Assessment of Nutritional Status of 6 - 59 Months Children In Musahar Community of Ramdhuni Municipality, Sunsari

SHIKHAR DAHAL, MAN KUMAR TAMANG

Department of Nutrition and Dietetics, Central Campus of Technology, Dharan, Sunsari

Introduction

Among diverse ethnic and cultural groups existing in Nepal, *Musahar* is one of the socially and economically marginalized community residing in Terai region. *Musahar* community falls under the category of *Dalit i.e.* untouchable. The tribe members have no land registered under their name. Their main livelihood option working as the hired laborers. Because of poor economic status, they eventually suffer from food insecurity and extreme nutritional problems. Considering the low progress of health and socio-economic indicators, children of this community were selected for the study.
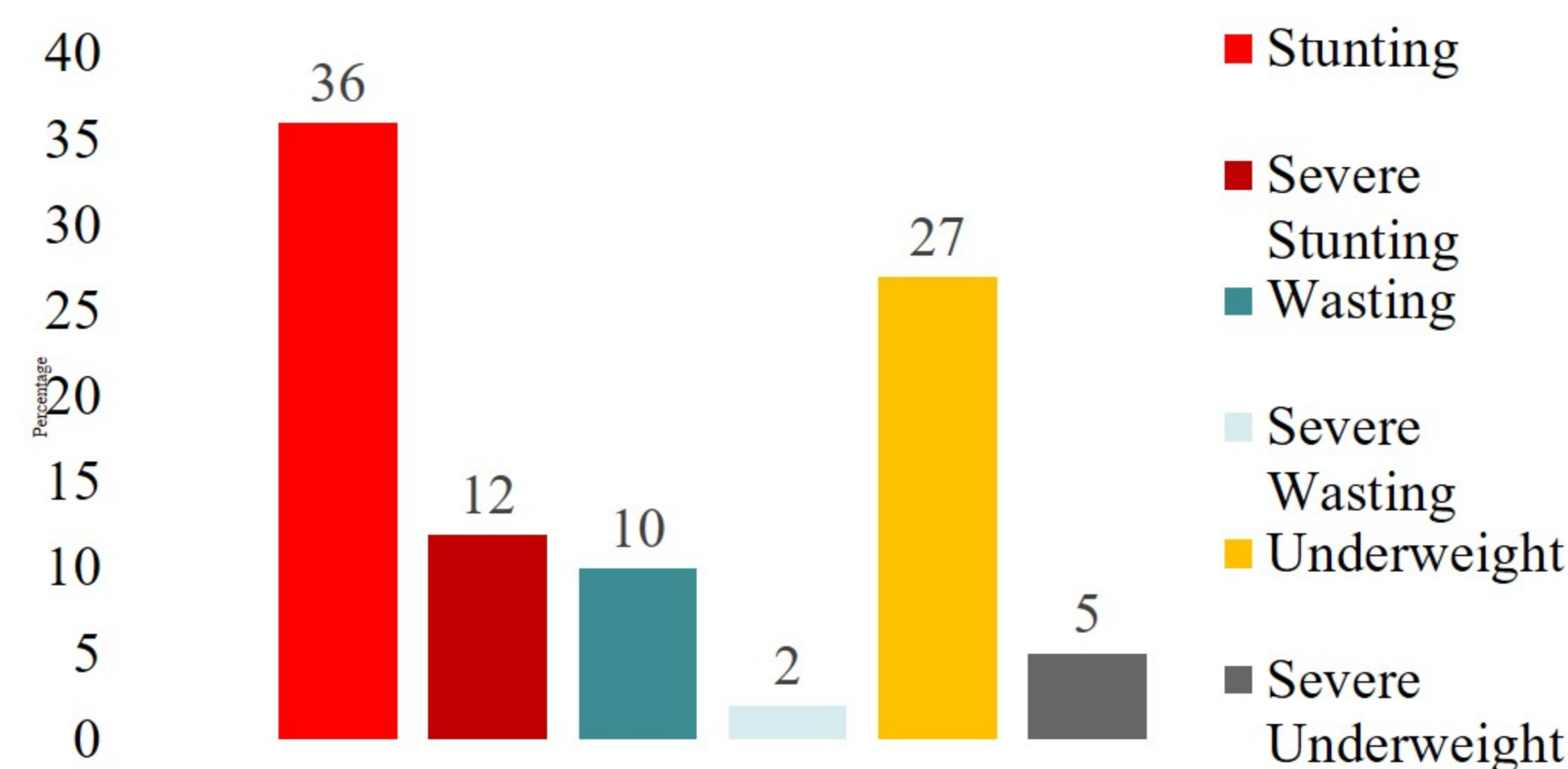

Fig:1 Prevalence of malnutrition in Nepal (NDHS 2016)

Objective of study

The objectives of this study is to assess the nutritional status of 6-59 months children of *Musahar* community in Ramdhuni municipality, Sunsari district and to find out the factors associated with nutritional status. We hypothesize that the target population have high prevalence of under-nutrition.

Methods

- A community based cross-sectional study was conducted in Ramdhuni municipality, Sunsari district.
- Anthropometric measurements (height, weight, MUAC) were used to determine if the children were wasted, stunted or underweight
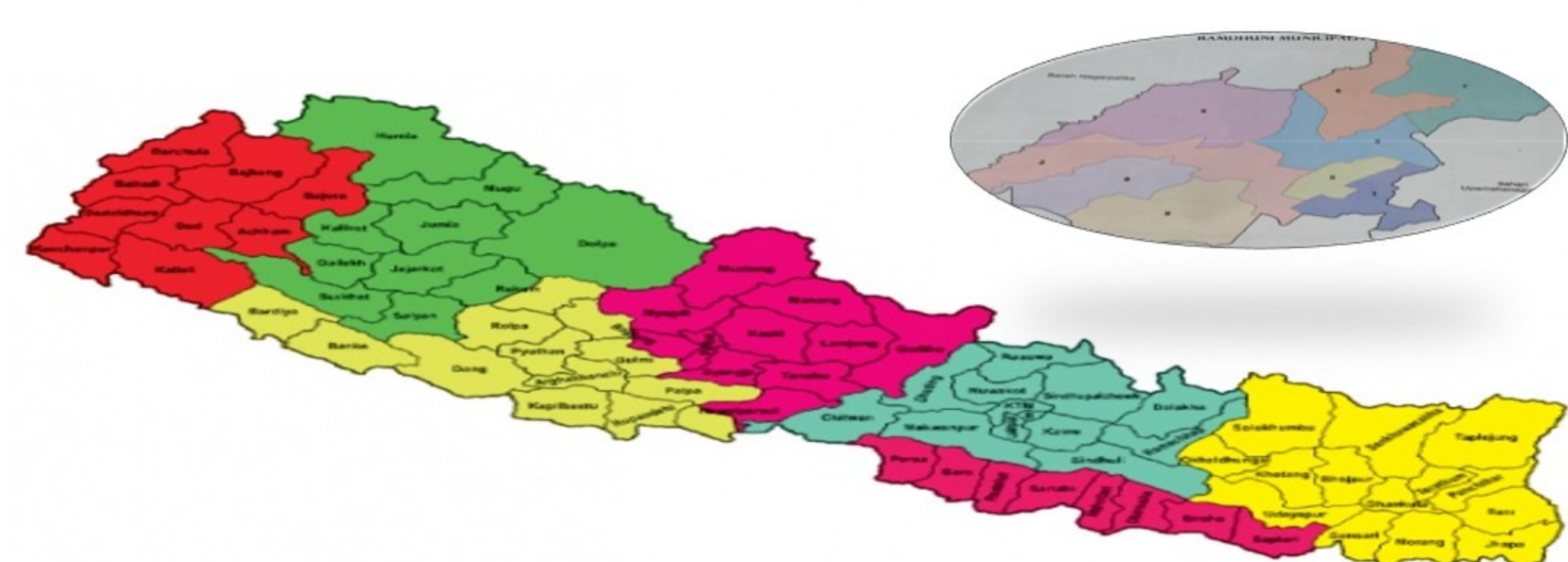

Fig:2 Map of Nepal and Ramdhuni municipality

Sample size

The sample size (N) was determined using a single proportion formula, assuming prevalence (P) of 50%, 95% confidence interval (CI), 8 % precision and 10% non-response rate. Z-value 1.96 is used at 95% CI and margin of error (d) of 8%.

$N = Z^2 P (1-P)/d^2$

$= (1.96)^2 * 0.5 * 0.5/(0.08)^2$

$= 150$

Now, adding non-response rate of 10%, the final sample size is 165.

Statistical Analysis

- WHO Anthro® version 3.2.2 and SPSS® version 20.0 were used for statistical analysis. MS office 2010 package (excel, word) for data entry, arrangement and finalization. Chi-square test was used to analyze the factors associated with malnutrition.

Results

- Considering total population (N=165), 50.9% (84) were male and 49.1% (81) were female children.
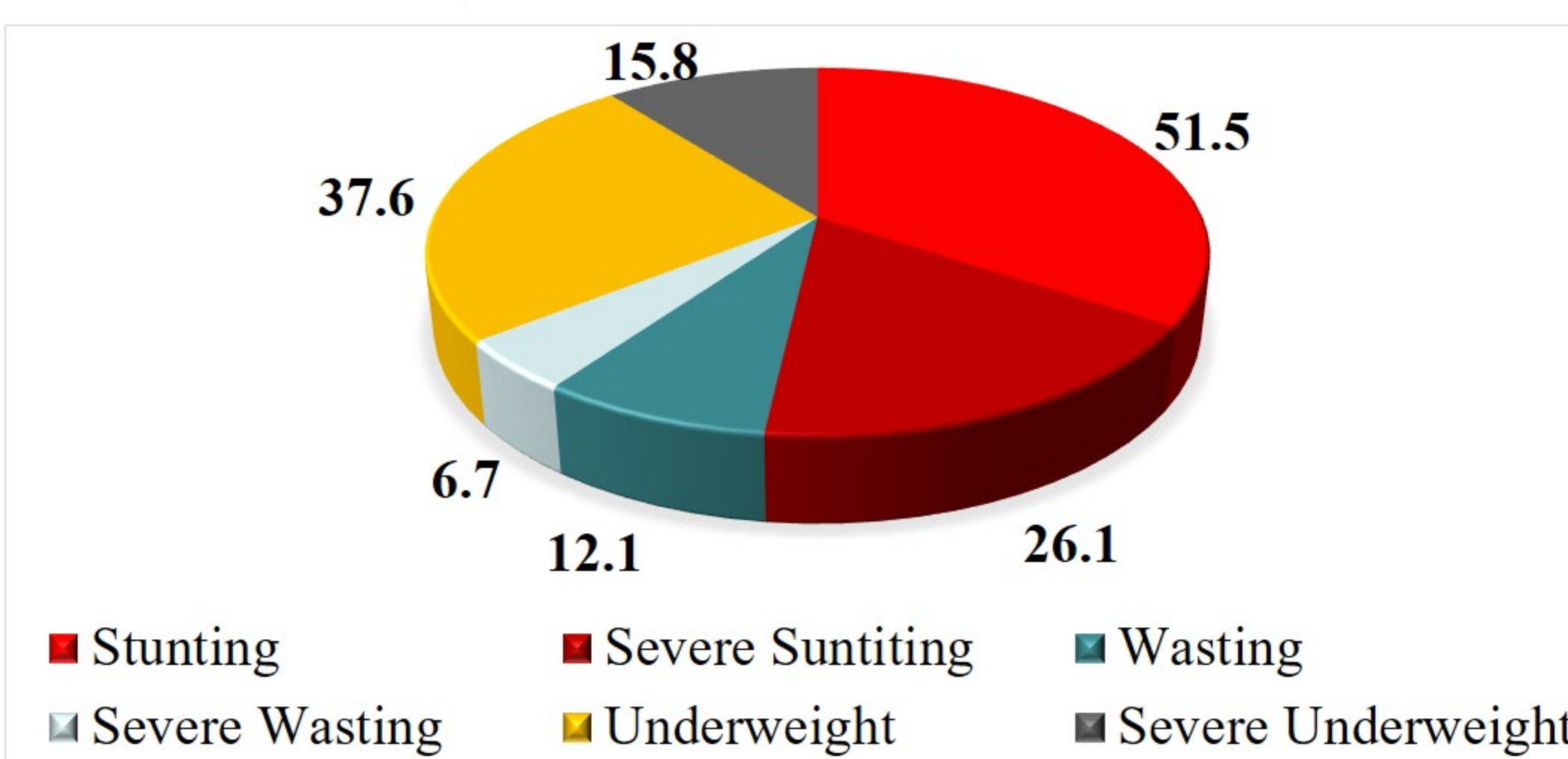

Fig:3 Prevalence of malnutrition in *Musahar* children

- Prevalence of Wasting and Underweight was found to be highest in girls whereas Stunting was highest in boys.
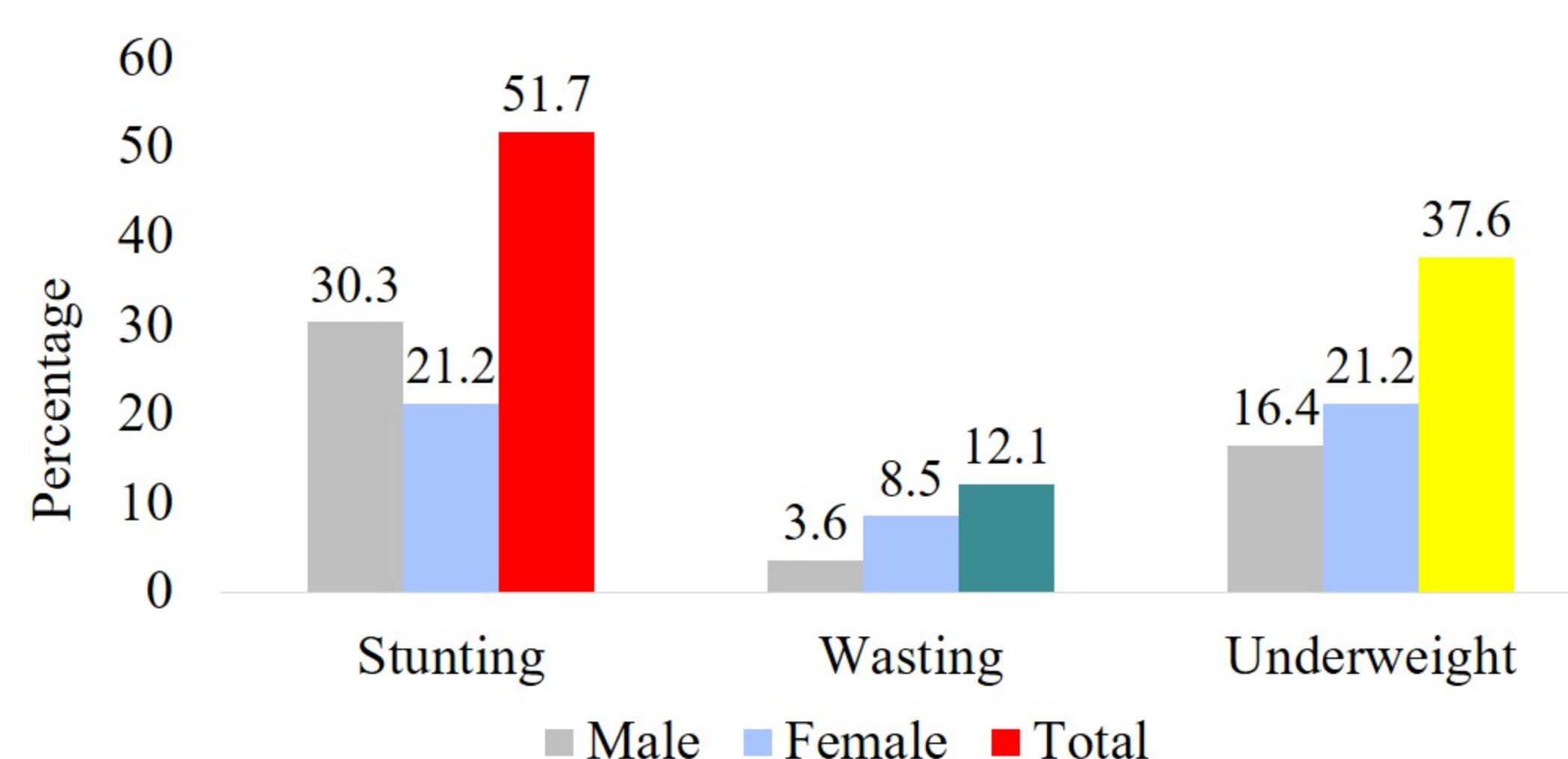

Fig:4 Gender wise comparison of malnutrition

Factors associated with stunting

The factors, gender of child (p=0.036), MNP intake by child (p=0.035), source of drinking water (p=0.040) and Toilet use (p=0.005) had significant association with stunting.

Factors		HFA		χ^2	P-value
		Stunted	Normal		
Gender	Male	50 (59.5%)	34 (40.5%)	4.394	0.036*
	Female	35 (43.2%)	46 (56.8%)		
MNP intake	Yes	36 (43.4%)	47 (56.6%)	4.432	0.035*
	No	49 (59.8%)	33 (40.2%)		
Source of drinking water	Tap water	14 (73.7%)	5 (26.3%)	4.225	0.040*
	Tube well	71 (48.6%)	75 (51.4%)		
Toilet use	Yes	59 (45.7%)	70 (54.3%)	7.905	0.005*
	No	26 (72.2%)	10 (27.8%)		

Fig:5 Factors associated with stunting

Factors associated with wasting

The factors gender (p=0.046), family size (p=0.034), mothers age at marriage (p=0.003) and frequency of cereal intake per week (p=0.003) and frequency of vegetable intake per week (0.000) by child was found to be significantly association with wasting.

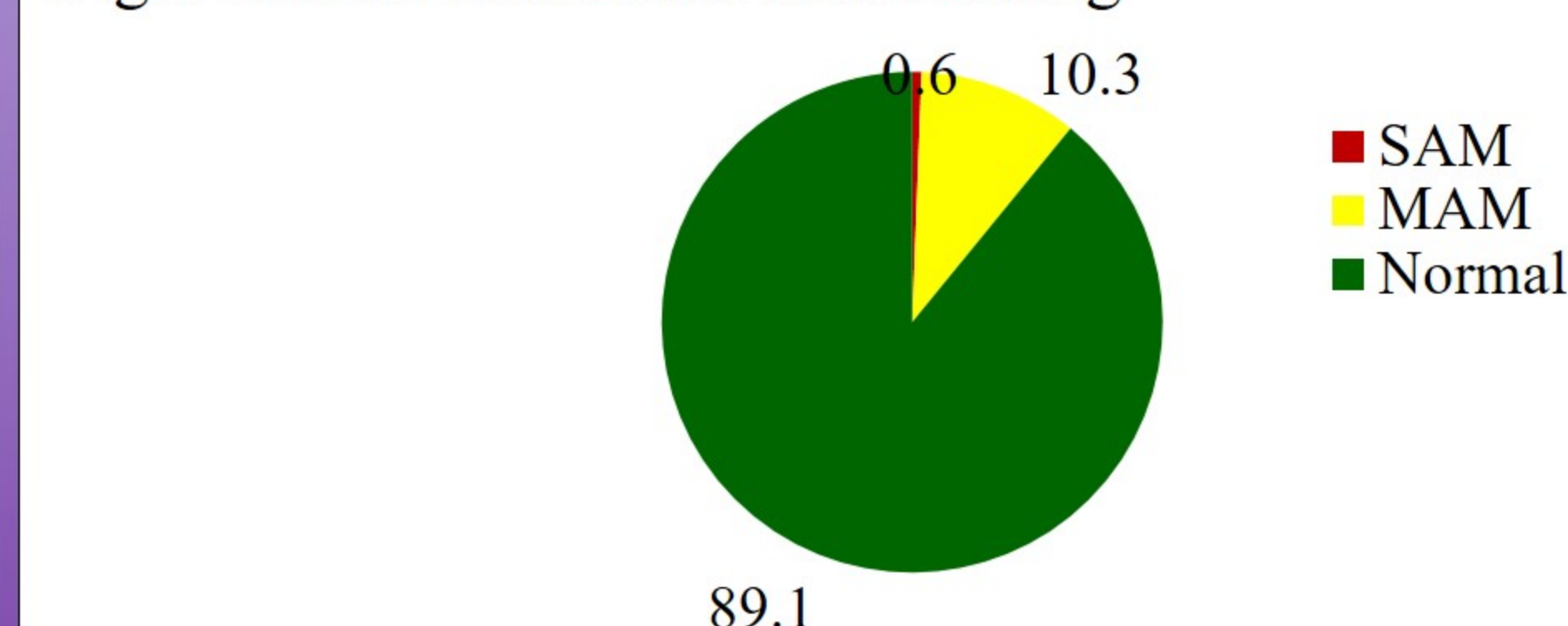| Factors		HFA		χ^2	P-value
		Wasted	Normal		
Gender	Male	6 (7.1%)	78 (92.9%)	3.981	0.046*
	Female	14 (17.3%)	67 (82.7%)		
Family size	<=5	9 (8.3%)	100 (91.7%)	0.044	0.034*
	>5	11 (19.6%)	45 (80.4%)		
Mother's age at marriage	<=20	14 (9.5%)	133 (90.5%)	8.534	0.003*
	>20	6 (33.3%)	12 (66.7%)		
Cereal intake by child per week	<2 times	2 (66.7%)	1 (33.3%)	8.534	0.003*
	>=4 times	18 (11.1%)	144 (88.9%)		
Vegetable intake by child per week	<2 times	4 (57.1%)	3 (42.9%)	18.666	0.000*
	2-4 times	5 (25%)	15 (75%)		
	>4 times	11 (8%)	127 (92.0%)		

Fig:6 Factors associated with wasting

Fig:7 Distribution of malnutrition in *Musahar* children based on MUAC measurement

Key Findings

- Annual income of 77.6% of families lie below 1 lakh and 22.4% of families lie between 1-3 lakh.
- Regarding mothers level of education, 32.7% mothers were illiterate and 89.1% mothers get married at age below or equal to 20 year.
- The prevalence of stunting, wasting and underweight were 51.5%, 12.1% and 37.6% respectively.
- Based on MUAC measurement, 0.6% were severely malnourished, 10.3% moderately malnourished and 89.1% were normal.
- Stunting was found highest in the age group between 24-35 months, wasting in 12-23 months while underweight was highest in 24-35 months age group children.
- The factors, gender of child (p=0.036), MNP intake by child (p=0.035), source of drinking water (p=0.040) and Toilet use (p=0.005) had significant association with stunting.
- Gender of child (p=0.046), family size (p=0.034), mothers age at marriage (p=0.003) and frequency of cereal intake (p=0.003) and vegetable intake (0.000) per week by child was found to be significantly association with wasting
- No any factors were found to be significantly associated with Underweight in the study.

Conclusions

Musahar community is still lagging behind quality education, health facilities and socio-economic condition. The results of this study indicates that under nutrition is still a serious problem among under-five children in underprivileged community. This study revealed that prevalence of stunting, wasting and underweight was higher than NDHS (2016) result. There is a need for nutritional, health and educational intervention among the community to uplift their socio-economic status and control major health and nutrition issues.

References

MoH. (2016). Nepal demographic and health survey [Report]. Ministry of Health, New ERA, Nepal and ICF International Calverton Maryland, USA. Kathmandu, Nepal. Retrieved from https://www.dhsprogram.com/pubs/pdf/fr336/fr336.pdf.

Mahato, R. N. (2007). Socio-Economic factors affecting the health status of Musahar women. Journal of Nepal Health and Research Council.

Yadav, R. (2016). Comparison of nutritional status and dietary habits of primary school children (Musahar and non-Musahar) of Aurahi, Mahottari district, Nepal. Masters Thesis. Chonbuk National University Graduate School, Republic of Korea