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RESEARCH ARTICLE

FACTORS AFFECTING THE NUTRITIONAL STATUS OF CHILDREN ATTENDING EARLY CHILDHOOD DEVELOPMENT CENTERS IN POKHARA, NEPAL

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ABSTRACT

Introduction: The nutritional status of children determines their health, physical growth and development, academic performance and progress in life. However, nutritional status of the children in Nepal has become a major public health problem.

Objectives: This study aims to “determine the factors affecting the nutritional status of children in Early Childhood Development Centers (ECDCs) of Pokhara City”.

Method: A descriptive cross sectional approach was adapted for the study. Anthropometric parameters, namely weight and height, were measured among 282 children aged 2-5 years. Semi-structured questionnaires were used for mothers with face to face interview method. Data was analyzed by SPSS (version 20) and WHO Anthro-Software (version 3.2.2). Chi-square and Binary Logistic Regression Analysis were applied to measure associations.

Results: Result indicated that among 282 children, 53.2% were males and 46.8% females with age range of 24 months to 59 months (mean age = 34.39 ± 7.49 months). Among them, 32.6% were stunted, 16.0% were underweight and 18.1% were wasted. The prevalence of shunting and wasting was higher as compared to underweight in this Early Childhood Development Centre (ECDC). There was association between nutritional status and age ($p=0.001$), sibling of the child ($p=0.006$), food taboo practice, ($p=0.001$), family economic status ($p=0.044$), hand washing practice before feeding ($p=0.035$), covering of food while cooking ($p=0.031$) and vitamin A and De-worming given ($p=0.022$).

Conclusion: It is concluded that nutritional status is still a problem among children of two to five years of age in ECDC Pokhara Sub- Metropolitan City, Kaski. Major factors affecting nutritional status of children are increasing age, no colostrums feeding, food taboos, not covering the food during cooking, sibling of the child, vegetarian diet, and commercial food. These findings are of great importance because they demand potential actions that can be used to improve the nutritional status of children.

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INTRODUCTION

Good nutrition is a fundamental right. Nepal with its ratification in 1990 of the ‘Convention on the Rights of Child, by UN General Assembly in 1989, committed itself to recognizing and implementing a wide range of civil and political rights for Nepalese children. The convention recognizes children’s right to survival and to the highest attainable standard of health. Articles implies a healthy environment, nourishing food, quality health services and parental awareness.¹

Globally in 2011, an estimated 101 million children under five years of age were underweight, or approximately 16 per cent of children under five. Underweight prevalence is highest in South Asia, which has a rate of 33 per cent, followed by sub-

Saharan Africa, at 21 per cent. South Asia has 59 million underweight children, while sub-Saharan Africa has 30 million.²

Lack of protein is seen among 45 percent children, vitamin A among 35 percent and 78 percent children are anemic. Lack of awareness on nutrition is the cause of high prevalence of malnutrition, which has long been recognized as a consequence of poverty. Like other district, harmful cultural and traditional practices such as child marriage still exists in Nawalparasi which is leading to many women give birth in young age. As a result, their children because anemic and under nourished and have low weight.³

Nutrition is an important determinant of immunological status; and under nutrition can impair immune competence and

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increase susceptibility and vulnerability to infections. The immediate cause of over half of South Asia's under five mortality is the synergistic effect of inadequate dietary intake and frequent episodes of diseases.⁴ Malnutrition in Nepal is indicated primarily by stunting, wasting and anemia. The present country scenario of under-five child nutrition status shows that 41 percent children under five suffer from chronic malnutrition (stunting) while 11percent are wasted. Some 46 percentage between 6 and 59 months are anemic. Children in rural areas are more likely to be stunted 42% than in urban area 27%.⁴

Factors that contribute to malnutrition are many and varied, so multifaceted strategies are required to combat it. It is therefore important to determine its causative factors before appropriate intervention can be implemented. All over the country, the nutritional status of children is not satisfactory. Due to poverty, conflict and disaster millions of children are made homeless which may be associated with worsening of child health.⁵ This study tries to assess the factors associated with nutritional status among children. So that better nutritional intervention can be designed.

MATERIAL AND METHODS

A descriptive approach was adapted for the study. Total 282 mothers' children of age 2-5 year at Early Childhood Development Centre, Pokhara Sub-Metropolitan City were the sample of this study. Among the probability sampling techniques, cluster sampling technique was used in the study. The objectives of the study were to determine the nutritional status of children according to WHO classification and to identify the association between nutritional status of children and different factors.

Instrument/tool used for data collection

The semi structure interview schedule consisted two parts:

Part I

was related to socio-demographic information

Part II

was related to factors affecting nutritional status of children that included children, mother and service utilization related issues.

Anthropometric measurements

Next, those sampled 282 children with 2-5 years of age were also assessed/ examined for their anthropometric measurements. Anthropometric measurement of children was done on each child by researcher herself.

Inclusion criteria

Inclusion criteria for the sample included mothers of 2-5 years children who were:

- willing to participate in the research study
- able to read and can understand English or Nepali.
- available at the time of data collection

Exclusion criteria

Exclusion criteria for the sample were mothers who were having child with less than 2 years and more than 5 years of age.

Development of the tool

To develop tool related resources were reviewed and consulted with subject expert and advisor. Reliability of research instrument was maintained by pretesting in two clusters i.e., 6 and 10 representing 10% (28 mothers and children) of total sample size.

Ethical clearance and permission

The data collection was initiated after receiving the approval from Thesis Committee of Nursing Program, Chitwan Medical College as well as ethical clearance was obtained from CMC-IRC. The verbal informed consent was obtained from each respondent prior to data collection.

Data collection procedure

The data was collected from 10th November to 6th December, 2013 and analyzed using descriptive and inferential statistics.

Findings

Socio-Demographic characteristics

The present studies showed that majority (58.9 %) of children were 24-35 months of age. More than half (53.2%) of the children were males compared to female 46.8%. Regarding ethnicity of children, 31.9% belonged to Brahmin and Chhetri. Concerning family type, Majority (77.3%) of children were from nuclear family. More than half (53.5%) of the children had sibling.

Nutritional Status of Children

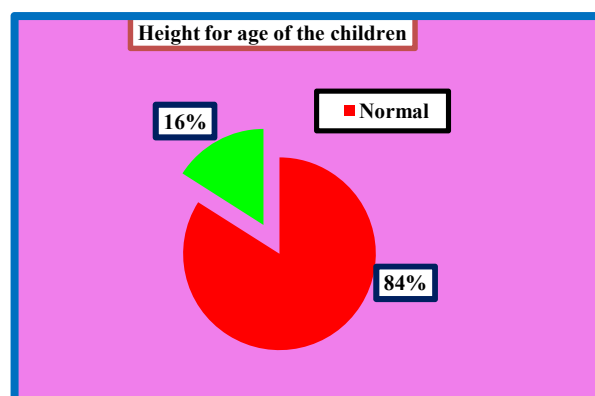


Figure 1

Above figure shows that further analysis in height for age, majority (67.4%) of children were normal while 32.6% were stunted.

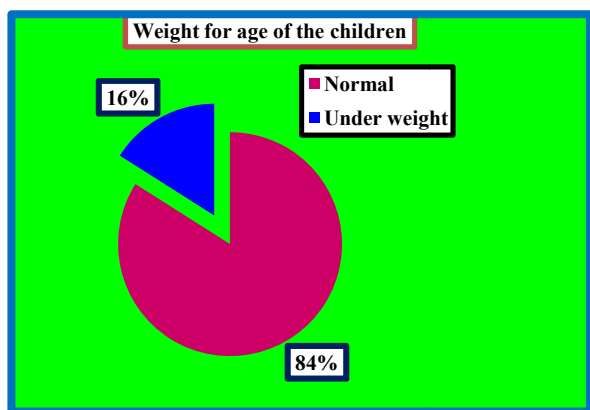


Figure 2

Above figure shows in weight for age, majorities (84.0%) of the children were normal but 16.0% were underweight.

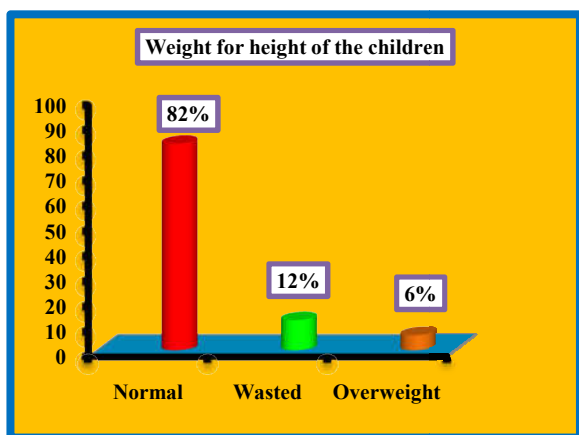


Figure 3

Regarding in weight for height, majority (81.9%) of children were normal but 11.7% was wasted and 6.4% were overweight. So for the further analysis in column of weight for height, wasted and overweight are merged and name is given normal and wasted.

Association between nutritional status of children and Socio-Demographic Factors

Table 1 Association between Height for Age and Children’s Socio -Demographic Factors

Variables	Height for Age		x ²	p-value
	Normal n(%)	Stunted n (%)		
Age group in months				
24 -35	125(75.3)	51(24.7)	18.270	0.001
36-47	56(58.9)	39(41.1)		
48-59	9(42.9)	12(57.1)		
Sex Male Female	101(67.3)	49(32.7)	0.000	0.987
	89(67.4)	43(32.6)		
EthnicityBrahamin/ hhetri	55(62.5)	33(37.5)	2.918	0.232
Janjati/madeshi	84(73.0)	31(27.0)		
Dalit	51(64.6)	28(35.4)		
Family type Joint Nuclear	42(65.6)	22(34.4)	0.115	0.734
	148(67.9)	70(32.1)		
Sibling of child			7.478	0.006
Yes	91(60.3)	60(39.7)		
No	99(75.6)	32(24.4)		

Level of significance p=0.05

Above table shows that there was statistical significance association between nutritional status as per height for age and age group of children and sibling of the child (p= 0.001, p=0.006) respectively. (P<0.05 level) Similarly there was no statistically association of sex, ethnicity, and type of family. (P>0.05 level)

Table 2 Association between Weight for Height and Children Socio- Demographic Factors

Variables	Weight for Height		x ²	p-value
	Normal n (%)	Wasted n (%)		
Age group in months				
24 -35	136(81.9)	30(18.1)	0.756	
36-47	79(83.2)	16(16.8)		
48-59	16(76.2)	5(23.8)		
Sex Male Female	221(80.7)	29(19.3)	0.337	0.562
	110(83.3)	22(16.7)		
EthnicityBrahamin/Chhetri	71(80.7)	17(19.3)	0.323	0.851
Janjati/MadeshiDalit	96(83.5)	19(16.5)		
	64(81.0)	15(19.0)		
Family type Joint Nuclear	54(84.4)	10(15.6)	0.338	0.561
	177(81.2)	41(18.8)		
Sibling of child			3.830	0.050
Yes No	130(86.1)	21(13.9)		
	101 (77.1)	30(22.9)		

Level of significance p=0.05

Above table shows that there was no statistically association between nutritional status as per weight for height and age group of children, Sex, ethnicity, and type of family and sibling of the child.

Table 3 Association of Weight for Height and Children Socio- Demographic Factors

Variables	Weight for Height		x ²	p-value
	Normal n (%)	Wasted n (%)		
Age group in months				
24 -35	136(81.9)	30(18.1)	0.756	
36-47	79(83.2)	16(16.8)		
48-59	16(76.2)	5(23.8)		
Sex Male Female	221(80.7)	29(19.3)	0.337	0.562
	110(83.3)	22(16.7)		
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Family type Joint Nuclear	54(84.4)	10(15.6)	0.338	0.561
	177(81.2)	41(18.8)		
Sibling of child			3.830	0.050
Yes No	130(86.1)	21(13.9)		
	101 (77.1)	30(22.9)		

Level of significance p=0.05

Table no. 3 shows that there was no statistically association between nutritional status as per weight for height and age group of children, Sex, ethnicity, and type of family and sibling of the child.

CONCLUSION

Most of the children were well nourished while others are stunted, underweight and wasted. Socioeconomic status of household had significant role in nutritional status of children. However, under nutrition is a still problem among children of two to five years of age in ECDC Pokhara Sub- Metropolitan City, Kaski.. These findings are of great importance because they demand potential actions that can be used to improve the nutritional status of children. Immediate interventions targeted to child centers, management of acute malnutrition, education

on nutrition in the centre and mothers might be the appropriate measures to manage under weight and wasting among children.

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