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Exploring The Relationship Between Nutritional Knowledge of Parents and the Malnutrition Status of Children in Southern Philippines

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ABSTRACT

The nutritional status of any population is a vital factor in its development. Poor nutritional status or malnutrition has been one of the world's most serious developmental problems and is especially prevalent among children. Parents play a crucial role in shaping the nutritional status of their children. However, there seems to be gaps in the knowledge of parents on how to prevent malnutrition, which has adverse effects on their children. The overall objective of this study was to determine whether there was a significant relationship between the nutritional knowledge of the respondents and the malnutrition status of the child participants residing in southern Philippines. The study employed a descriptive-correlational design utilizing both quantitative and qualitative approach in interpreting data. The first level of sampling method used was total enumeration. A total of 178 malnourished children were identified using the records of municipalities in southern Philippines. Convenience sampling was used to narrow down the sample size to 123. The data was analyzed through frequency, percentage distribution, and chi-square correlation using manual computation and SPSS. The findings revealed that the household characteristics of the respondents in terms of nutritional knowledge on the causes of malnutrition and knowledge on the prevention have p-value of 0.001 and 0.009 respectively which are lesser than the alpha 0.05 level of significance. This means that there is a significant relationship between the nutritional knowledge of the respondents and the malnutrition status of the child respondents. Correlation analysis revealed that knowledge on the causes and prevention of malnutrition specifically were found to have a significant relationship with the malnutrition status of the children. The study concluded that the heightened rate on the malnutrition status of the children 0 to 71 months of old in southern Philippines need to be given immediate health intervention, which can be done through awareness raising among parents and guardians.

Keywords: *Nutritional Status, Malnutrition, parents, children, Philippines*

INTRODUCTION

Many developing countries have experienced rapid economic, demographic, and nutritional transitions in recent decades, resulting in changes in dietary habits, nutritional status and lifestyles. Under nutrition is a global public health problem considered to be a principal cause of ill-health and premature morbidities.

Approximately 70% of the world's malnourished children live in Asia, resulting in the region having the highest concentration of childhood malnutrition. In the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM), an autonomous region in the Philippines, the number of undernourished children in the region increased from 1.8% to 3.8% from 2008 to 2011 (Guirindola, FNRI Senior Science Research Specialist2011). There seems to be a connection with the knowledge of parents and the malnutrition status of their children.

A population-based multi-center nested case-control study conducted by Shargi, Kamran and Faridan (2011), which included 76 underweight children and 76 controls in the city of Namin in Iran, showed that the female gender, poverty, short maternal height, and the use of unhygienic latrines in the home were significantly associated with childhood malnutrition. Turyashemererwa, Kikafunda and Agabe (2009) assessed by means of a cross-sectional descriptive study using both qualitative and quantitative methods of data collection the prevalence of malnutrition and the factors influencing the nutritional status of children under 5 years of age in a peri-urban environment in Kabarole District in

western Uganda. The findings from their study revealed that education level of the mother/caretaker, age of the child, receipt of information on child feeding, and time of introduction of other foods were significantly correlated with child stunting.

Previous studies on child malnutrition have had the strength of including representative samples and using structured questionnaires and a collection of anthropometric data through measurement of the length/height and weight of participant children by the researchers. For example, Nzala*et. al.* (2011) included 6,142 children less than 5 years in their study: Nnyepi*et. al.* (2010) included 742 households and 1,003 children; Hien and Hoa (2009) selected 383 child/mother pairs for their study; Mahgoub*et. al.* (2006) included 400 households and mothers of children under three, representing the 23 health regions of Botswana. The studies had the limitation of studying the phenomena of malnutrition only in children under three (3) years of age (Hien and Hoa 2009; Mahgoub*et. al.* 2006).

Findings from studies are consistent with the results which show that parent's education factor in and affect their children's malnutrition level. However, most studies focus on studying a wide variety of factors in general. This study seeks to address how nutritional knowledge of parents specifically affect malnutrition levels of children, a factor which seems not have been studied in depth in previous studies. Furthermore, the research also extended its scope to include children aged up to 71 months. Parents play a crucial role in shaping the nutritional status of their children. Building on this premise, this study aims to discover the level of nutritional knowledge of the parent respondents and whether there is a significant relationship between the nutritional knowledge of parents and the malnutrition status of their children.

The findings from the study and the resulting implications will be of great benefit to the people residing in Southern Philippines. The study will also contribute to the growing body of international knowledge and may open further avenues for comparison as to the causes and factors affecting malnutrition in children. The findings may also help in formulating policy recommendations and health interventions to address the growing problems of malnutrition among children in the locale.

The study is anchored on the **Health Promotion Model Theory by Nola J. Pender (1982). Pender's Theory** defines health as a positive dynamic state rather than simply the absence of disease. Health promotion is directed at increasing a patient's level of well-being. The health promotion model describes the multidimensional nature of persons as they interact within their environment to pursue health (Pender, 1982). Pender's model focuses on three areas: individual characteristics and experiences, behavior-specific cognitions and affect, and behavioral outcomes.

The theory notes that each person has unique personal characteristics and experiences that affect subsequent actions. The set of variables for behavior specific knowledge and affect have important motivational significance. The variables can be modified through nursing actions. Health promoting behavior is the desired behavioral outcome, which makes it the end point in the Health Promotion Model. These behaviors should result in improved health, enhanced functional ability and better quality of life at all stages of development. The final behavioral demand is also influenced by the immediate competing demand and preferences, which can derail intended actions for promoting health.

Pender's Theory is deemed to be significant in the context of the study since it aims to examine the personal characteristics of the participants and their life experiences which could serve as determinants of health outcome. The nutritional knowledge of parents, which includes knowledge on the causes and methods of prevention of malnutrition, serve as an assessment of their level of health promotion. The theory also helps in discerning behaviors which could enhance or derail functional ability and better quality of life among children with malnutrition.

The aim of the study was to evaluate the level of nutritional knowledge of parents, and to determine whether there is a significant relationship between their level of nutritional knowledge and the malnutrition level of the children 0-71 months old. In the context of the study, nutritional knowledge is defined as the information that the parent or primary caregiver has about the causes of malnutrition in children and knowledge of the methods of prevention of child malnutrition. The parent or primary caregiver will be classified as "*knowledgeable*" or "*not knowledgeable*" depending on his or her ability or inability to cite at least one cause of malnutrition in children and to cite at least one method of prevention of child malnutrition.

Specifically, the study aimed to prove or reject the following alternative hypothesis:

H1: There is a significant relationship between the nutritional knowledge of the respondents and the malnutrition status of the child participants.

METHODS

Study Design

This study utilized descriptive inferential research design that uses both quantitative and qualitative approach in the interpretation and analysis of data. Quantitative approach is thought to produce a hard science that involves rigor, objectivity, and control (Burns & Grove 2005). While descriptive research determines and reports the way things are and is primarily concerned with describing the nature or conditions of the present situation (Calderon, 2008).

The study was conducted in a municipality in the Southern part of the Philippines. It was chosen as the locale of the study due to its high number of malnourished children, which is reported at 178 despite the many health campaigns, programs and projects being implemented in the area. The researcher is also a health worker in this community and has observed a need to conduct a study in this area for assessment and to know the factors that affect malnutrition.

Participants

The study population included infants and children ages at 0 to 71 months of age who have been diagnosed with the condition of malnutrition in the Rural Health Unit as well as their parents or guardians. There were inclusion criteria utilized in the study such as: 1) The child had to be residing in the locale of the study with their parents or guardian for at least three consecutive months prior to the time that the study will be conducted; 2) The respondent must have a child or children between 0 to 71 months of age who have been diagnosed with malnutrition at the Rural Health Center; 3) Children who were visitors and found to have stayed less than three month were excluded from the study; and 4) Respondents having more than one (1) child with

malnutrition were counted as one respondent. Out of the 3,396-total population of infants and children aged 0-71 months old, 178 were diagnosed with malnutrition from the records of the municipal health office. The first level of sampling method used was total enumeration. The total 178 malnourished children were identified using the records from the health office. The second level of sampling used was purposive sampling which resulted in a smaller sample size of 123 children, who were then represented by their parents (father/mother) or guardian as the actual respondents.

Instrument

The study utilized a research instrument that was self-developed and structured, a questionnaire including closed questions consisting of four parts. The questionnaire had closed ended questions and consisted of the following four parts: The first part included questions about the parent or guardian's socio-demographic profile. The second part included questions that deal with the demographic profile of the child participants in terms of age, sex, weight, height, and birth order. The third part included questions about nutritional knowledge of the respondents in terms of knowledge of causes of malnutrition and the knowledge of methods of prevention of malnutrition. The fourth part contained information about the malnutrition status of the child participant in terms of the following indicators: weight for age, length/height for age, and weight for length/height.

Validity and Reliability of the Instruments

To determine the validity and reliability of the instrument, pre-testing was conducted using Cronbach's Alpha (result=0.751). Elements of the research proposal that were pre-tested included the study variables, the availability of the respondents, the acceptance of the study by the respondents, the time factor, the adequacy of resources, the relevance of the questions, the sequence and comprehensibility of the questions, and the accuracy of the respondents' interpretation of the questions. Pre-tested data from ten individuals who were not part of the study but who shared similar characteristics as the respondents were not used in the main study.

Data Collection

Triangulation procedure was employed in gathering data. A review of records and a survey was done. Some information and data such as the population statistic and current nutritional level status of children were taken from the Rural Health Unit of the municipality. The researcher asked permission from the Municipal Health Officer for access to the information. Documentary sources for the review of records included monthly reports and other reports related to the study that were available in the Rural Health Unit. Once the child participants had been identified, their names, the names of their parents, and their home addresses were retrieved from the records of the Rural Heath Unit.

After which, the second approach, which was a survey, was conducted. The survey involved face-to-face structured interviews that were conducted with the parents or guardian of the children selected to participate in the triangulation procedure in the study. The researcher conducted home visits to meet the parents for face-to-face structured interviews and verbally asked questions to the respondents using the pre-tested questionnaire as a guide.

Before the interview, the researcher explained the purpose of the study and asked for the informed consent of the respondents. The interview was conducted only after consent was obtained from the parent or guardian. After the interview, anthropometric measurements of the child participants were taken. The researcher brought weighing scales, height measuring boards and a child growth chart. If a parent or guardian was absent from his or her home during the first survey visit, a second home visit was scheduled for a face-to-face interview. To maximize the number of participants, research assistants including Barangay Health Workers who were trained in basic interviewing techniques and in taking anthropometric measurements were recruited to help the researcher. Inconsistencies in data in the questionnaire were checked for, and if found, were clarified with the parents. Questionnaires were numbered using a coding method for data analysis. The data was filed and kept under supervision of the researcher.

Data Analysis

In this study, the Statistical Product and Service Solutions (SPSS) program (formerly Statistical Package for Social Sciences, Version 13) was used to perform all the data computations in this study. The use of Software SPSS is the most used program for quantitative data analysis in the social sciences.

For this study, both univariate and multivariate conditional logistic regression was used to investigate the predictors or risk factors for malnutrition. Nutritional status of children was studied by using three sets of logistic regression models for three dichotomous dependent variables (underweight, stunting, and wasting). Descriptive and inferential statistics was used to achieve the study objectives. For in-depth treatment of data, the following statistical methods and techniques were employed:

Descriptive statistics. Frequencies and percentages were used to describe the consolidated data patterned on the statement of the problem of the study.

1. **Frequency** is the total number of responses. Frequency of responses, including the respondents' socio-demographic profile, demographic profile of the child participants, nutritional knowledge, and the level of malnutrition were tallied for the computation of percentage value.
2. **Simple Percentage** is a part of a whole expressed in hundredths and was used to determine the frequencies and the percentages of the first variable. This includes the manner on how the items were rated after the consolidation of data. The formula for Simple Percentage is as follows:

$P = (Fi/N) \times 100\%$

Where: Fi is the number of respondents and N is the total sample.

3. CHI- SQUARE was used as a test statistic in testing hypothesis concerning the variance or the standard population. P-values of ≤ 0.05 have been considered as basis of significant relationship between variables.

The formula for CHI- SQUARE is as follows:

$X^2 = \sum (Oi-ei)^2/ei$

Where:
X^2= Value of chi-square
Oi = Observed frequency
Ei= Expected frequency

Ethical Consideration

All procedures conducted in this study were in accordance with the ethical standards of the University of the respondents, as well as international and national standards. The appropriate approval was obtained from the University ethics committee before the researchers commenced with the study.

RESULTS

I. Socio-Demographic Profile

The table below describes and discusses the socio-demographic profile of the respondents (guardian or parents) such as their sex, age group (in years), ethnicity, religion, highest educational attainment, type of education, marital status, family headship, employment status, and monthly family income.

Table 1. Frequency and Percentage Distribution of the Respondents' Socio-Demographic Profile

Socio-Demographic Profile			
Variables		**Frequency (f)**	**Percent (%)**
Sex	*Male*	6	4.9
	Female	**117**	**95.1**
Age Group (in yrs.)	*18 – 24*	27	22.0
	25 to 31	36	29.3
	32 – 38	**50**	**40.7**
	39 – 45	10	8.1
Ethnicity	***Meranao***	**118**	**95.9**
	Tagalog	2	1.6
	Visaya	3	2.4
Religion	***Islam***	**119**	**96.7**
	Christian	4	3.3
Highest Educational	*No formal education*	2	1.6
Attainment	***Elementary level***	**51**	**41.5**
	Elementary graduate	8	6.5
	High school level	37	30.1
	High school graduate	11	8.9
	College level	10	8.1
	College graduate	4	3.3
Type of Education	***English School Education***	**113**	**91.9**
	Arabic Madrasah Education	*10*	8.1
Marital Status	*Living alone*	6	4.9
	Living together	**117**	**95.1**
Family Headship	*Father*	6	4.9
	Mother	**117**	**95.1**
Employment Status	***Unemployed***	**109**	**88.6**
	Sometimes get temporary jobs	10	8.1

	Regular job	1	.8
	Self-employed	3	2.4
Monthly Income	*Less than P1,000*	9	7.3
	P1,001 to P5,000	**104**	**84.6**
	P5,001 to P10,000	10	8.1

Table 1 shows the frequency and percentage distribution of the respondents' socio-demographic data of the studied sample. Female respondents, who comprised most (117) of the sample comprising 91.5 percent of the population, outnumbered the male respondents.

As seen in the table, most of the respondents are in the ages of 32 to 38 years (40.7%) followed by the age bracket 25 to 31 years (29.3%). Relatively, they represent the majority (70%) of the respondents. Within this age range, it is expected that they may already have more than 2 or 3 children who qualified as respondents of the study. There were, however, few respondents between the 18 to 24 age group (22%) and 39 to 45 years old age group (8.1%). This result is expected since they represent young and old mothers (or guardians) who may have few children that were not within the target age group of the study.

Moreover, the majority of the respondents were Meranaws (95.9%) whose religion is Islam (96.7%) and a few were from other ethnic groups such as Tagalog (1.6%) and Visaya (2.4%). The Meranaw tribe is the predominant ethnic group since the study was conducted in Bubong, one of the provinces of Lanao del Sur, where majority of the residents were Meranaws, also called "People of the Lake". Based on the results of Operation Timbang [OT] (2015) data, which was a weighing campaign implemented by the government, there were 3,396 children who were considered malnourished within the 0 to 71 age bracket in the Municipality of Bubong. These data implies that there is a prevalence of malnutrition cases among Meranaw families.

Majority of the respondents' educational attainment was elementary level (41.5%) and high school level (30.1%) under the category of English School (91.9%) type of education outnumbering largely the Arabic Madrasah (8.1%) type of education.

It is shown on the table that there were few single parents or those living alone (4.9%). On the contrary, majority of the respondents have been living together (95.1%), with the mother heading the family (95.1%). It is the typical Meranao family structure or setting where the mother is responsible for doing household chores and child-rearing while the father is away from home for work to sustain the needs of the family. Most of the mothers were also found to be unemployed (88.6%). As shown, majority of the respondents had family monthly income within the P1, 000 to P5, 000 ranges (84.6%), which is below the standard cost of living in the Philippines.

II. Profile of the Child Participants

Table 2. Frequency and Percentage Distribution of the Profile of Child Participants

Profile of Child Participants			
Variables		**Frequency (f)**	**Percent (%)**
Sex	*Male*	58	47.2
	Female	***65***	***52.8***
Age (in months)	***0– 12***	***36***	***29.3***
	13 – 24	24	19.5
	25 – 36	27	22.0
	37 – 48	15	12.2
	49 – 60	9	7.3
	61 – 72	12	9.8
Weight (kg)	4.0 – 6.9	27	22.0
	7.0 – 9.9	***41***	***33.3***
	10.0 – 12.9	40	32.6
	13.0 – 15.9	9	7.3
	16.0 – 18.5	6	4.9
Height/length (cm)	42 – 57	8	6.5
	58 – 73	42	34.1

	74 – 89	***45***	***36.6***
	90 – 105	19	15.4
	106 – 120	9	7.3
Birth Order	First	25	20.3
	Middle	30	24.4
	Youngest	***68***	***55.3***

The following table describes and discusses the profile of child participants in terms of sex, age, weight, height or length (cm), and birth order.

Table 2 shows the frequency and percentage distribution of the profile of child participants in terms of sex, age, weight, height, and birth order. It reveals that most of the child participants were female, which comprise of 65 or 52.8%, outnumbering male counterparts of about 58 or 47.2% out of the total 123 sample.

In terms of age, it shows that more than a quarter were newly born up to 12 months or 1-year-old of age, which comprised of 36 or 29.3% of the total, followed by the age group 25 to 36 months (27 or 22%), then age group 13 to 24 months (24 or 19.5%). The fewest were the age bracket 37 to 48 months (15 or 22%), followed by 61 to 72 months (12 or 9.8%), and 29 to 60 months (9 to 7.3%) respectively.

In terms of weight of the child participants as represented through kilogram (kg), the table shows that majority weighs 7.0 to 9.9 kg (41 or 33.3%) closely followed by 10 to 12.9 kg (40 or 32.6%). There were almost a quarter who weighs 4.0 to 6.9 kg (27 or 22%) and the smallest percentage was those who weighed 13 to 15.9 kg (9 or 7.3%) and 16 to 18.5 kg (6 or 4.9%). The weight of respondents (4.0 to 9.9 kg) as correlated to age (birth to 24 months) accords to the normal weight distribution of 4 to 9 kg of newborn to 16 months of old (Balita, 2010). This means that the variations of weights as indicators of malnutrition occurs during the childhood development process as evident by the upsurge of weight as correlated to increasing age. It is consistent with the results of OPT conducted by the Municipal Health Office (2015) that among 3,396 children within the age range of 0 to 71 months old, 91 were underweight, 25 severely underweight, and 32 wasted.

The height or length (cm) of the child participants were also taken to infer the actual Basal Mass Index as basis for identifying severity or status of malnutrition. It reveals that most of the child participants were 74 to 89 cm tall (45 or 36.6%) closely followed by those who were 58 to 73 cm tall (42 or 34.1%). With this, it suggests that the median age range falls within 74 to 89 cm of height. Substantially, height and weight of the child participants were interrelated findings. It also bears relation to the findings of MHO (2015) which shows that 18 of 3,396 children were stunted.

III. Nutrition Level

Table 3. Frequency and Percentage Distribution of the Childs Nutritional Level

Childs Nutritional Level		
	Frequency (f)	Percent (%)
Weight for Age	88	71.5
Weight for Length or Height	25	20.3
Length or Height for Age	10	8.2
Total	123	100.0

Table 3 shows the child's nutritional level in the context of weight for age which pertains to body's weight relative to child's age; weight for height (or length) which pertains to body weight in proportion to attained length or height; and height for age which pertains to attained growth in length or height at the child's age. It serves as the basis for computing the Basal Mass Index of the child participants to diagnose their category or degree of malnutrition level. It reveals that the weight for age is about 88 or 71.5 percent, the weight for length or height is 25 or 20.3 percent, and length or height for age is 10 or 6.2 percent. The drawn categorization for the malnutrition level is presented in the table below (Table 4).

IV. Malnutrition Level

Table 4. Frequency and Percentage Distribution of the Childs Malnutrition Level

Childs Malnutrition Level	Frequency (f)	Percent (%)
Underweight	70	56.9
Severely Underweight	18	14.6
Wasted or Thin	23	18.7
Severely Wasted or Thin	2	1.6
Short or Stunted	9	7.3
Severely Stunted or Short	1	0.8
Total	123	100.0

Table 4 above shows the child's malnutrition level as categorized. It reveals that more than half (70 or 56.9 percent) of the child participants were underweight. An obvious number of severely underweight and wasted or thin which comprised of 18 or 14.6 percent and 23 or 18.7 percent respectively were also noted. There were only few that falls in the severely wasted, stunted, and severely stunted which comprises of 2 or 1.6 percent, 9 or 7.3 percent, and 1 or 0.8 percent respectively has been identified.

V. Nutritional Knowledge of Parents

The following table below discusses the knowledge of the parents on the causes and methods of prevention of malnutrition.

Table 5. Frequency and Percentage Distribution of the Nutritional Knowledge of the Parents

Nutritional Knowledge of the Parents				
	Knowledgeable		**Not Knowledgeable**	
	Frequency (f)	Percent (%)	Frequency (f)	Percent (%)
Knowledge on the causes of malnutrition in children	49	39.8	***74***	***60.2***
Knowledge on the prevention of malnutrition in children	45	36.6	***78***	***63.4***

The nutritional knowledge of parents about causes and prevention of malnutrition serves as an assessment of their level of health promotion and prevention that can affect nutritional status of children. Respondents were asked if they knew the facts regarding causes and prevention that were listed in the questionnaire as it is stated by the researcher. If they knew at least five they were categorized as knowledgeable, if below five they were categorized as not knowledgeable. Table 4 shows the frequency and percentage distribution of the nutritional knowledge of the parents on the context of causes and prevention of malnutrition. It reveals that parents were not knowledgeable on the causes (74 or 60.2%) and prevention (78 or 63.4%) of malnutrition. Only few, on the other hand, have knowledge on the causes (49 or 39.8%) and prevention (45 or 36.6%).

VI. Correlation between Nutritional Knowledge and Malnutrition Status

The following table (Table 6) below presents the correlational analysis of the independent and dependent variables. Contextually, it infers to correlate the independent variable nutritional knowledge of the parents to the malnutrition status of the child within 0 to 71-month old age range as participants of the study.

Table 6. Chi Square Correlation Between Respondents Nutritional Knowledge and Malnutrition Status

Nutritional Knowledge (Independent Variable)	(Dependent Variable)	Chi-square Value	P value	Interpretation
Nutritional Knowledge on the Causes of Malnutrition	Malnutrition Status	***10.439***	***0.001***	***Significant***
Nutritional Knowledge on the Prevention of Malnutrition		***6.881***	***0.009***	***Significant***

Table 6 shows the relationship between the nutritional knowledge of the respondents and the malnutrition status of the child using Chi square correlation test under 0.05 alpha level of significance to determine the relationship between the two categorical variables. It reveals that the independent variable which is the nutritional knowledge of the parent respondents on the causes of malnutrition and knowledge on the prevention have p-value of 0.001 and 0.009 respectively are lesser than the alpha 0.05 level of significance which means they have a significant relationship with the nutritional status of the child participants.

Therefore, the alternative hypothesis H4: There is a significant relationship between the nutritional knowledge of the respondents and the malnutrition status of the child participants is ***accepted***.

DISCUSSION

Socio-Demographic Profile

The findings show that females make up most of the sample at 91.5%. Only a few male respondents participated in the study, the implication being that the traditional role the father takes is still prevalent in Meranaw families. The high proportion of female respondents in every household is an indication of child rearing, an expected role of mothers. Only few male respondents participated the study since they stand as role of father whose main responsibility is to sustain the needs (monetary and tangible materials) of the family, a common family setting among Meranaw's (Ali2012). Since the mother is known to have direct contact with their children, it could be safely asserted that they play a great role in the nutrition status of the family members especially among children.

In a study of World Bank (2010) about malnutrition in South Africa, it was shown that infant's malnutrition was associated with failure to do breastfeeding because of fear in contracting AIDS. This is consistent with the results of the study of Nzala et al. (2011) which revealed that mothers' knowledge in child rearing is of utmost importance in influencing the nutritional status of their child. Several studies (Nzala et al. 2011; Nnyepi et al., 2010; Hien and Hoa, 2009; Mahgoub, et al, 2006; and Turyashemererwa et al.2009) also revealed that the mother's role is significant in combatting malnutrition.

Majority of respondents attained only elementary level education (41.5%), with a few having attained high school level education (30.1%). The study of WHO (2006) about educational attainment of parents showed that malnutrition was highly attributed with low educational attainment. It is consistent with the findings of Nzala et al. (2011) and the Multiple Indicator Cluster Survey of 1999-2000 of 6,142 children which reveals higher incidence of malnutrition among families where the mother had a low educational level. Similarly, Turyashemererwa et al. (2009) reveal that the education level of the mother/caretaker was significantly correlated with child stunting. Mahgoub*et. al* (2006) shows similar findings which revealed that the higher the mother's level of education, the lower the level of child underweight status of malnutrition. This implies that education level among mothers or parents/guardians is very crucial in the nutritional status of children. This also means that enriching education particularly knowledge in nutritious foods, hygiene, breast feeding, and promotion of healthy lifestyle could decrease cases of malnutrition.

Most of the mothers were found to be unemployed (88.6%). This implies that they rely on the earnings of their spouse. Majority of the family monthly income is within P1, 000 to P5, 000 (84.6%), which is very meager to sustain family needs with three (3) or more than family members (NEDA 2013).

Subsequently, having limited resources deprives the family the chance to acquire nutritious foods, medical and health services and other related opportunities and advantages. This can be supported by studies (Altman, Moore, Top, Holland, & Elliot, 1973; sanjur,1982), that low monthly income affects purchasing and consumption of foods which can lead to cases of malnutrition such as stunting (Triune 1974; Wray, 1971) and wasting) (Grant, 1964). According to Mahgoub*et. al* (2006), monthly family income has direct proportional relationship with nutritional status which he defines as the prevalence of malnutrition (underweight, which decreased significantly as family income increased.

Child's Profile

Most of the child participants were female, which comprise of 65 or 52.8%, outnumbering male counterparts of about 58 or 47.2% out of the total 123 sample. The findings above correspond to the study conducted by Shargi, Kamram and Faridan (2011) in Iran which showed that malnutrition (underweight) were highly associated with the female gender. In contrary, a cross-sectional study of Nzala, Siziya, Babaniyi, Songolo, Muula and Rudatsikira (2011) found that among children less than 5 years of age in Zambia malnutrition was associated with males. The findings of studies in Iran and Zambia are consistent with the findings of this study since the ratio of male and female as participants who are having malnutrition were almost equal in ratio. It implies that malnutrition could occur regardless of gender.

Most of the respondents who were considered to be malnourished were newborns aged 12 months to one year. These results imply that cases of malnutrition occur more in newborns. It could be justified based on Sigmund Freud's Psychosexual (Psychoanalytical) Development theory which states that the focus of the developmental stages of the age

bracket from birth to 18 months is oral gratification needs (Balita, 2008). This means that any faulty feedings could be a high risk for cases of malnutrition.

Nutrition Status

More than half (70 or 56.9 percent) of the child participants were underweight. It could imply that the child participants (0 to 72 months cold) could be undernourished or receiving insufficient nutritious foods or vitamins. The findings are consistent with the findings of the OPT program. This condition on one hand may consequently lead them in contracting disease such as pneumonia, measles, diarrhea, malaria, and HIV/AIDS that expectedly affects their performance, health, and survival (Mahgoub et al 2006). The WHO (2013) associated child's malnutrition to the global incidence of death among children. Thus, conducting health programs and these kind of undertakings, such as the OPT, are essential interventions that could prevent or decrease the worst consequences of malnutrition.

Nutritional Knowledge of Parents

The findings would reveal that parent-respondents were not knowledgeable on the causes (74 or 60.2%) and prevention (78 or 63.4%) of malnutrition. Only few, on the other hand, have knowledge on the causes (49 or 39.8%) and on preventing malnutrition (45 or 36.6%). It means that the gaps in the knowledge of parents about malnutrition could derail the functional ability and better quality of life among their children. Several studies (Nzala et al., 2011; Nnyepi et al., 2010; Hien and Hoa, 2009; Mahgoub, et al, 2006; and Turyashemererwa et al., 2009) revealed that knowledge about health has significant relationship with the quality health status of the family. The correlation between parents' inadequate knowledge and the rising case of malnutrition implies a need for information dissemination and regular health teachings to the parents, particularly on issues of food and nutrition.

Correlation of Nutritional Knowledge and Malnutrition of the Children

The results would show that there is a significant relationship between nutritional knowledge of parents and malnutrition of their children. Knowledge on the causes and prevention of malnutrition is significant in affecting the nutritional status of the children. Nzala et al. (2011) reveals that knowledge related to promotion of health is essential in influencing the nutritional status. These findings are consistent with the findings of several other studies (Nzala et al.2011; Nnyepi et al. 2010; Hien and Hoa, 2009; Mahgoub, et al2006; and Turyashemererwa et al. 2009) which also reveal the same findings.

CONCLUSION

The study concludes that malnutrition is prevalent among the children in the southern Philippines as evident by the data gathered through categorization based on the age, height, and weight of the child participants. The researcher concludes that cases of malnutrition must be cautiously and seriously tackled and be given immediate intervention to prevent possible mortality. Health programs against malnutrition must be strengthened and heightened both in the rural and urban areas.

Based on the conclusion, some implications can be generated. It can be inferred that since most of the respondents are not knowledgeable on the causes and prevention of malnutrition, they are unaware of the nutrition of their children. They cannot comply with the health needs of their children which lead to their malnutrition. Those with a limited knowledge on nutrition tend to follow an unhealthy diet with not enough nutrients, vitamins, and minerals and are subsequently at risk of malnutrition.

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