Socio-demographic Profile and Nutritional Status of Children Five-Year Old and Below

ABSTRACT

Aims: To investigate the socio-demographic profiles, nutritional status, and the significant relationship between the two variables
Study design: A descriptive-correlation
Place and Duration of Study: The study was conducted at Poblacion 1, Malita, Davao Occidental, The Philippines. The study was conducted during the first quarter of 2022.
Methodology: The study used the stratified random sampling in choosing the 187 parents/guardians respondents from 24 sitios/streets. To obtain the pertinent data, the researchers adapted the Philippine National Nutrition Council (2022) questionnaire and used the anthropmetric measures using the Electronic Operation Timbang Tools. Moreover, ethical considerations were observed in the conduct of the study.
Results: Most of the parent-respondents had 49-59 months old children; males; most had 3-4 children; high school level; and earning below the poverty line. In weight for age and height for age rations, most children were average. However, BMI revealed that most children were underweight. It also showed that BMI of children and parents' educational attainment and monthly income were not significantly associated. The results proved that children's nutrition depends not on parents' educational attainment and economic status but on other several factors.
Conclusion: Majority of people assumed that economic status and educational attainment of family leads to malnutrition of children. The results of the study proves the assumption to be non-sequitor. The results showed that despite the low income of the the parents/guardians of the children below 5 years; having 3-4 children; having only high school education, yet most children have normal weight and average height. On the other hand, the BMI of children shows that majority are underweight, which implies that they have poor nutrition and are vulnerable to health risk. It shows that parents/guardian do not prepare nutritious food for their children. It can be noted that the location of the study is urban where nutritious vegetables, crops, and fruits can be planted. Hence, the health of the children depends greatly on the parents endeavor and understanding of good nutrition.

Keywords: Socio-demographic profile, nutritional status, children five-year old and below, body mass index, weight for age, height for age, SPAMAST

1. INTRODUCTION

The widespread malnutrition problem at various life stages affects the global population. This public health crisis affects everyone, but the poverty-stricken are particularly vulnerable. Malnutrition occurs due to a body imbalance in which the nutrients required and the amount used by the body do not balance. Several types of malnutrition fall into two broad categories: undernutrition and overnutrition (Imran & Imran, 2020).

Malnutrition in children occurs in developed and developing countries (Shariff et al., 2015); however, the types, prevalence, and trends vary. Malnutrition in children and mothers has been linked to 3.5 million deaths annually. Furthermore, children under five have a disease burden of 35% (Dukhi, 2020).

In a report published by United Nations International Children's Emergency Fund (2019), at least one in three children worldwide under the age of five is not getting the nutrition they need to grow well, particularly in the crucial preschool age. An increasing number of children survive, but far too few thrive because of malnutrition. The ratio of 1:3 is deemed alarming, considering the scale of this report.

The Philippines is experiencing a double burden of malnutrition, wherein underweight and stunting are increasing with obesity. Agdeppa et al. (2019) state that adequate food and nutrient intake in childhood are vital for optimal growth, yet food insecurity affects approximately 70% of households. Based on the World Health Organization's classification of undernutrition rates, the prevalence of stunting in children in the Philippines is of "very high" public health significance. The Philippines is fifth among East Asia and Pacific countries, with a 29% stunting rate.

Given the significance of socio-demographic profile to the nutrition of children, this study examined the relationship between the nutritional status and socio-demographic profile of five years old children and below in Barangay Poblacion 1, Malita, Davao Occidental to provide more data relevant to the ideal intervention to end hunger and improve nutrition, as well as promote well-being and healthy lives.

1.1 Statement of the Problem

This study aimed to explore the nutritional and socio-demographic status of children five years old and below in Brgy. Poblacion 1, Malita, Davao Occidental. Specifically, this study sought to answer the following:

1. What is the socio-demographic profile of the children ages 0-5 years old in terms of:
    1.1 age;
    1.2 gender;
    1.3 number of siblings;
    1.4 educational attainment of parents/guardians; and
    1.5 parents'/guardians' monthly income.
2. What is the nutritional status of children five years and below in Brgy. Poblacion 1, Malita, Davao Occidental using anthropometric measurement in terms of:
    2.1 Weight for Age (WFA);
    2.2 Height for Age (HFA); and
    2.3 Body Mass Index (BMI).
3. Is there a significant relationship between the nutritional status of children ages 0-5 years old and the socio-demographic profile regarding their parent's educational attainment and monthly income?

1.2 Significance of the Study

This study focused on gaining data from parents/guardians of children 0-5 years old in Barangay Poblacion 1, Malita, Davao Occidental. However, not only the individuals mentioned above had an advantage and gained from this study. It also benefited the following:

Department of Health (DOH). The findings of this study provide valuable information to the department, particularly about the nutritional status of children aged 0 to 5 years old and the current situation of households in Brgy. Malita, Davao Occidental, Poblacion 1. Aside from that, effective programs based on the study's findings could be developed to reduce the incidence of malnutrition in Malita.

Local Government Units (LGU). Several government agencies are closely related to maintaining and improving social status. This study could help in further studies to alleviate all forms of malnutrition in the country.

Community. People play a vital role in improving the nutritional status of every child in the community. A piece of simple but valuable information from this study can impact the war against malnutrition. This study promotes awareness and objective actions to minimize the country's negative disposition brought about by malnutrition.

Family. The findings of this study educate the parents and the whole family of these children on the importance of proper nutrition to avoid illnesses at the early stages of life and find simple means to improve their lifestyle.

Students. Students in the public administration sector, social welfare development, economic development, health, and other sectors that tackle all aspects of well-being must grasp the concept of the importance of nutrition starting at an early age to properly assess the interventions needed to improve the way of life.

Future Researchers. This study will serve as a basis for future researchers that decide to take on acquiring more results from a similar concept. Also, future research related to this study can magnify the impact of malnutrition on people to inspire everyone to take the lead in making some changes to the nutritional intake of our children.

1.3 Scope and Limitation of the Study

This study was limited to determining the nutritional status and socio-demographic profile of children ages 0-5 of Poblacion 1, Malita, Davao Occidental. The selection of the parents and children was based on the secondary data of the Barangay Nutrition Scholar (BNS). However, because the main subjects of the research were the children who were yet to develop their cognitive skills, the parents or guardians, together with the children, posed as the primary respondents to supply the needed information. The presence of children ages 0-5 was strictly requested to complete the study. This study was conducted during the first quarter of 2022.

Theoretical Framework of the Study

This study was founded on the Theory of Nutrition and Physiology, which states that the nutritional content of the blood from food that flows through the body at conception and birth is the determinant of overall health (Tanaka, 2017). Also, this study was backed by the proposition of Igbokwe et al. (2017) that health is connected to the amount and quality of food intake and is associated with demographic factors such as age and sex, parental education, and socioeconomic class.

This study was also supported by Chakraborty and Ghosh (2020) when they stressed that under-nutrition has been substantially higher among economically marginalized and socially excluded areas. Malnutrition among poor urban children is mainly due to the synergistic effects of improper food intake due to poverty, repeated diarrhea and other infectious diseases due to poor sanitation and hygiene, and improper care given during illness. Galgamuwa et al. (2017) averred that socioeconomic status and the family's living conditions determine children's dietary intake and food habits, which has a substantial and significant effect on their nutritional status. Inadequate and indiscriminate food intake is an important reason behind increasing malnutrition trends among children.

1.4 Conceptual Framework of the Study

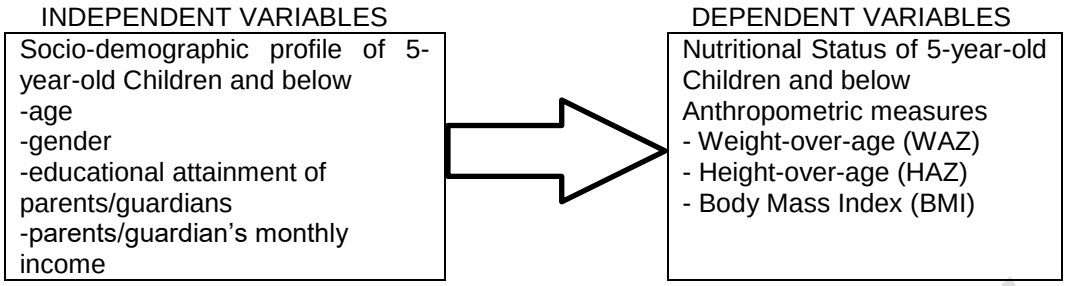

Fig. 1. Conceptual Framework of the study showing the relationship between the variables

The conceptual framework presented the dependent and independent variables of the study. The nutritional status of children ages 0-5 years old was represented by their anthropometric measurements (WAZ, HAZ, and BMI) and was classified as a dependent variable since those were assumed to be affected by the independent variable, which was the socio-demographic profile.

1.5 Hypothesis

Ho_1: There was no significant relationship between the nutritional and socio-demographic status of children ages 0-5 in Brgy. Poblacion 1, Malita, Davao Occidental, regarding parents' educational attainment and monthly income

2. MATERIAL AND METHODS

2.1 Research Design

This study used the descriptive-correlation method. According to Salaria (2012), descriptive research is devoted to gathering information about prevailing conditions or situations for description and interpretation. This research method is not simply amassing and tabulating facts but includes proper analysis, interpretation, comparisons, and identification of trends and relationships. On the other hand, correlational research is a type of non-experimental research in which the researcher measures two variables and assesses the statistical relationship (i.e., the correlation) between them with little or no effort to control extraneous variables (Jhangiani, 2013). Correlation is a statistical term describing the degree to which two variables move in coordination. If the two variables move in the same direction, then those variables are said to have a positive correlation. They negatively correlate if they move in opposite directions (Hayes, 2022).

The researchers utilized the description-correlation method to describe the variables and the relationships that occur naturally between and among them. Another reason is that the statistical relationship of interest is thought to be causal, but the researchers need help manipulating the independent variables because it is impossible, impractical, or unethical. For example, the socio-demographic profile of the respondents varies. Hence the effect on the nutritional status may or may not vary. However, because the researchers could not manipulate the socio-demographic profile of the respondents, they had to settle for measuring the relationship between the socio-demographic profile and the nutritional status of the respondents.

2.2 Sampling Design and Technique

This study utilized stratified sampling by narrowing down the population based on specific and relevant characteristics. Since the primary category only includes parents/guardians with children ages 0-5 years old, the members of the population that do not fall into the category are automatically excluded. Stratified sampling allows you to draw more precise conclusions by ensuring that every subgroup is adequately represented in the sample (McCombes, 2019). In the latest data of the Barangay Health Office, it is recorded that approximately 600 children ages 0-5 years old reside in Poblacion 1, Malita, Davao Occidental. Since the population size was known, the number of respondents, which were parents/guardians together with their children ages 0-5 years old, were determined considering the margin of error and the confidence level that this error may contain accurate parameters.

2.3 Respondents of the Study

The respondents of this study were the 187 parents or guardians and their children ages 0-5 years old who reside in Poblacion 1, Malita, Davao Occidental. The number of respondents was determined using the formula for computing the sample size with known population size:

$$\text{Sample size} = \frac{\frac{z^2\, x\, p(1-p)}{e^2}}{1 + (\frac{z^2\, x\, p(1-p)}{e^2 N})}$$

Where:
N = population size
z = z-score of confidence level
e = margin of error
p = standard deviation

The researchers assumed a safe 5% margin of error, a 90% confidence level with a z-score of 1.645, and a standard deviation of 0.5. The assumption was based on the typical values researchers use worldwide. By substituting these values, including the population size of 600, the sample size of the study was calculated as follows:

$$\text{Sample size} = \frac{\frac{z^2\, x\, p(1-p)}{e^2}}{1 + (\frac{z^2\, x\, p(1-p)}{e^2 N})}$$

$$\text{Sample size} = \frac{\frac{1.645^2\, x\, 0.5(1-0.5)}{0.05^2}}{1 + (\frac{1.645^2\, x\, 0.5(1-0.5)}{0.05^2 600})}$$

$$\text{Sample size} = \frac{270.6025}{1.451}$$

$$\text{Sample size} = 186.493$$

$$\text{Sample size} \approx 187$$

The 187 parents/guardians with children ages 0-5 years old represented the entire population of Poblacion 1, Malita, Davao Occidental. Since Poblacion 1 has 24 sitios/streets, at least 7-8 respondents must be obtained per sitio/street to meet the total number of the sample size.

2.4 Research Instrument

The main instrument used in data gathering was an adapted National Nutrition Council (2022) questionnaire. The questionnaire consists of the classification of the respondents according to their age, gender, education, marital status, number of children, and monthly income. The second part of the survey is where the anthropometric measures of the respondent's child are recorded using the Electronic Operation Timbang Tools.

In interpreting the responses, the researchers used the following numerical codes:

Table 1. The Severity of Undernutrition by Prevalence Ranges (%)

INDEX	LOW	MEDIUM	HIGH	VERY HIGH
Weight for age (WFA)	<10	10 – 19	20 – 29	≥30
Height for age (HFA)	<20	20 – 29	30 – 39	≥40

Table 2. The Body Mass Index

BODY MASS INDEX (BMI)	CLASSIFICATION	DESCRIPTION
<18.5	Underweight	a person whose body weight is considered too low to be healthy
18.5 – 24.9	Normal	a person's BMI falls within a weight range that is not associated with an increased risk for weight-related diseases and health issues
25 – 29.9	Overweight	a person's body weight that is greater than what is considered normal or healthy for a particular height
≥30	Obese	a person having excessive body fat

2.5 Data Gathering Procedure

The following steps were observed during the gathering of data. First, the researchers secured an endorsement letter from the Department Chairman of the Bachelor in Public Administration. Second, another letter was sent to the Barangay Captain of Brgy. Poblacion, Malita, Davao Occidental to request approval to launch the study to the target respondents. Third, with the guidance of the Barangay Nutrition Scholar (BNS), the survey questionnaire was distributed to the selected respondents. Lastly, the questionnaires were retrieved, and the collected data were sorted for statistical treatment and analysis.

2.6 Ethical Considerations

Informed Consent. Prior to the actual conduct of the study, the researchers ensure that signed informed consent is obtained from all participants (Gablinske, 2014). In this study, the researchers make it clear to the participants that their participation is voluntary. Aside from that, Cebuano translation is provided in the informed consent for the participants' clarity and ease of understanding. During the study, the participants were required to wear a face mask and a face shield, their temperatures were taken, and their hands were disinfected with alcohol. However, they were free to withdraw their participation without incurring liability.

Potential Risks and Discomforts That May Arise Regarding Some Questions in the Survey Questionnaire. The researchers explained the risks of participating in the study, mainly when answering personal questions (Siegle, 2019). In this study, the researchers, on the other hand, assured the participants that the questions being asked are only those required to complete the study and are carefully crafted to avoid invasion of personal space. The researchers guaranteed that any information they shared was kept strictly confidential.

Confidentiality. The researchers notified the participants that the confidentiality of the information they provided for the study was prioritized. The respondent's participation was kept private until it was no longer applied. The researchers guarantee that after the study is completed, all information containing personal data, including electronic files, will be disposed of and eliminated (Kaiser, 2010). In this study, the researchers kept the data for as long as necessary and only kept and used by the researchers. The privacy of the participants was treated with respect.

Voluntary Participation. The respondents shall not be compelled to participate in the study (Barrow et al., 2021). In this study, the researchers discussed with prospective participants the procedures and risks involved in the research and that they must consent to participate but can withdraw at any time without sanctions.

Permission from the Organization/Location. Prior to the conduct of the study, permission from the participating organization is deemed necessary (Zukauskas et al., 2018). In this study, the researchers sought permission from various authorities to ensure the legality of the procedures and the authenticity of the information collection.

Authorship. Acknowledging the study's authors was considered in the research (Horkoff, 2015). In this study, the researchers acknowledged that all authors mentioned were cited correctly and listed in the reference section.

3. RESULTS AND DISCUSSIONS

3.1 Socio-Demographic Profile of the Respondents

Table 3 presents the socio-demographic profile of the parent-respondents. Most parent-respondents had 49-59 (23.53%) months old children, while the lowest was had 0-12 (16.04%) months. It implies that most of the respondents who actively participated in the actual conduct of the study were those parents with toddlers. Meanwhile, gender disclosed the highest percentage of 57.22 for males and the lowest percentage of 42.78 for females. It implies that based on the number of respondents, husbands outnumbered wives. Further, for the number of siblings shown, the most significant number of the respondents, 52.41%, has 3-4 siblings, while the lowest percentage (3.21) of the respondents has 9-12 siblings. It implies that the 3-4 children were the most common among the respondents.

In addition, the educational attainment of parents/guardians recorded the highest percentage of 29.95 was high school level. Conversely, 11.23%, the lowest number of respondents, were college-level/graduate. It implies that most respondents only finish high school and few in college. Lastly, the parents/guardians' income announced the highest percentage of 41.71% of the respondent had a monthly income of 2001-2500; on the contrary, 5.35% of the respondents had an income of 1,000 below, which was the lowest.

Table 3. Socio-Demographic Profile of the Respondents

PARTICULARS	FREQUENCY	PERCENTAGE
Child's Age (in months)		
0-12	30	16.04
13-24	38	20.32
25-36	37	19.79
37-48	38	20.32
49-59	44	23.53
Child's Gender		
Male	107	57.22
Female	80	42.78
Number of Siblings		
1 – 2	35	18.72
3 – 4	98	52.41
5 – 6	37	19.79
6 – 8	11	5.88
9 – 12	6	3.21
Educational attainment of		

Parents/Guardians		
Elementary Level	24	12.83
Elementary Graduates	36	19.25
High School Level	56	29.95
High School Graduate	50	26.74
College Level/College Graduate	21	11.23
Parents/Guardians' Monthly Income (Php)		
1,000.00 below	10	5.35
1,001.00 – 1,500.00	18	9.63
1,501.00 – 2,000.00	46	24.60
2,001.00 – 2,500.00	78	41.71
2,501.00 - above	35	18.72

It implies that many of the respondents had earned an income of only 2,001-2,500, which means that parents needed help to provide the basic nutritional needs of their children. Moreover, the socio-demographic profile of the respondents unveiled that the majority were age 49-59, male, had 3-4 siblings, high school level, and had a monthly income between 2001-2500.

3.2 Nutritional Status of Children Ages 0-5 Years Old

Weight For Age

The results shown in Table 4 on the nutritional status of children ages 0-5 years old revealed that the weight for age exhibited the highest percentage of 56.15 (very high), which has the most significant number of the children with an average weight for age. It implies that the child's body weight is precisely their age. It helps the children live far from any possible existence of diseases or sickness. Contrastingly, the lowest percentage of 8.02 were the respondents under severely underweight and overweight. It indicates that the children have a BMI less than 16.5kg/m^2 for severely underweight and BMI greater than or equal to 25 to 29.9 kg/m^2 for overweight. In addition, this signifies that the children's weight is not fit for their age, and they are vulnerable to health risks associated with being underweight or having poor nutrition.

Table 4. Nutritional status of children ages 0-5 years old

INDEX	F	%	INTERPRETATION
Weight for Age (WFA)			
Normal	105	56.15	Very High
Underweight	52	27.81	High
Severely underweight	15	8.02	Low
Overweight	15	8.02	Low
Height for Age (HFA)			
Normal	79	42.25	Very High
Stunted	67	35.83	High
Severely Stunted	41	21.93	Medium
Body Mass Index (BMI)			
Healthy Weight	67	35.83	Weight is too low to be healthy
Underweight	92	49.20	Weight range is not associated with an increased risk of diseases
Overweight	9	4.81	Weight is more significant than what is considered normal for a particular height
Obese	19	10.16	Excessive Body Fat

A healthy weight, or average weight, means that your Body Mass Index falls within a weight range that is not associated with an increased risk for weight-related diseases and health issues. An improved understanding of how ordinary and moderately overweight people manage their body weight, and shape could be used to inform initiatives to prevent and treat obesity. People who are obese are at a higher risk than people at a healthy weight for various diseases and health conditions (Center for Disease Control and Prevention, 2021).

Being severely underweight overweight has become a significant challenge for public health as comorbidities emerge in childhood (Ozden et al., 2011), and many overweight children will become obese adults (Frank et al., 2010). Prevention is considered the optimal strategy, as treating severely underweight and overweight once it develops is notoriously tricky (Zwiauer, 2000). Identifying important ages for the development of being overweight is an essential aspect of preventive efforts (Nader et al., 2006). Various age stages in infancy (Baird et al., 2005) and early childhood (Botton et al., 2008) have been associated with the later development of being overweight and obese. However, there is currently no consensus on which period is most critical.

Height for Age

Height for age is an index used to assess how a child's height compares to the expected height of a healthy child of the same age and sex based on the WHO (2006) Child Growth Standards. It identifies stunting and reflects a child's long-term or past nutrition history rather than his or her current nutritional status. The height for age of the children ages 0-5 years old in Table 4 conceived the highest percentage of 42.25 (very high) were the respondents with average height. It indicates that the height of the children is congruent with their age. Oppositely, 21.93% of the respondents were severely stunted. It means that children whose height-for-age z-score is below minus 3 (- 3.0) standard deviations (SD) below the mean on the World Health Organization Child Growth Standards (hc70 < - 300).

Normal growth is the progression of changes in height, weight, and head circumference compatible with established standards for a given population. The progression of growth is interpreted within the context of the genetic potential of a particular child (Lifshitz, 2006). Normal growth reflects overall health and nutritional status. Understanding the typical growth patterns enables the early detection of pathologic deviations (e.g., poor weight gains due to a metabolic disorder, short stature due to inflammatory bowel disease). It can prevent the unnecessary evaluation of children with acceptable normal variations in growth. Somatic growth and biological maturation are influenced by several factors that act independently and in concert to modify a child's genetic growth potential. Maternal nutrition and intrauterine environment are reflected primarily in the growth parameters at birth and during the first month of life, whereas genetic factors have a later influence (Touwslager, 2011). The correlation coefficient between length and adult height is only 0.25 at birth but increases to 0.8 at two years of age (Tanner, 2009).

Stunting measures chronic nutritional deficiency based on a child's height and age. Wasting, based on a child's weight and height, is a measure of acute nutritional deficiency. Based on weight and age, underweight is a composite measure of both acute and chronic statuses. Being overweight, based on weight and height, is an optimally healthy measure of excess weight. The World Health Organization (WHO) released an international growth standard statistical distribution in 2006, describing the growth of children ages 0 to 59 months living in environments believed to support optimal growth of children in six countries worldwide, including the US. The distribution shows how infants and young children grow under these conditions rather than in environments that may not support optimal growth. The WHO Child Growth Standards (WHO, 2006) have replaced the NCHS/CDC/WHO international reference

standard as the standard for assessing the nutritional status of children. Due to natural variations in a well-nourished population, 2.2 percent of children will be between -2.0 and -2.99 SD below the mean, and 0.1 percent will be-3.0 or more SD below the mean. The extent of malnutrition in a population should be taken by the extent the proportions moderate and severe exceed these percentages that occur in a well-fed population of children (World Health Organization, 2017).

Body Mass Index

The body mass index of the children ages 0-5 is conferred the highest percentage of 49.20%, which indicates that the children were underweight. There are certain health risks associated with being underweight or having poor nutrition. These risks include malnutrition, vitamin deficiencies, or anemia. Osteoporosis from too little vitamin D and calcium. On the other hand, the lowest percentage of 4.81 were those overweight children. Being overweight or obese can have a severe impact on health. Carrying extra fat leads to serious health consequences such as cardiovascular disease (mainly heart disease and stroke), type 2 diabetes, musculoskeletal disorders like osteoarthritis, and some cancers (endometrial, breast, and colon).

An individual would be considered to be underweight if his/her BMI was in the range of 15 to 19.9, average weight if the BMI was 20 to 24.9, overweight if the BMI was 25 to 29.9, and obese if it was 30 to 35 or greater (Nuttall, 2015). Being underweight, overweight, or obese during childhood and adolescence is associated with adverse health consequences throughout the life course. Being underweight among children and adolescents is associated with a higher risk of infectious diseases. For girls of childbearing age, it is associated with adverse pregnancy outcomes, including maternal mortality, delivery complications, preterm birth, and intrauterine growth retardation (Han et al., 2011). Preventing and reversing excess weight in children and adolescents is also essential for many reasons (World Health Organization, 2016); first, weight loss and maintenance after weight loss are hard to achieve (Maclean et al., 2015), therefore gaining excess weight in childhood and adolescence is likely to lead to lifelong overweight and obesity (Singh et al., 2008). Second, being overweight in childhood and adolescence is associated with greater risk and earlier onset of chronic disorders such as type 2 diabetes (Abdullah et al., 2011).

3.3 Association between BMI and Educational Attainment of Parents/Guardians

A Chi-Square Test of Independence was performed to assess the relationship between BMI and the Educational Attainment of Parents/Guardians. Table 5 revealed no significant association between the mentioned variables $\chi^2(12, 187) = 14.51, p = .269$ since the *p*-value is greater than the chosen significance value $(\alpha = .05)$. It means that we do not reject the null hypothesis; there is not enough evidence to suggest an association between BMI and the Educational Attainment of Parents/Guardians.

Table 5. Chi-Square test of association between BMI and Educational Attainment of Parents/Guardians

	VALUE	DF	p-VALUE
Pearson Chi-Square	14.507[a]	12	.269
Likelihood Ratio	17.240	12	.141
Linear-by-Linear Association	.310	1	.578
N of Valid Cases	187		

a. 8 cells (40.0%) have an expected count of less than 5. The minimum expected count is 1.01.

3.4 Association between BMI and Parents/Guardian's Monthly Income

A Chi-Square Test of Independence was performed to assess the association between BMI and Parents'/Guardians' monthly income. Table 6 revealed no significant association between the mentioned variables $\chi^2(12, 187) = 19.97, p = .068$ since the *p*-value is greater than the chosen significance value $(\alpha = .05)$. It means that we do not reject the null hypothesis; there is not enough evidence to suggest an association between BMI and Parents'/Guardians' monthly income.

Table 6. Chi-square test of association between BMI and Parents'/Guardians' monthly income

	VALUE	DF	p-VALUE
Pearson Chi-Square	19.970[a]	12	.068
Likelihood Ratio	22.251	12	.035
Linear-by-Linear Association	.879	1	.348
N of Valid Cases	187		

a. 11 cells (55.0%) have an expected count of less than 5. The minimum expected count is .48.

4. SUMMARY, CONCLUSION, AND RECOMMENDATION

Summary

The principal purpose of the study was to explore the nutritional and socio-demographic status of children five years old and below in Barangay Poblacion 1, Malita, Davao Occidental. Specifically, it determines the demographic profile of the respondents, the nutritional status of children five years old and below using anthropometric measurement, and the significant relationship between the nutritional status of children ages 0-5 years old and the socio-demographic profile in terms of their parent's educational attainment and monthly income.

To successfully attain the purpose of the study, a descriptive-correlation research design was used. In selecting the 187 respondents, a stratified sampling technique was used. The instruments used to collect the data were adapted from National Nutrition Council (2022). A frequency, percentage, mean, standard deviation, and Pearson product-moment of correlation coefficient were utilized
to process the data gathered.

The study's findings concerning the nutritional status of children ages 0-5 years old revealed that 56.15% of respondents, which was the highest percentage, possessed average weight for age. In contrast, respondents belonging to underweight and overweight had both 8.02%, which was the lowest. Meanwhile, height for age disclosed that the highest percentage of 42.25 of the respondent's population had average height compared to the lowest percentage of 21.93, in which this group of respondents was severely stunted. Moreover, the body mass index presented 49.20%, the highest group of underweight respondents. On the other hand, overweight has the lowest percentage of 4.81.

Furthermore, the association between BMI and parents/guardian are found not significant with a p-value of .269, which is greater than the 0.05 level of significance. As to the association between BMI and parent's/guardian's monthly income, no significant results were illustrated, given a p-value of .068, which is greater than the significance level of 0.05. These results concluded that the null hypothesis was not rejected due to insufficient evidence to suggest an association between BMI and educational attainment and monthly income.

Conclusion

Majority of people assumed that economic status and educational attainment of family leads to malnutrition of children. The results of the study proves the assumption to be non-sequitor. The results showed that despite the low income of the the parents/guardians of the children below 5 years; having 3-4 children; having only high school education, yet most children have normal weight and average height. On the other hand, the BMI of children shows that majority are underweight, which implies that they have poor nutrition and are vulnerable to health risk. It shows that parents/guardian do not prepare nutritious food for their children. It can be noted that the location of the study is urban where nutritious vegetables, crops, and fruits can be planted. Hence, the health of the children depends greatly on the parents endeavor and understanding of good nutrition.

Recommendations

The following recommendations were derived from the findings and conclusions of the study.

1. Out of the results of the study, it is recommended that the Department of Health, most notably in the municipality of Malita, may conduct free and regular checkups to cater to those unfortunate children whose parents cannot afford to pay and intensify their health programs to lessen the number of underweight children.
2. To foster the importance of health, the Local Government Unit may allot a sufficient amount for children's health. It is intended for parents who cannot afford to pay hospital bills for checkups and consultations.
3. The community, in this concern, may promote the practice of having quality and healthy living by eating healthy food, regularly exercising, avoid vices such as drinking alcohol and smoking. They may also become health advocates in their own families and the community.
4. Concerning the study results, the family as one group may practice healthy living and provide health concerns to each group member. The mother and father of the children may visit the public or private hospital for checkups and consultation to ensure the health condition of the children.
5. The student, in this matter, may value the significance of having good health and practicing healthy living with the guidance of the parents.
6. The study's results may guide the researchers in future research that bridges the gap of this study.

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