

ORIGINAL RESEARCH ARTICLE

FEEDING PRACTICES IN UNDER FIVE YEAR CHILDREN IN HILLY REGION OF NEPAL

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ABSTRACT

Infant and young child feeding is critical for child health and survival. Appropriate feeding is critical for the achievement of healthy growth and development and mere survival of young children. A cross-sectional study was conducted in selected Village Development Committees of Lamjung, Tanahun and Gorkha Districts using semi-structured interview schedule. A random sample of 1410 married women who gave birth in the last two years preceding the survey were included in the study. Descriptive analysis was carried out to identify exclusive breast feeding (EBF) and complementary feeding practices in the hilly region of Nepal. A total of 91% of the mothers fed colostrum and a total of 28.2% mothers introduced complementary feeding at 6 months of age. This study reveals that complementary feeding practices and exclusive breast feeding practices are not really satisfactory in Lamjung, Tanahun and Gorkha. There is an urgent need to improve the feeding practices in accordance with the standard recommendation among children of these hilly regions. More focus should be put on community based programmes as well as on monitoring of the implementation of timely and adequate feeding practices.

Key Words: Children, Feeding Practices, Nepal

INTRODUCTION

Infant and young child feeding is critical for child health and survival. Appropriate feeding is critical for the achievement of healthy growth and development and mere survival of young children. World Health Organization recommends that infant start breastfeeding within one hour of life, and be exclusively breastfed for six months, with timely introduction of adequate, safe and appropriate complementary foods while continuing breastfeeding for up to two years of age or beyond.¹ Exclusive breastfeeding means that the infant receives only breast milk. No other liquids or solids are given, with the exception of oral drops of vitamins, minerals or medicines.² The transition from exclusive breastfeeding to family foods, referred to as complementary feeding, typically covers the period from 6 to 18-24 months of age, and is a very vulnerable period. It is the time when malnutrition starts in many infants, contributing

significantly to the high prevalence of malnutrition in children under five years of age world-wide.³

Exclusive breastfeeding in the first six months of life, is contributing to reducing burden of childhood diseases and mortality.^{4,5}

Exclusive breastfeeding can avert the major causes of neonatal death such as sepsis, acute respiratory tract infections, meningitis, and diarrhea.⁶ Moreover, breastfeeding delays the return of a women's fertility and reduces the risks of postpartum hemorrhage, premenopausal breast cancer, and ovarian cancer.⁷

Exclusive breastfeeding is estimated to prevent approximately 10% of child deaths and also timely initiation of complementary foods to the child helps to reduce the malnutrition and as such plays important role in meeting Nepal's Sustainable Development Goals (SDGs) 3.8 It is important that exclusive breastfeeding until six months of

age and complementary feeding be encouraged and supported by the health sector, families and communities in Nepal. In Nepal, breastfeeding is nearly universal with mean duration of 29 months. Early initiation of breastfeeding is 45% while exclusive breastfeeding rate is 70%. However wide differences in coverage are observed in different regions of the country in relation to mother's education, wealth quintile and ecological variation.⁹ It is evident that improper feeding practices are resulting in impaired growth among infant and young children of Nepal, which will in turn limit child possibility of attaining their full potential later in life.¹⁰

Updated knowledge about Exclusive Breast Feeding and complementary feeding in Nepal could aid in the better design of infant and child nutrition programs. Hence, this study was undertaken to explore the exclusive breast feeding and complementary feeding practices in three hilly districts of Nepal.

METHODOLOGY

Study design and area

A descriptive, cross-sectional and community based study was conducted during 2015 in thirteen Village Development Committees (VDCs) of three hilly districts (Lamjung, Tanahun and Gorkha) of Nepal.

Nepal is divided into three ecological regions (Mountain, Hill and Plain) and 75 districts. Each district is subdivided into municipalities and VDCs; Each VDC and municipality is further divided into smaller administrative units called wards. Lamjung, Tanahun and Gorkha has 56, 37 & 70 VDCs with 2, 5 & 2 municipalities, respectively.^{11, 12} In Nepal, municipalities are considered as urban while VDCs are considered as rural areas.

Selection of participants

The study population was married women who gave birth in the last two years and residing permanently or temporarily in Lamjung, Tanahun and Gorkha districts. Sample size was calculated on the assumption that each household of selected VDCs will have at least a woman who had given birth in the last two years. There were a total of 14108 households (Tanahun; 6916, Lamjung; 2896 and Gorkha; 4296) in the selected VDCs. Ten percent of

the total households from each of the sampled VDC were taken. Thus, sample size was 1410.

The sampling was done in two stages. In the first stage, VDCs and in the second stage women who had delivered within the two years were selected. Using the lottery method, 13 VDCs (4 VDCs in Lamjung, 4 VDCs in Gorkha and 5 VDCs in Tanahun) were selected. The selected VDCs were Duradada, Chandreswor, Jita and Chakratirtha of Lamjung; Finam, Bungkot, Namjung and Taple of Gorkha; and Risti, Kyamin, Symgha, Ghansikuwa and Jamune-Bhanjyng of Tanahun.

For the lottery method, name of all the VDCs of Lamjung, Gorkha and Tanahun district each was written in a separate, uniform-sized paper which was folded and put into a bowl. The papers were thoroughly mixed in the bowl. One by one, four papers were taken out. The bowls with papers were thoroughly shaken every time a paper was taken out.

In Tanahun district, we purposively selected 5 VDCs instead of four as it had more number of population among the selected districts.

In the second stage, the list of the all houses in the each selected VDCs was taken from Village Development Committee office. The sample unit was selected by using systematic random sampling. One household was selected at random from each VDC and then every 10th household (kth item) was sampled. In case the respondent was unavailable or the household did not have women who delivered within two years, then the next nearest household was taken.

Out of the 1410 samples, only those who provided a complete information i.e. 1298 (92%) were included in the final study. The study period was from 22 April to 10 May, 2015.

Data collection and analysis

The data collection tool was a semi-structured interview schedule (prepared in Nepali language on the basis of a review of the relevant literatures) and the data collection method was face-to-face interview. The data was collected by the medical students who underwent 15 days of orientation and training. The questionnaire included information

related to socio-demographic characteristics, maternal and child health, family planning, non-communicable diseases and environment related issues. Pilot-testing was done on 10% (140) of sample size in 6 different VDCs of Chitwan District. The feedbacks from the pilot-testing were incorporated and a revised questionnaire was formulated. Modifications included re-arrangement of questions as well as changes in words and additions/deletions of some answer categories.

The questionnaires were checked for completeness and accuracy of data before feeding data in Epi-data 3.1. Data were entered using Epi-data 3.1 software and analyzed using SPSS 16. The statistical analysis carried out were descriptive (frequencies, and percentages).

Inclusion and exclusion criteria:

Only those women who delivered within last two years or had children of less than 2 years were selected as a respondent. Those married women who were not available in three subsequent visits and/or did not give informed consent were excluded from the study.

Ethical issues:

The Institutional Review Committee of Chitwan Medical College (IRC-CMC) granted an ethical clearance before carrying out this study. Written permission was taken from District Health Office (DHO) of Lamjung, Tanahun and Gorkha. Verbal informed consent was obtained from the women before starting the interview. Confidentiality and privacy was ensured.

RESULT

Table 1: Characteristics of the respondents n=1298

| Characteristics | Number | Percentage |
|-----------------|--------|------------|
| Age of women | | |
| <20 | 79 | 6.1 |
| ≥20 | 1219 | 93.9 |
| Education | | |
| Illiterate | 106 | 8.2 |
| Literate | 108 | 8.3 |
| 1-8 class | 469 | 36.1 |

| | | |
|------------|-----|------|
| 9-10 class | 297 | 22.9 |
| Above SLC | 318 | 24.5 |

Types of Family

| | | |
|---------|-----|------|
| Nuclear | 522 | 40.2 |
| Joint | 776 | 59.8 |

Ethnicity

| | | |
|----------|-----|------|
| Bramin | 349 | 26.9 |
| Chhetri | 235 | 18.1 |
| Janajati | 384 | 29.6 |
| Dalit | 330 | 25.4 |

Occupational Status

| | | |
|------------|------|------|
| Unemployed | 1140 | 87.8 |
| Employed | 158 | 12.2 |

Age at marriage

| | | |
|-----|-----|------|
| <20 | 945 | 72.8 |
| ≥20 | 353 | 27.2 |

Antenatal check up

| | | |
|-----|------|------|
| Yes | 1249 | 96.2 |
| No | 49 | 3.8 |

Age of women at first child delivered

| | | |
|-----|-----|------|
| <20 | 533 | 41.1 |
| ≥20 | 765 | 58.9 |

Problem during Antenatal/Natal/Postnatal period

| | | |
|-----|-----|------|
| Yes | 340 | 26.2 |
| No | 957 | 73.8 |

Types of delivery

| | | |
|---------------|-----|------|
| Home | 340 | 26.2 |
| Institutional | 956 | 73.7 |

Table 1 shows that 91.8% of the mothers were literate, 87.8% were unemployed, 72.8% were married below the age of 20 years and 26.2% delivered their baby in the home premises.

Table 2: Feeding practice among mothers of under 5 year children (n=1298)

| Feeding practices | Frequency | Percentage |
|------------------------------------|-----------|------------|
| Breastfeeding practice (in months) | | |
| < 6 months | 159 | 12.2 |
| upto 11 months | 1047 | 80.7 |
| upto 17 months | 42 | 3.2 |

| | | |
|------------------------------------------------|------|------|
| upto 23 months | 12 | 1.0 |
| ≥24 months | 38 | 2.9 |
| Colostrum feeding | | |
| Yes | 1181 | 91.0 |
| No | 117 | 9.0 |
| Exclusive breastfeeding | | |
| Upto 6 months | 875 | 67.4 |
| Complementary feeding after 6 months | | |
| | 367 | 28.2 |
| Types of complementary food introduced* | | |
| Jaulo | 314 | |
| Superflour | 190 | |
| Family food | 357 | |
| ORS feeding during diarrhea N=245 | | |
| Yes | 190 | 77.5 |
| No | 55 | 22.5 |

Table 2 shows that only 2.9% mother breastfeed upto 24 months. Most of the mothers (91%) did colostrum feeding to their child. More than half (67%) of the mothers practiced exclusive breastfeeding and 28.2% mothers introduced complementary feeding to their children after 6 months.

DISCUSSION

In this study, we sought to ascertain the pattern of feeding practices among the mothers in Lamjung, Tanahun and Gorkha Districts. We demonstrated, through descriptive analysis, that mothers residing in hilly areas had very poor practice of breastfeeding upto 24 months (3%) Breastfeeding is the most cost effective way for reducing childhood morbidity such as obesity, hypertension and gastroenteritis as well as mortality. The reason behind the above findings could be lack of access to accurate information, lack of good family and community support, culture factors and also the overall functioning of the health care system in the study districts.¹⁴

In this study, 67% of mothers practised exclusive breastfeeding. A study conducted by Tulashi Adhikari Mishra in Nepal (2014) revealed that 50 % of the respondents practiced exclusive breastfeeding.¹⁵ This data is similar to the national data which reveals that 70% of mothers exclusively breastfeed in Nepal.¹⁶ A study by Perera and Fernando in 2011 reported that 62.2% children were exclusively breastfed until the completion of six months.¹⁷ Worldwide, it is estimated that only 34.8 of infants are exclusively breastfed.¹⁸

Many factors could affect exclusivity and duration of breastfeeding including breast problems such as sore nipple, mother's perception of producing inadequate milk, societal barriers such as employment, length of maternity leave, inadequate breastfeeding knowledge, lack of familial and societal support and lack of guidance and encouragement from health care professionals.

Above findings shows the inadequate knowledge and practice of exclusive breast feeding practices despite the fact that Nepal's Milk Substitute Act 1992 (2029) promotes and protects breastfeeding and regulates the unauthorized or unsolicited sale and distribution of breast milk substitutes.

In this study, only 28.2 of the mothers started complementary feeding after completion of the 6 months of baby. The National Demographic health survey 2011 also concluded that complementary foods are not introduced in a timely fashion for all children in Nepal. 16 A study by Chapagain in 2013 reported that only 33.27% actually practise complementary feeding to their children.²⁰ It is very important to make mothers aware that complementary feeding (solid foods) should be introduced in a timely manner.¹⁶

It should be noted that during the weaning process many mother encounter infant feeding problems such as refusal –to –eat, vomiting, among others. All these problems that mother encounter during feeding processes either directly or indirectly influences the complementary feeding pattern.

In this study, colostrum feeding practices was found to be very high (91%). Similar findings were reported in a study done by Mathema in 2014 and NDHS survey 2011 which revealed that almost all mothers feed colostrum to their infants.^{16, 19} A study done by Chapagain in 2013 reported that 87.3% of mothers did colostrum feeding to their children.²⁰ The reason behind high colostrum feeding practices may be due to the fact that breastfeeding practices soon after baby birth is common in Nepal. Colostrum feeding has huge benefits to infants. It enhances the immunity, improves proper digestion, and provides sufficient amount of nutrition.

Nearly 23% of the mothers did not give ORS to their

children when they had diarrhoea. A study revealed that ORS reduces diarrhea mortality by upto 93%. 20ORS is a simple, proven intervention that can be used at the community and facility level to prevent and treat diarrhea dehydration and decrease diarrhea mortality. Whereas ORS is highly effective, coverage levels remain low in most countries. It is essential that ORS coverage be increased to achieve reductions in diarrhea mortality; to do so, operations and implementation research is needed to better understand why ORS implementation is not effective and how we can promote its use at home to manage diarrhea.

We require better understanding of the reason for not satisfactorily improving exclusive breast feeding and complementary feeding practices despite huge emphasis in Exclusive Breast Feeding and complementary feeding by Infant and Young Child Programmes, and the government may need to modify their current strategies to address these reasons. Adequate advocacy should be carried out during antenatal and postnatal period and peer support for feeding practices should be encouraged. Factors which deter optimum feeding practices also need to be tackled.

CONCLUSION

This study reveals that complementary feeding practices and exclusive breast feeding practices are not really satisfactory in Lamjung, Tanahun and Gorkha. There is an urgent need to improve the feeding practices in accordance with the standard recommendation among children of these hilly regions. More focus should be put on community based programmes as well as on monitoring of the implementation of timely and adequate feeding practices. which have been proved to be one of the most effective ways to improve child survival.

Competing interest

The authors declare that they have no competing interest.

Authors' contributions

NS was involved in conceptualizing the study, reviewing the literature, designing protocol, developing questionnaire, data collection, analysis

and preparing the manuscript and GK and GPD supported in Conceptualizing the study, designing protocol data analysis and preparing manuscript.

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REFERENCES

1. Kramer MS, Kakuma R. The optimal duration of exclusive breastfeeding, a systematic review. Geneva: World Health Organization; 2002.
2. World Health Organization. E-Library of Evidence for Nutrition Actions (eLENA). 2015. Available from http://www.who.int/elena/titles/exclusive_breastfeeding/en/
3. http://www.who.int/nutrition/topics/complementary_feeding/en/
4. Lakati AS, Makokha OA, Binns CW, Kombe Y. The effect of pre-lacteal feeding on full breastfeeding in Nairobi, Kenya. *East Afr J Public Health*. 2010; 7(3): 258-262.
5. Ogbo FA, Agho KE, Page A. Determinants of suboptimal breastfeeding practices in Nigeria: evidence from the 2008 demographic and health survey. *BMC Public Health*. 2015; 15: 259.
6. UNICEF/WHO, "Indicators for assessing infant and young child feeding practices, part 3. Country profiles," 2010, https://www.unicef.org/nutrition/files/IYCF_Indicators_part_III_country_profiles.pdf
7. UNICEF, "A conceptual framework and research approach for identifying, analyzing and prioritizing barriers to effective maternal, newborn and child health interventions 2011," .
8. Jones G, Steketee RW, Black RE, Bhutta ZA, Morris SS, Grp BCSS: How many child deaths can we prevent this year?. *Lancet*. 2003,

- 362(9377):65-71.
9. Nepal Demographic and Health Survey 2011. Kathmandu, Nepal: Ministry of Health and Population, Nepal, New ERA, and ICF International, Calverton, Maryland. 2012.
 10. Government of Nepal. Ministry of Health and Population. Department of Health Services. Child Health Division. Strategy for Infant and Young Child Feeding: Nepal. 2014
 11. National Population Census 2011. Household and Population by sex. Central Bureau of Statistics. November, 2012.
 12. National Population and Housing Census 2011: Village Development Committee/ Municipality. Central Bureau of Statistics. March, 2014.
 13. MoteeAshmika, Jeewan Rajesh. Importance of Exclusively Breastfeeding and Complementary Feeding among Infants. ISSN:2347-467X. Available at: <http://www.foodandnutritionjournal.org/volume2number2/importance-of-exclusive-breastfeeding-and-complementary-feeding-among-infants/>
 14. WHO. Global Strategy for Infant and Young Child Feeding. Geneva 2003.
 15. Mishra AT. Knowledge and Practice of Mother regarding Exclusive Breastfeeding Having Infant at a Tertiary Level Hospital, Kathmandu. Journal of Nepal Pediatric Society. 2014; 34(3):200-206.
 16. Population Division, MOH Government of Nepal, Nepal demographic Health Survey, Kathmandu 2011;150-181.
 17. Perera JP, Fernando M, Warnakulasuria T, Ranathunga n. Feeding practice among children attending child welfare clinics in RagamaMOH area: a descriptive cross-sectional study. International Breastfeeding Journal. 2011;6(18):1-7.
 18. WHO. The optimal duration of exclusive breast feeding. A systematic review. Document WHO/NHD/01.08 Geneva: WHO;2001.
 19. Matema S. Breastfeeding Practices in Kathmandu. Journal of Nepal Pediatric Society. 2014; 34(2):96-99.
 20. Chapagain HR. Complementary Feeding Practices of Nepali Mothers for 6 months to 24 Months Children. J Nepal Med Assoc . 2013; 52(191): 443-448.