2023). This deviation signals the need for enhanced nutrition-sensitive interventions, particularly in urban pockets where food insecurity, parental unemployment, or insufficient maternal education may still be prevalent (Garcia & Solis, 2024).

Encouragingly, the rates of underweight and severely underweight children remain well below the WHO's concern threshold of 10% and 3%, respectively. The underweight range (0.61%–1.68%) and severe underweight range (0.16%–0.80%) indicate that acute and chronic undernutrition are largely controlled in the city, likely due to functional community health services and regular nutritional monitoring (National Nutrition Council, 2025). However, the presence of these conditions, even at low levels, suggests that targeted support is still needed for high-risk households.

On the other hand, the proportion of overweight children (0.37%–3.83%) highlights the incipient nature of overnutrition. Though this is still below the 2.5%–5% range generally considered concerning in children under five (UNICEF, 2024), early evidence of excess weight suggests changing dietary habits influenced by urbanization, processed food availability, and reduced physical activity. These findings echo global warnings about the nutrition transition, whereby malnutrition coexists with increasing overweight and obesity rates in developing nations (Global Nutrition Report, 2024).

Height-for-Age (HFA)

Stunting and severe stunting are among the most critical indicators of chronic malnutrition. In Cabanatuan City, normal height-for-age prevalence ranged from 39.69% to 49.41%, which, although lower than the optimal 60%, is complemented by low stunting rates—1.20% to 2.47% for stunted and 0.52% to 2.71% for severely stunted children.

These results are significantly below the national average of 26.7% as reported by the DOST-FNRI (2021) and represent a notable public health achievement. This success may be attributed to the effective implementation of the First 1,000 Days program, improved prenatal care, and health education provided through barangay-level interventions (National Nutrition Council, 2025). Nevertheless, the persistence of stunting, even at low levels, serves as a reminder of the long-term effects of early nutritional deprivation, which can impair cognitive development and reduce economic productivity in adulthood (UNICEF, 2024).

Weight-for-Length/Height (WFL/H)

WFL/H data are critical for detecting acute malnutrition (wasting) and excess weight (overweight/obesity). The majority of children fell within the normal WFL/H range (22%–24%), reflecting acceptable short-term energy and nutrient balance. The moderate wasting range (0.35%–1.57%) and severe wasting (0.11%–2.24%) are both comfortably below the WHO's emergency threshold of 5%, underscoring that acute malnutrition is not a widespread issue in this locality.

Still, wasting at any level is associated with heightened risk of infection and mortality in children, and even low prevalence warrants continued surveillance and case management (Rivas & Mercado, 2024).

The overweight (0.68%–1.69%) and obese (0.41%–1.82%) rates under WFL/H further strengthen evidence of early onset of overnutrition in children. These values approach or exceed WHO's ideal benchmark of $<1\%$ for obesity in under-fives, reinforcing the need for preventive education on feeding practices, especially in households exposed to high-sugar beverages, ultra-processed snacks, and sedentary digital habits (Lee & Mabunga, 2025).

Overall Implication of Trends

The collective interpretation of these percentages highlights a nutrition paradox: progress in addressing undernutrition coexisting with rising trends in overnutrition. This duality supports the current literature on the "double burden of malnutrition" in middle-income settings such as the Philippines (UNICEF, WHO & World Bank, 2024). It also reinforces the call for integrated nutrition policies, where both food access and food quality, alongside caregiver education, are prioritized.

From a nursing and public health perspective, this demands a comprehensive, intersectoral response anchored in community-based growth monitoring, behavioral change communication, early health screening, and maternal support systems. The nurse's role, especially in barangay and primary care settings, remains central to both the delivery and leadership of these programs.

Implications for Nursing Practice and Public Health Policy

The findings of this study carry significant implications for both nursing practice and public health policy, particularly in addressing the dual burden of malnutrition undernutrition and emerging overnutrition among children aged 0–59 months in urban areas such as Cabanatuan City. From the lens of community and public health nursing, these results underscore the critical need for sustained, evidence-based, and context-specific interventions aimed at improving child nutritional outcomes.

4. CONCLUSION

The 2024 nutritional profile of children in Cabanatuan City shows generally favorable child health, with low rates of stunting and wasting key indicators of undernutrition. These outcomes reflect progress in implementing maternal and child nutrition programs, improving healthcare access, and strengthening community-based services. However, the persistence of undernutrition and the early rise of overweight and obesity highlight the emerging double burden of malnutrition. While most children are within normal growth ranges, those at risk may face long-term health consequences if timely interventions are not sustained.

Nursing scholars and public health professionals are called to promote research-based, community-centered nutrition strategies that are:

1. Sustainable – supported by consistent funding, policy alignment, and capacity building at the barangay level;
2. Culturally appropriate – aligned with local values, beliefs, and food environments;
3. Inclusive – addressing the needs of vulnerable groups such as the urban poor and children with special needs.

It is also essential to integrate nutrition into local governance systems, school curricula, and maternal-child health services, while empowering nurses to lead in health promotion, surveillance, and advocacy. Effective and equitable nutrition outcomes depend on collaboration among healthcare providers, communities, and multiple sectors.

Despite encouraging data, continued vigilance, policy responsiveness, and professional accountability are crucial to improving child health in Cabanatuan City and beyond. These actions align with the Global Nutrition Targets 2025, the Sustainable Development Goals, and the nursing profession's ethical duty to protect vulnerable populations.

A systems-oriented approach is key to meeting the nutritional needs of urban Filipino children, emphasizing:

1. Capacity building – continuous training for barangay health workers and nutrition scholars on growth assessment, risk identification, and community mobilization (National Nutrition Council, 2025);
2. Comprehensive growth monitoring and promotion (GMP) – regular tracking of child growth and caregiver engagement to reinforce proper feeding practices (UNICEF, 2024);
3. School and community nutrition education – strengthening nutrition literacy through early education and parent-focused seminars (Garcia & Solis, 2024);

Integration with maternal and child health programs embedding nutrition services within antenatal, postnatal, and immunization care to enhance growth and cognitive outcomes (WHO, 2024).

These initiatives support the reduction of stunting by 40% and wasting below 5% among children under five (WHO, 2024), contributing to SDG 2: Zero Hunger. Achieving these goals requires strong multi-sectoral collaboration across health, education, agriculture, social welfare, and local government sectors.

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