

Weight for Height of Children in Nepal

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Abstract

Health is more important for the physical and mental growth and development of children. The children under five years are considered as a critical stage for their future development. Food plays vital role in development of children health. In this relation, the study has explored and analysed weight for height of children of 3-5 years with reference to age and gender. The study was conducted in rural area of Makawanpur and Chitawan districts of Nepal among the 1250 samples. The study found that in total, 4.3% children were in sever/worst malnourished (-3SD) of weight for height. Similarly, 8.7% children were in moderate malnourished (-2SD), and 26.9% were in mild malnourished (-1SD). The study found that there was very slightly different in nutritional status of Chepang and non Chepang children.

Keywords: Height, Mid-Upper Arms Circumference (MUAC), Malnutrition, Under-Nutrition, Weight.

1. Introduction

Child growth is dependent on the weight for height. If weight for height is not according to children they are called under-nutrition or malnutrition. If a child has a chronic nutritional deficiencies and frequent bouts of illness in early life is best indicated by the infant's growth in length and the child's growth in height. Stunted is the cause of day to day nutritional deficiencies. They may not gain height in later age; those who live in developing countries (GoN, MoHP, DoHS, 2010). While a deficit in height i.e. stunting is difficult to correct, underweight can be recovered if nutrition and health is improved later in childhood. If the compromised of height at age is covered at the age of four to five, it masks the imbalance of nutrition during pregnancy period. (UNICEF, 2009). Childhood malnutrition is one of the leading causes of morbidity and mortality. It is a complicating factor for other illnesses. The situation of child malnutrition in Nepal is very high due to the cultural, social, economic, educational and political structure of Nepal (Chapagain, et al., 2004). Stunting, underweight and wasting are more common in Mid and Far-West Hills, and Mountain areas than other parts of the country. Approximately 50% children in Nepal are undernourished out of which 49% are stunting, 39% are underweight and 12% are wasting (Sharma, 2012). The immediate implication of malnutrition is weight loss and faltering growth, as well as increased susceptibility to disease. The long term effect of malnutrition or stunting has intergenerational

implication as well.

Bhattarai and colleagues(2012) explored that regarding children, two third of male and 50% female were malnourished. Similarly, 51.2% of male and 28% of female were found stunted indicating chronic malnutrition and 39% of male and 42% of female were found suffering Chronic Energy Deficiency (Thinness) while 3% male had class-I obesity and they were overweight. Almost all of the children were forced to the moderate work, due to cultural impact, lack of awareness and social bad impact. “Adult man, women and children from 13 months to 5 years obtained total energy from their daily food” (Bhattarai, Rai, & Rai, 2012, p. 222).

There are different causes of under-nutrition. They are economical, cultural, environmental, lack of awareness, etc. To come out of these different causes food security policy act is needed. However, “in Nepal, a separate policy for food safety and quality doesn’t exist. How as expects of food safety and quality have been reflected in other policy and strategies such as Nepal Plan of Action on Nutrition 1998, Multi-sectorial Nutritional Plan 2013 have stressed the impotence of food safety and quality. Food safety and quality policy has been drafted and yet to be approved by the Government of Nepal.” (Wasti & Purna, 2013, p. 8).

2. Materials & Method

"A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure"(Kothari, 2009). A research design provides the framework for the collection and analysis of data. This research was an explorative based on mixed method. Through such research we can analyse the various factors which motivate people to behave in particular manner or which make people like or dislike in food intake in Chepang community of Chitawan and Makawanpur districts of Nepal. This study was non-experimental cross sectional.

Primary data were collected by using the structured questionnaires and focus group discussions. Simple frequency distribution was applied to identify the nutrition status of 3-5 years children. Comparative study was conducted between the Chepang and Non-Chepang communities. As well as through FGDs qualitative data were collected and narrated.

Quantitative data, cross-sectional survey method has been used. A well-structured questionnaire and measurement of weight and height were used to determine the nutritional status of children of socio-economic, environmental, demographic and household deprivation on nutritional status of the 3-5 years children in rural areas of Chitawan and Makawanpur districts in Chepang communities. It was compared with Brahman/Chhetri of 3-5 years children. Census method was used for questionnaire survey from Chepang population 3-5 year children household for data collection. The key informants were 3-5 years children households.

Quantitative data were gathered by structured questions containing height, weight and mid-upper arms circumference (MUAC) measurement. The anthropometric measure as well as Department of Health and WHO standards were used for the determination of nutritional status of 3-5 years children. Standard deviation of score (Z-score) for weight-for-age (WAZ), height-for-age (HAZ) and weight-for-height (WHZ) were calculated.

3. Objectives of the Research

The main objective of this study is to explore and analyse weight for height of children of 3-5 years with reference to age and gender.

4. Result & Discussion

4.1 Sex-Wise No. of Children in Family

The collected data show that 49.3% boys and 50.7% girls were found. Among them, 49.9% non-Chepang and 48.8% Chepang boys were reported.

Table 1: Sex-wise no. of children in family

District	Ethnicity		Male	Female	Total
Makawanpur	Non-Chepang	#	158	155	313
		%	50.5	49.5	100
	Chepang	#	123	152	275
		%	44.7	55.3	100
	Total	#	281	307	588
		%	47.8	52.2	100
Chitawan	Non-Chepang	#	97	101	198
		%	49.0	51.0	100
	Chepang	#	238	226	464
		%	51.3	48.7	100
	Total	#	335	327	662
		%	50.6	49.4	100
Total	Non-Chepang	#	255	256	511
		%	49.9	50.1	100
	Chepang	#	361	378	739
		%	48.8	51.2	100
	Total	#	616	634	1250
		%	49.3	50.7	100

The above table shows that 50.5% non-Chepang and 44.7% Chepang were boys from Makawanpur district. Similarly, from Chitawan district, 49% non-Chepang and 51.3% Chepang were boys. District-wise, boys' participation was higher from Chitawan district whereas girls were higher from Makawanpur district.

4.2 Age of Children (In Months)

The study was focused among the 3-5 years (36-60 months) children. Among them, exact age of children was collected. Age was calculated in months. In total, 24.9% children were of 36 months, 16.6% were between 37-41 months, 7.8% were between 42-46 months, 22.9% were between 47-51 months, 5% were between 52-56 months, and 22.9% were between 57-60 months. Comparatively, majority children were of 36 months.

Table 2: Age of children (in months)

District	Ethnicity		36	37-41	42-46	47-51	52-56	57-60	Total
Makawanpur	Non-Chepang	#	110	11	7	110	4	71	313
		%	35.1	3.5	2.2	35.1	1.3	22.7	100
	Chepang	#	113	12	17	64	15	54	275
		%	41.1	4.4	6.2	23.3	5.5	19.6	100
	Total	#	223	23	24	174	19	125	588
		%	37.9	3.9	4.1	29.6	3.2	21.3	100
Chitawan	Non-Chepang	#	21	52	34	25	19	47	198
		%	10.6	26.3	17.2	12.6	9.6	23.7	100
	Chepang	#	67	133	39	87	24	114	464
		%	14.4	28.7	8.4	18.8	5.2	24.6	100

	Total	#	88	185	73	112	43	161	662
		%	13.3	27.9	11.0	16.9	6.5	24.3	100
Total	Non-Chepang	#	131	63	41	135	23	118	511
		%	25.6	12.3	8.0	26.4	4.5	23.1	100
	Chepang	#	180	145	56	151	39	168	739
		%	24.4	19.6	7.6	20.4	5.3	22.7	100
	Total	#	311	208	97	286	62	286	1250
		%	24.9	16.6	7.8	22.9	5.0	22.9	100

The above table shows that 24.9% children were of 36 months in Makawanpur district whereas majority of children were between 37-41 months in Chitawan district. Ethnicity wise also, 41.1% Chepang children were of 36 months and 35.1% non-Chepang children were 36 months in Makawanpur district. Similarly, in Chitawan district, majority 28.7% Chepang children and 26.3% non-Chepang were between 37- 41 months.

4.3 Total Family Members in a Family

50.5% respondents reported that they had less than 5 members in a family, 34.6% had 5-8 members, 12.8% had 8-11 members, 1.7% had 11-14 and 0.4% had more than 14 members in a family.

Table 3: Total family members in a family

District	Ethnicity		Less than 5	5-8	8-11	11-14	More than 14	Total
Makawanpur	Non-Chepang	#	193	96	22	1	1	313
		%	61.7	30.7	7.0	0.3	0.3	100
	Chepang	#	104	125	37	7	2	275
		%	37.8	45.5	13.5	2.5	0.7	100
	Total	#	297	221	59	8	3	588
		%	50.5	37.6	10.0	1.4	0.5	100
Chitawan	Non-Chepang	#	130	49	19	-	-	198
		%	65.7	24.7	9.6	-	-	100
	Chepang	#	204	163	82	13	2	464
		%	44.0	35.1	17.7	2.8	0.4	100
	Total	#	334	212	101	13	2	662
		%	50.5	32.0	15.3	2.0	0.3	100
Total	Non-Chepang	#	323	145	41	1	1	511
		%	63.2	28.4	8.0	0.2	0.2	100
	Chepang	#	308	288	119	20	4	739
		%	41.7	39.0	16.1	2.7	0.5	100
	Total	#	631	433	160	21	5	1250
		%	50.5	34.6	12.8	1.7	0.4	100

The above table shows that 50.5% family had less than 5 members in both Makawanpur and Chitawan districts. Similarly, ethnicity wise, 37.8% Chepang in comparison with 61.7% non-Chepang had less than 5 members whereas 0.7% Chepang and 0.3% non-Chepang had more than 14 members in a family in Makawanpur district. Similarly, 44% Chepang in comparison with 65.7% non-Chepang had less than 5 members whereas 0.4%

Chepang had more than 14 members in a family in Chitawan district. Number of family members was found high in Chepang in both districts as comparison with other non-Chepang communities.

4.4 Weight for Height of Children

The weight for height of children was identified on the basis of nutritional measurement scale developed by the World Health Organization (WHO). The Table 4 shows that in total, 4.3% children were in sever/worst malnourished (-3SD) of weight for height. Similarly, 8.7% children were in moderate malnourished (-2SD), and 26.9% were in mild malnourished (-1SD).

Table 4: Weight for height of children

Wfh	Non-Chepang		Chepang		Total
	#	%	#	%	
-1SD	142	42.3	194	57.7	336
-2SD	35	32.1	74	67.9	109
-3SD	22	41.5	31	58.5	53
Median	94	41	135	59	229
1SD	98	49.7	99	50.3	197
2SD	37	49.3	38	50.7	75
3SD	64	49	67	51	131
NA	19	16.2	98	83.8	117
Total	511	41	736	59	1247

The results support the research finding of baseline survey report of Tanahu that "27% children were suffering from severe and moderate undernutrition and 7% were having severe and moderate wasting indicating acute malnutrition"(United Mission to Nepal, 2003, p. vi).

5. Conclusion

The study has focused to explore the weight for height of Chepang and non-Chepang children of Makawanpur and Chitawan districts of Nepal in relation to malnutrition status as defined by WHO guideline. The study found that there was very slightly different in nutritional status of Chepang and non Chepang children. In total, 4.3% children were in sever/worst malnourished (-3SD) of weight for height. Similarly, 8.7% children were in moderate malnourished (-2SD), and 26.9% were in mild malnourished (-1SD).The findings of this study is similar to the research finding of baseline survey report of Tanahu district of Nepal.The study strongly recommend to study on the same issue in other districts and other age groups too.

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