Nutritional Status of Under Five Children and Associated Factors in Shuklaphanta Municipality, Kanchanpur Districts of Far-West Nepal

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Abstract

Introduction: Nutrition can be defined as the substances that comprises of essential elements needed for the proper growth, functioning and development of the body.The term children refer to the human being below five years or below sixty months. Nutritional status of the children refers to the condition of the nutrition in the children. The low nutritional status in the human body leads to the malnutrition.

Aims of the study: The main objective of the study was to assess the nutritional status of under five children in Shuklaphnata Municipality in Kanchanpur district of Far west Nepal.

Methodology: Cross sectional descriptive study was applied for the present research study.The study setting was in Shuklaphanta Municipality of Kanchanpur district of Far-west Nepal. The study population was under five children and their respective mothers in the study areas. The confidence level was taken 95% and 5% of error and the sample size was 222. The sampling technique that was used in my study was random systematic sampling.The total duration of the study was four months i.e from August to November.Structured questionnaire along with MUAC tape, weighing machine and inch tape was used as a tools.The data were entered in to MS excel

2007 and those data are transferred in to SPSS 16 and analysis was done on SPSS 16 and WHO Anthro Plus software.

Result: Regarding the age majority of mothers' age was between 20 to 31 years. Most of the children were between ages 30 to 40 months. Regarding the level of knowledge 50 % were having average of nutritional knowledge, 45 percentage were having good level of knowledge and 5 percentages were having very good knowledge level. Occupation of the Parents, Having own land for cultivation, Daily food consumption patterns of the child, visiting health center regularly for immunization and regular check up were the factors that were significant associated with the nutritional status. Regarding to the MNA 74.32 percentages were normal, 14.86 percentages were having MUAC between 11.5 to 12.5 which is MAM(Moderate Acute Malnutrition) condition similarly, 10.81 percentages were less than or equal to 11.5 which is SAM(Severe Acute Malnutrition) condition. Similarly in the BMI 10.81 percentages were normal, 82.88 were under weight 0.9 percentages were overweight 2.7 percentages were class II obesity and 2.7 were having class III obesity.

Key Words: Under five children, Malnutrition, Nutrition, MUAC, BMI

Introduction

Background of study

Nutrition can be defined as the substances that comprises of essential elements needed for the proper growth, functioning and development of the body. The nutrition consists of the nutrients. The nutrients refer to the essential elements that are found in the food substances for example carbohydrate, protein, fats, vitamins and mineral. The term children refer to the human being below five years or below sixty months. Nutritional status of the children refers to the condition of the nutrition in the children. The low nutritional status in the human body leads to the malnutrition

Malnutrition in children and women is a major public health problem in most of the developing countries and Protein Energy Malnutrition (PEM) is more common among under five year children. Childhood malnutrition is major underlying cause (>50%) of the under 5 year children deaths. Every year 7.6 million children die such preventable malnutrition and its related causes. Similarly, next prevalent cause of infant and child mortality is low birth weight which leads to the intergeneration cycle of malnutrition especially in female (Bhandari, Nutritional status of Under five children and factor associated in nawalparasi district of Nepal, 2014).

The annual report of Department of Health services shows that about 68% of the children are suffering from Anemia. The prevalence of underweight is 39% in Nepal, wasting is 11% , stunting is 37 in the Nepal.(Sapkota & Gurung, 2016).

After the publication of my study I am sure every individual those are willing to conduct the research on the nutritional status or food hygiene will definitely get the idea. Along with this one copy of my research paper will be sent to the Province office to tell them exact scenario of nutrition level in children and will be enforced to implement my recommendation for the betterment of the future of the children.

Aims:

The main objective of the study is to assess the nutritional status of under five children in Shuklaphnata Municipality in Kanchanpur district of Far west Nepal.

Objectives:

The objectives are:

1. To measure the anthropometric measurement of the under five children
2. To identify the food consumption pattern of under five children
3. To find out the associate factor related with the nutritional status of the under five children.
4. To find out the nutrition level of knowledge among the mothers of under five children.

Methodology

Following methods were used while conducting the study:

Study Design: The study design was crossectional descriptive study. It was a quantitative study.

Study setting: The study setting was in Shuklaphanta Municipality of Kanchanpur district of Far-west Nepal. The study was conducted in the semi urban area of this municipality and all the culture and religion were taken in the study.

Criteria

Inclusion criteria

- Those Children below five years of age or 0-59 months
- Those who were willing to participate

Exclusion criteria

- Children mothers who were unwilling to participate

Study population: The study population was under five children and their respective mothers of this municipality.

Sample size: For the sample size the prevalence of severely stunted 17.5% was used.(Bhattrai & Pradhan, 2015) Thus the confidence level was taken 95% and 5% of error and was calculated by the formula.

$$n = (Z^2 \times p \times q) \div e^2$$

$$= (1.96^2 \times 0.175 \times 0.825) \div (0.05^2)$$

$$= 221.8$$

$$= \sim 222$$

Sampling technique: The sampling technique that was used in my study was random systematic sampling.

Data Collection Tools: Structured questionnaire along with MUAC tape, weighing machine and inch tape was used as a tools.

Data entry: The data were entered in to epi data and MS excel 2007.

Data Analysis: Those data from epi info and MS excel 2007 were transferred in to SPSS 2025 and Anthro Plus. Hence, those entered data were analyzed over there.

Limitation of the study: As the study was done on the under five children only and could not able to do research in all age group this was the main limitation. Beside this one another limitation was this study was focused on one municipality cannot do research in whole district.

Ethical Approval: Before doing research it is necessary to do the ethical approval. Same things were done on my study. At the beginning i had taken approval from the University regarding the study topic, location and study type. As i got permission from my University and faculty I went to municipality office for the permission to do research in this municipality. Finally I gave the consent form to the individual respondent regarding study.

Findings

The major findings of the study are mentioned below:

Variables	Frequency	Percent
Age of Mothers		
21-30 years	182	81.9
31-40 years	36	16.21
Above 40 years	4	1.8
Total	**222**	**100**
Age of children		
Below six months	24	10.81
Six to two years	82	36.9
Two to three years	34	15.31
Three to four years	46	20.72
Four to five years	36	16.21
Total	**222**	**100**
sex of children		
Male	112	50.45
Female	110	49.54
Total	**222**	**100**
Ethnicity		
Brahmin	59	26.57
Chhetri	93	41.89
Tharu	41	18.46
Dalit	29	13.06
Total	**222**	**100**
Educational level		
Informal Education	66	29.72
Primary	60	27.02
Seconadry levl	96	43.24
Total	**222**	**100**
Income of family Per Months		
5000	22	9.9
10000	89	40.09
20000	103	46.39
Above 20000	8	3.6
Total	**222**	**100**
Occupation of family		
Agriculture	138	62.16
government Job	25	11.26
Foreign	52	23.42
Others	7	3.15

Total	222	100

The table above shows the demographic characteristics of the respondents. Regarding the age majority of mothers age was between 20 to 31 which is 81.9 percentage, 1.4 percentage were above 40 years. Regarding the children majority of the children were between six months to two years which was 36.9 percentage. Regarding the sex 50.45 percentages were male children and 49.54 percentage were female. Regarding the ethnicity majority were Chhetri 41.89 percentage followed by Brahmin 26.54 percentages Tharu 18.46 and Dalit 13.06 percentage. Regarding to the educational status most of the mothers were having the above secondary level education 43.24 percentage which is followed by informal and primary education 29.72 and 27.02 percentages respectively. Regarding the economic status and income majority of the respondents were having income 20000 which was 46.39 percentage few of them were having above 20000 which was 3.6 percentage. Similarly, regarding to the occupation Majority of the respondents were engaged in agriculture which is 62.16 percentage which is followed by foreign 23.42 percentage, governmental job 11.26 percentages and others 3.15 percentages.

Figure 1: Population Pyramid
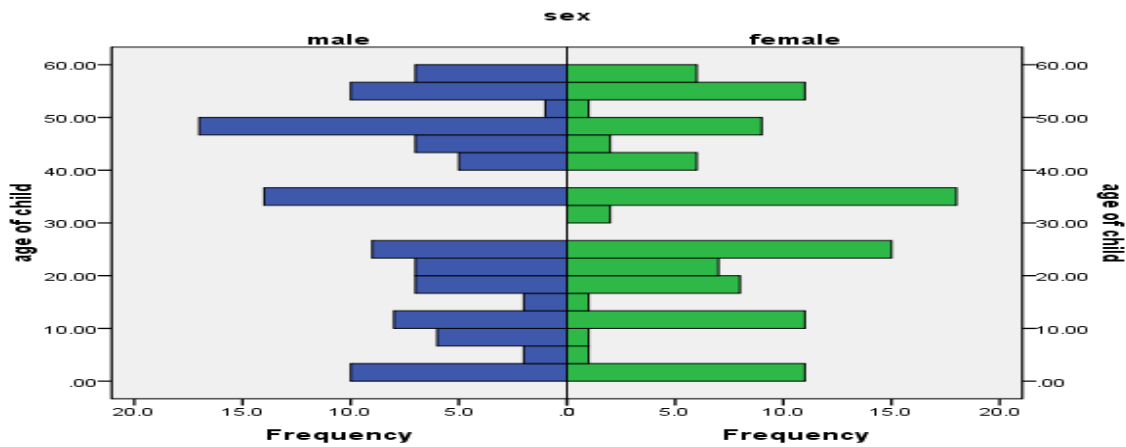
The figure above shows the population pyramid of the study. According to it most of the children were between age 30 to 40 months. Most of the females were at the age of 30 to 40 months and most of the male were at the age 40 to 50 years. Similarly, least females were at the age of below 10 months and male were least at the age 50 to 55 months.

Knowledge level in nutrition

■ Average ■ Good ■ Very Good

5%

45%   50%
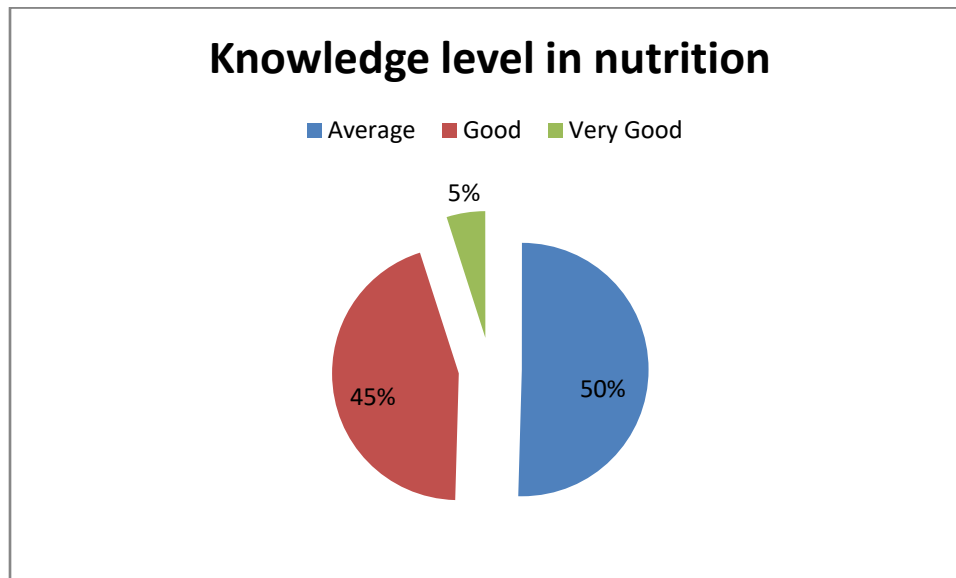
The pie chart above demonstrates the knowledge level regarding the nutrition. According to the chart 50 percentages were having average of nutritional knowledge, 45 percentage were having good level of knowledge and 5 percentages were having very good knowledge level.

Factors associated

In this part we had assumed MUAC value as nutritional status of children and cross tabulated with various factors which are enlisted below. If the P value comes less than 0.05 there seem to be association.

Table 1: Association between Mothers age and MUAC

ages	abnormal MUAC	Normal MUAC	D.F	P Value
below 25	23	64	1	
above 25	34	101		0.122

The table above shows the association between the Mothers age and MUAC. As the P value is greater than 0.05 at the D.F 1, there seems no association between the mothers age and MUAC or nutritional level.

Table 2: Association between Occupation and MUAC

Occupation	abnormal MUAC	Normal MUAC	D.F	P Value
Agriculture	42	96	1	
non agriculture	15	69		0.014

The table above represents the association between the occupation of family and child nutritional status. According to it P value is smaller than 0.05 at the D.F 1 so there is association between the occupation and nutritional status of child.

Table 3: Association between MUAC and having own land

own land	abnormal MUAC	Normal MUAC	D.F	P Value
Yes	55	146	1	
No	2	19		0.041

The table above shows the association between nutritional status and having own land. As we came to conclude that there is association between having own land and nutritional status in which P value is 0.041 is smaller than 0.05 at D.F 1.

Table 4: Association between MUAC and smoking habits

Smoking	abnormal MUAC	Normal MUAC	D.F	P Value
Yes	49	136	1	0.14
No	8	29		

The table above shows the association between nutritional status and smoking habit. As the P value is greater than 0.05 at the D.F 1 hence, no association is seen between the smoking habits and nutritional status.

Table 5: Association between MUAC and alcohol consumption

Alcohol	abnormal MUAC	Normal MUAC	D.F	P Value
Yes	2	12	1	
No	55	153		0.169

The table above shows the association between the nutritional status of children and alcohol consumption patterns of parents. As the P value is larger than 0.05 so there is no association seen.

Table 6: Association between MUAC and Daily food consumption pattern

daily food	abnormal MUAC	Normal MUAC	D.F	P Value
less than 3 times	36	110	1	
more than 3 times	21	55		0.113

The table above shows the association between the nutritional status and food consumption patterns of mothers. As from the table we can see that P value is greater than 0.05 at D.F 1 so there is no association.

Table 7: Association between MUAC and food giving to baby daily

food to baby	abnormal MUAC	Normal MUAC	D.F	P Value
less than 3 times	9	72	1	0.00
more than 3 times	48	93		

The table above shows the association between the nutritional status of children and daily food consumption patterns by child. As the P value is 0.00 which is smaller than 0.05 so, we conclude that there is significant association between food patterns to baby and nutritional status.

Table 8: Association between MUAC and visiting health centers

visit health center	abnormal MUAC	Normal MUAC	D.F	P Value
Yes	34	118	1	0.033
NO	23	47		

The table above shows the association between the nutritional status of children and regular health centers visitors. As we get P value 0.033 which is smaller than 0.05 so we can conclude that there is association between nutritional status and health centers regular visit.

Table 9: Association between MUAC and BMI

BMI	abnormal MUAC	Normal MUAC	D.F	P Value
low BMI	57	151	1	0.014
normal BMI	0	14		

The table above shows the association between the MUAC measurement and BMI measurement. As we get P value 0.014 which is less than 0.05 so we can say that there is association between MUAC measurement and BMI measurement.

MNA (Mini nutritional Assessment)

In this part the individual child is measured the nutritional level through the anthrop measurement. In which MUAC tape was used to measure the mid upper arm circumference and height was measured by inch tape and weight through weighing machine to calculate the BMI(Body Mass Index)

Table 10: MUAC (mid Upper Arm Circumference)

MUAC		
Value	Frequency	Percent
less then or equals to11.5	24	10.81
>11.5 to 12.5	33	14.86
above 12.5	165	74.32
Total	222	100

The table above shows the finding of MNA. In this MUAC (Mid Upper Arm Circumference) was measured. According to the table 74.32 percentages were normal, 14.86 percentages were having MUAC between 11.5 to 12.5 which is MAM(Moderate Acute Malnutrition) condition similarly, 10.81 percentages were less than or equal to 11.5 which is SAM(Severe Acute Malnutrition) condition.

Table 11: BMI (Body Mass Index)

BMI		
Value	Frequency	Percent
under weight	184	82.88
Normal	24	10.81
class I obesity-Overweight	2	0.9
Class II Obesity	6	2.7
class III obesity	6	2.702
Total	222	100

The table above shows the results of BMI(Body Mass Index). According to the table 10.81 percentages were normal, 82.88 were under weight 0.9 percentages were overweight 2.7 percentages were class II obesity and 2.7 were having class III obesity.

Discussion

The finding of the study shows the various outputs. Malnutrition will be the great burden among the under five children in coming days. Today children are the future fathers and mothers. For identifying the nutritional status of under five children I had selected Shuklaphanta municipality of Kanchanpur District of Far-west Nepal.

The major findings of my study were level of knowledge in Nutrition among the mothers, Various associated factors for nutrition, Food consuming patterns and anthropometric measurement. The anthropometric measurement includes MUAC and BMI of the children.

The study conducted in the Kanchanpur in 2013 by Tulsi Ram Bhandari and Muniraj Chhetri had shown that 20% were suffering from MAM(Moderate Acute Malnutrition) and 15% were SAM(Severe Acute Malnutrition)(Bhandari & Chhetri, Nutritional Status of Under Five Year Children and Factors, 2013). In my study the major findings are 74.32 percentages were normal,

14.86 percentages were having MUAC between 11.5 to 12.5 which is MAM(Moderate Acute Malnutrition) condition similarly, 10.81 percentages were less than or equal to 11.5 which is SAM(Severe Acute Malnutrition) condition. The both finding shows that there is quite similar finding. As compared to past study my studies shows the improvement in nutritional level.

The study conducted in the Nigeria in 2016 by Julie Omaghomi Jemide, Henrietta Nkechi Ene-Obong et.al on the topic Association of maternal nutrition knowledge and child feeding practices with nutritional status of children in Calabar South Local Government Area, Cross River State, Nigeria shows that Most of the mothers (91.7%) had knowledge about exclusive breastfeeding; and the duration of exclusive breastfeeding was also known by majority of the mothers (82.8%)(Jemide, Ene-Obong, & et.al, 2016). Where as in my study 73.42 % mothers have knowledge of exclusive breast feeding and time period of exclusive breast feeding. From above finding I can conclude that the knowledge level of mothers of my research area is quite low in compared to that of the Nigeria.

Conclusion and Recommendations

Conclusion

Nutrition can be defined as the substances that comprises of essential elements needed for the proper growth, functioning and development of the body. The nutrition consists of the nutrients. The nutrients refer to the essential elements that are found in the food substances for example carbohydrate, protein, fats, vitamins and mineral. The main objective of the study is to assess the nutritional status of under five children in Shuklaphnata Municipality in Kanchanpur district of Far west Nepal.

According to the finding most of the children were between age 30 to 40 months. Most of the females were at the age of 30 to 40 months and most of the male were at the age 40 to 50 years. Similarly, least females were at the age of below 10 months and male were least at the age 50 to 55 months.

Regarding the level of knowledge in the nutrition 50 percentages were having average of nutritional knowledge, 45 percentages were having good level of knowledge and 5 percentages were having very good knowledge level. Occupation of the Parents, Having own land for cultivation, Daily food consumption patterns of the child, visiting health center regularly for immunization and regular check up were the factors that were significant associated with the nutritional status.

Regarding the MNA (Mini Nutritional Assessment). MUAC (Mid Upper Arm Circumference) was measured. According to the table 74.32 percentages were normal, 14.86 percentages were having MUAC between 11.5 to 12.5 which is MAM(Moderate Acute Malnutrition) condition similarly, 10.81 percentages were less than or equal to 11.5 which is SAM(Severe Acute Malnutrition) condition. Similarly in the BMI 10.81 percentages were normal, 82.88 were under weight 0.9 percentages were overweight 2.7 percentages were class II obesity and 2.7 were having class III obesity.

This shows that there is a huge problems of the malnutrition regarding the underweight and moderate acute and severe acute are also on the way towards the progressing in coming days, if they are cured in today time there will be a horrific condition in coming days.

Recommendation

The finding of the present study, address the need for timely screening and regular monitoring of the nutritional status of under five children in Shuklaphanta municipality, so that under five children identification of the nutritional status can be commenced and necessary interventions can be taken in time to help the morbidity conditions due to poor nutritional status and improve the health of under five children . as per as the finding following recommendations are given:

  I.   Regular nutritional assessment of under five children should be done so that exact result can be find out.

  II.   Food supplementation like Bal Vita, RUSF and RUTF should be done among the under five children because those contains necessary nutrients required for the body.

 III.   Community based program should be conducted regarding nutrition and health in which pregnant and lactating mothers should be involved due which they get aware of nutrition and malnutrition of children.

 IV.   Local level government should separate certain budget on the nutrition screening of under five children as well as pregnant and lactating mothers.

References

Bhandari, T. R. (2014). Nutritional status of Under five children and factor associated in nawalparasi district of Nepal. *Journal of Nutritional Health and Food sciences*, 17-28.

Bhandari, T. R., & Chhetri, M. (2013, 12). Nutritional Status of Under Five Year Children and Factors. *Journal of Nutritional health and food science, iv*(489).

Bhattrai, S., & Pradhan, P. M. (2015). Malnutrition Status Among Under -5 Children in a Hill Community of Nepal. *kathmandu University Medical Journal*, 23-30.

Jemide, J. O., Ene-Obong, H. N., & et.al. (2016). Association of maternal nutrition knowledge and child. *International journal of Home science*, 40-48.

Sapkota, V. P., & Gurung, C. K. (2016). Prevalance and predictors of under weight, stunting and wasting of under five children. *Journal of Nepal health Reserach counsil*, 120-126.