

Nutritional Status among Children Aged 6-23 Months and Associated Factors in Dalits and Non-Dalits of Dhanusha District, Nepal: A Cross-Sectional Comparative Study

Sah Anil Kumar¹, Paudel Rajan², Devkota Madhu Dixit², Sigdel Ramesh²

¹Maharajgunj Medical Campus, Tribhuvan University Kathmandu, Nepal,

²Department of Community Medicine and Public Health, Maharajgunj Medical Campus, Tribhuvan University

Introduction

Nutrition is an underpinning of child survival, growth and development¹. Undernutrition increases the risk of child morbidity and mortality². Globally, Undernutrition represents 45% of all death³. It is one of the most important public health challenges. Nutritional status results from poor quality of diets, health and environment and behavior factors⁴. The first two years of life are essential for optimum nutrition for child development⁵. In this region, stunting had increased from 40.5% to 41.6% from 2011 to 2014^{6,7}.

Undernutrition is higher among 18-23 months than national level⁶. Nepal has made progress in reducing under nutrition; however, a high proportion of infant and young children remain affected, which is a serious concern¹. Illiteracy, lowest wealth quintile and low ante natal visits are higher in Dalits than Non-Dalits. Dalits groups of Terai regions belong to schedule caste, considered untouchable and are poorest in the country⁸. Undernutrition is preventable and improving nutrition status is a priority programme of government. This study is important to give a scenario of nutritional status and its associated factors. Furthermore it contributes in documentation of nutritional status and it could be a baseline for nutritional intervention.

Objective

General objective:

To identify nutritional status and its associated factors among children 6-23 months in Dalits and Non-Dalits of Dhanusha district, Nepal

Specific Objective:

- To find out nutritional status (stunting, underweight and wasting) among children aged 6-23 months in Dalits and Non-Dalits of Dhanusha district, Nepal
- To examine the factors associated with stunting, underweight and wasting among children aged 6-23 months in Dalits and Non-Dalits of Dhanusha district, Nepal

Methodology

Study method: Quantitative.

Study design: Cross-sectional comparative.

Study Population/Sampling Frame: The study populations were children aged 6-23 months and their mothers of Dalits and Non- Dalits of Dhanusha district.

Study Site and its justification: Dhanusha District was selected as a study district. Dhanusha district has lower human development index⁹.

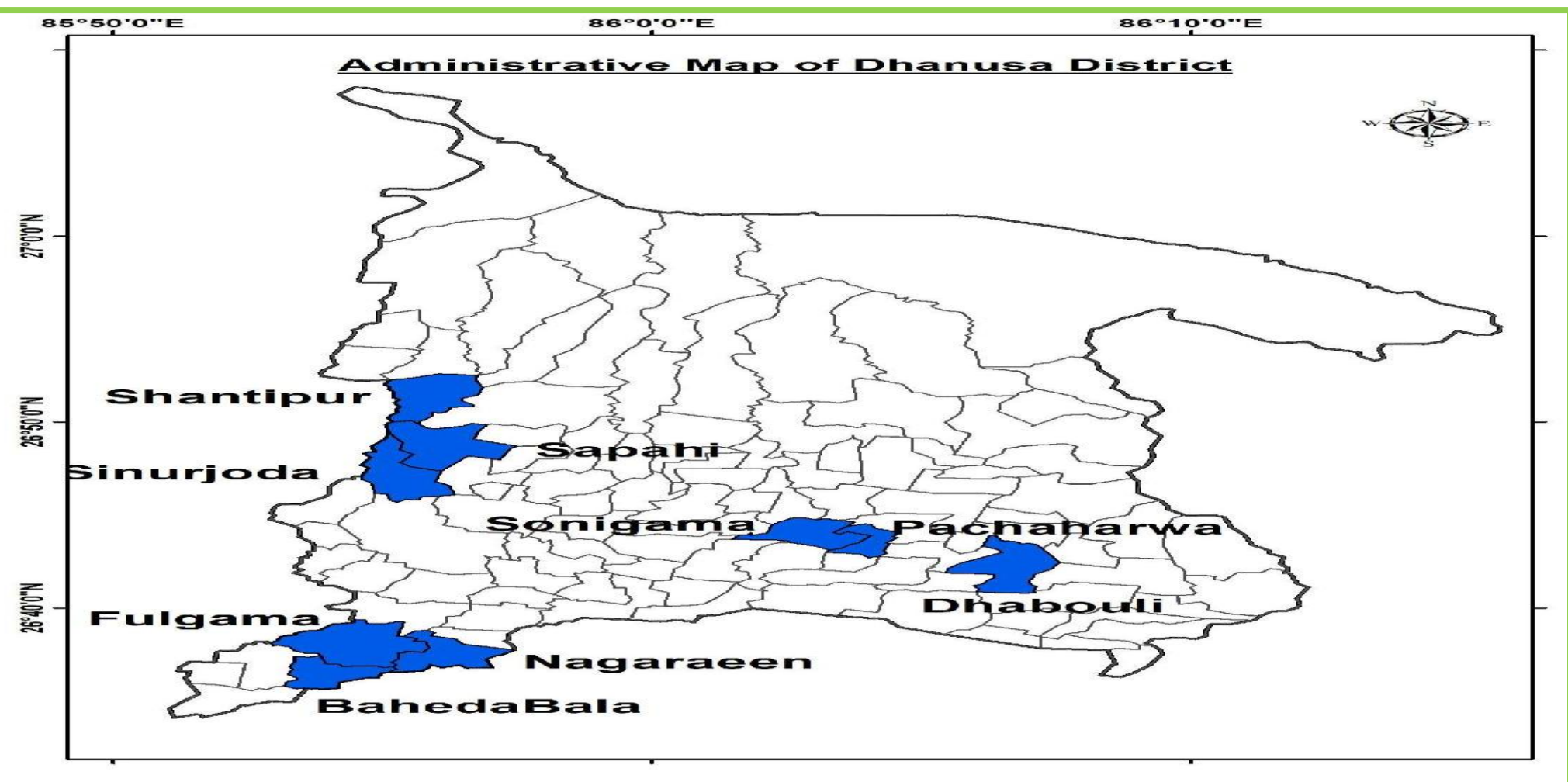


Figure1: Map of study site

Sample size: Total sample was 599 where 299 from Dalits and 300 from Non-Dalits

Sampling Techniques: Multi-stage proportionate simple random sampling technique was used.

Inclusion and exclusion criteria:

Inclusion criteria: Children aged 6-23months and their mothers were included in the study

Exclusion criteria: Severely ill and mentally disorder mothers and their children were excluded

Data collection Tools and Techniques:

Table 2: Data collection tools and techniques		
S.N.	Data collection Tools	Data collection Techniques
1	Structured Questionnaire (Adopted and modified -NDHS- 2011 tools)	Face to face interview
2	Anthropometric Tools: <ul style="list-style-type: none">Measuring board/InfantometerSalter/bathroom scale	Anthropometric measurement

Validity and reliability

- Standard NDHS adopted and modified (Pre-tested) tool was be used
- Weighing machine was calibrated frequently for its reliability every day before data collection
- Average was taken during length measure

Limitation of the study

The feeding practices were not observed and information was depending on the responses of the mothers which could be affected by social desirability bias.

Ethical consideration

Approval was taken from IRC (IOM), acceptance was taken from DPHO Dhanusha.

The purpose of the study was shared to each respondent and informed written consent had taken and followed guideline of NHRC.

Result

1. Descriptive analysis: Demographic and nutrition status related characteristics of the study population

Table 3: Demographic and nutrition status related characteristics of the study population				
Characteristics	Dalits		Non-Dalits	
	Number(n)	Percentage (%)	Number(n)	Percentage (%)
Age of the index child (in months)				
6-8	30	10.0	37	12.3
9-11	51	17.1	46	15.3
12-23	218	72.9	217	72.3
Mean age \pm SD		14.51 \pm 4.68		14.42 \pm 4.56
Stunting				
Yes(<-2SD)	149	49.9	117	39.0
No	150	51.1	183	61.0
Underweight				
Yes(<-2SD)	104	34.8	75	25.0
No	195	65.2	225	75.0
Wasting				
Yes (<-2SD)	40	13.4	26	8.7
No	259	86.6	274	91.3

2. Inferential analysis:

2.1 Stunting

Table 4: Inferential analysis of stunting				
Characteristics	Dalits		Non-Dalits	
	β	AOR (95 % of CI)	β	AOR (95 % of CI)
Age of child				
12-23 months		1		1
6-11 months	0.118	1.13(0.59-2.15)	-0.69	0.50(0.28-0.89)*
Knowledge on child feeding				
Yes		1		1
No	0.652	1.92(1.08-3.40)*	-0.266	0.77(0.46-1.28)
Family types				
Joint		1		1
Single	0.67	1.96(1.04-3.70)*	0.548	1.73(0.84-3.56)
Adjusted variables	Sex of child, Age of child, Knowledge on child feeding ¹ , Family types ¹ and mother education			

2.2 Underweight

Table 5: Inferential analysis of underweight				
Characteristics	Dalits		Non-Dalits	
	β	AOR (95 % of CI)	β	AOR (95 % of CI)
Media Exposure				
Yes		1		1
No	0.591	1.81(1.04-3.14)*	1.759	5.81(1.56-21.60)*
Knowledge on child feeding				
Yes		1		
No	0.700	2.01(1.15-3.54)*		
ANC visit				
Yes				1
No			1.197	3.31(1.06-10.33)*
Adjusted variables	Age of child, Sex of child, Media exposure ¹ , Household ownership, Family types, MDD, MAD and Knowledge on child feeding ¹			
	Age of child, Sex of child, Media exposure ¹ , Duration of food sufficiency, ANC visit ¹ , and Birth interval			

2.3 Wasting

Table 6: Inferential analysis of wasting				
Characteristics	Dalits		Non-Dalits	
	β	AOR (95 % of CI)	β	AOR (95 % of CI)
Birth interval				
Above 2 years				1
Up to 2 years			-1.377	0.25(0.07-0.86)*
Minimum meal frequency				
Met		1		
Not met	1.106	3.02(1.45-6.30)*		
Adjusted variable	Sex of child, Age of child, Mother occupation, and Minimum meal frequency ¹			
	Sex of child, Age of child, Mother occupation and Birth interval ¹			

*significant/¹significant

Conclusions

- About half of children were stunted in Dalits but it was about **one-third in Non-Dalits**. Stunting was found significantly associated with **knowledge on child feeding and family type among Dalits** while **age of child among Non-Dalits**.
- About one third children were underweight in Dalits while **one-fourth in Non-Dalits**. Underweight was found significantly associated with **media exposure and knowledge on child feeding in Dalits** while **media exposure and ANC Visit in Non-Dalits**.
- More than one-tenth children were wasted in Dalits while it was **low in Non-Dalits**. Wasting was found significantly associated with **MMF among Dalits** while **birth interval in Non-Dalits**.

Recommendation

Awareness raising program should be given among children of mothers at community level

Community based health intervention programme should be given for reducing under nutrition

Acknowledgements

- Study participants, enumerators, Female Community Health Volunteers, Village Development Committee, Local Health facilities, District Public Health Office-Dhanusha,
- Families and relatives
- Faculties of Department to Community Medicine and Public Health and friends
- Special thanks to Ashok Pandey, Nepal Health Research Council

References

- Ministry of Health and Population. Government of Nepal. Strategy for Infant and Young Child Feeding. Department of Health Services, editor: Child Health Division; 2014. p. 1-57.
- Crum J, Subedi GR, Mason J, Mebrahtu S, 2013. Infant and Young Child Feeding Practices as Associated with Child Nutrition Status in Nepal: Analysis of the Nepal Demographic and Health Surveys 2011.
- Bhutta ZA, Das JK, Rizvi A, Gaffey MF, Walker N, Horton S, et al. Evidence based interventions for improvement of maternal and child nutrition: what can be done and at what cost? The Lancet. 2013;382(9890):452-77.
- International Food Policy Research Institute, 2016. Global Nutrition Report 2016: From Promise to Impact: Ending Malnutrition by 2030. Washington, DC.
- Infant and Young Child Feeding [Internet]. 2016 [cited 27-11- 2018]. Available from:
- Ministry of Health and Population (MOHP) (Nepal). New ERA and ICF International Inc. 2012. Nepal Demographic and Health Survey 2011. Kathmandu, Nepal: Ministry of Health and Population, New ERA, and ICF International, Calverton, Maryland.; 2011.
- Central Bureau of Statistics. Government of Nepal. Multiple Indicator Cluster Survey. Kathmandu, Nepal: 2014.
- Pandey JP, Dhakal MR, Karki S, Poudel P, Pradhan MS. Maternal and Child Health in Nepal: The Effects of Caste, Ethnicity, and Regional Identity: Further analysis of the 2011 Nepal Demographic and Health Survey. Calverton, Maryland, USA: Nepal Ministry of Health and Population, New ERA, and ICF International.; 2013. p. 1-58.
- National Planning Commission GoN, UNDP. Nepal Human Development Report 2014.
- Charan J, Biswas T. How to calculate sample size for different study designs in medical research?. Indian journal of psychological medicine. 2013 Apr;35(2):121.