|| ISSN(online): 2589-8698 || ISSN(print): 2589-868X ||
International Journal of Medical and Biomedical Studies
Available Online at www.ijmbs.info
PubMed (National Library of Medicine ID: 101738825)
Index Copernicus Value 2017: 40.03
Original Research Article
Volume 3, Issue 3; March: 2019; Page No.202-208

IMPACT OF CHILD FEEDING PRACTICES ON NUTRITIONAL STATUS OF CHILDREN IN UTTARAKHAND

Shubham Pandey[1], Ashish Gaur[2*], Ankit Singh[3], Surabhi Kassere[4]

[1, 2, 3, 4] Department of Biostatistics, Himalayan Institute of Medical Sciences, SRHU, Dehradun

Article Info: Received 01 March 2019; Accepted 30 March. 2019
Cite this article as: Pandey, S., Gaur, A., Singh, A., & Kassere, S. (2019). IMPACT OF CHILD FEEDING PRACTICES ON NUTRITIONAL STATUS OF CHILDREN IN UTTARAKHAND. *International Journal of Medical and Biomedical Studies*, *3*(3).
DOI: https://doi.org/10.32553/ijmbs.v3i3.148
Address for Correspondence: Ashish Gaur, Department of Biostatistics, Himalayan Institute of Medical Sciences, SRHU, Dehradun
Conflict of interest: No conflict of interest.

Abstract

Background: Child feeding practices are the major contributors to the growth of children and have a crucial impact on the nutritional status of children. Awareness about the role of breastfeeding and complementary foods along with the knowledge about their nutritional benefits for the development, growth of infants is very important especially in rural areas.

Objective: To know breastfeeding practices and nutritional status among children with focus on strengthening these practices to improve the health of infants in Uttarakhand.

Material and Methods: Z-score test for two population proportions was used for specifying the significance level and test P-value was used for comparing the state i.e. Uttarakhand and its districts according to the two divisions namely, Kumaon and Garhwal.

Results: In Kumaon division, the districts with healthy child feeding practices was observed were Udham Singh Nagar and Bageshwar, whereas in Garhwal division, Haridwar, Pauri Garhwal, and Rudraprayag were the districts with better practices as compared to the whole state. It was also observed that Garhwal division is rated higher than Kumaon division for best child feeding practices adopted while raising children.

Conclusion: Through this study, it has been concluded that breastfeeding was prevalent in rural women but there lies a scope of improvement in their knowledge pertaining to the feeding practices.

Keywords: Child Feeding, Breastfeeding, Complementary feeding, Infants, Nutrition, Uttarakhand

Introduction:

Malnutrition is one of the biggest health problems the world currently faces, which is responsible for more than 41% of annual deaths in children aged 6 to 24 months. In the developing nations, deaths related to malnutrition sums up to approximately 2.3 million (1). As per the WHO (2000) reports, 54% of all childhood mortality was directly or indirectly attributable to malnutrition (2).

During infancy, feeding practices play a very important role in the growth, development, and health of a child, and are very crucial in the first two years of life (3). Also they are very critical to prevent chronic degenerative diseases. In developing countries, the progress in improving infant and young child feeding practices is

remarkably slow due to a number of factors (4, 5). The current trend of child deaths, which is estimated out of the 90% global child deaths in 42 countries, can be reduced with effective nutrition interventions which could save 25% of childhood deaths each year (6).

National Family Health Survey (NFHS) provides data regarding population, health, and nutrition for India with respect to every state. The data related to a number of indicators of district level estimated was taken from NFHS-4; breastfeeding is one of the important indicators as it is considered an ideal food for the better health, growth and development of infants. And it is generally recommended that exclusive breastfeeding is necessary for infants for the first six months of life, which must be continued till two years of life along with complementary foods (7, 8). While complementary foods generally require timely, adequate, safe and properly feeding, breastfeeding is the least allergic, risk-free and best infant feeding method. Additionally, breastfeeding have more nutritional, immunological, behavioral and economic benefits than other feeding methods, and it also enhances the desirable mother-infant bonding (9). The prevalence and duration of breastfeeding is still lower in a number of nations than what is recommended by various international bodies which includes exclusive breastfeeding for the first six months of life despite the demonstrated benefits of breastfeeding.

Our study was aimed to know breastfeeding practices and nutritional status among children of mothers with focus on strengthening these practices to improve the health of infants.

MATERIAL AND METHODS

In this study, secondary data was taken from the factsheets from National family Health Survey-4 (2015-16) to compare the feeding practices and nutritional status among children of 13 districts of Uttarakhand which is divided into Kumaon and Garhwal divisions.

Statistical analysis

Z-score test for two population proportion was used. The test is also called two proportions Z-test. Z-test specifies the significance level i.e. Z-test for two population is used to determine whether the hypothesized difference between population proportions differs significantly from the observed sample difference (10).

Normal Distribution Calculator was used to assess the probability associated with the z-score because the test statistic was a z-score (11).

RESULTS

Table 1: Distribution of Proportion and P-value according to regions and its comparison with state

INDICATORS	PROPORTION	PROPORTION	PROPORTION	p-value	p-value	p-value
	KUMAON DIVISION	GARHWAL DIVISION	UTTARAKHAND	K VS G	K VS U	G VS U
Children of age under 3 years that were breastfed within one hour of birth (%)	29.17	34.27	27.80	0.014	0.490	0.00
Children of age under 6 months which were exclusively breastfed (%)	43.88	41.79	51.00	0.340	0.000	0.000
Children age 6-8 months who received solid or semi-solid	22.30	14.67	46.70	0.000	0.000	0.000

food and breast milk (%)						
Breastfeeding children age 6-23 months receiving an adequate diet (%)	11.78	7.31	8.60	0.0006	0.0182	0.285
Non-breastfeeding children of age 6-23 months who received an adequate diet (%)	3.73	0.71	7.90	0.000	0.000	0.000
Total children of age 6-23 months received an adequate diet (%)	11.42	7.14	8.50	0.0009	0.030	0.240
Children under 5 years who were stunted (height-for-age) (%)	31.50	31.21	33.50	0.889	0.342	0.271
Children under 5 years who were wasted (weight-for-height) (%)	16.62	27.50	19.50	0.000	0.090	0.000
Children under 5 years who were severely wasted (weight-for-height) (%)	7.28	14.54	9.00	0.000	0.139	0.0002
Children under 5 years who were underweight (weight-for-age) (%)	21.93	30.86	26.60	0.000	0.0143	0.034

The comparison of Uttarakhand with divisions Kumaon and Garhwal was done with respect to various feeding practices among children (Table 1). A significant difference was observed in Kumaon and Garhwal division (p value 0.0) for children under 3 years of age who were breastfed within an hour of birth. Similarly, for children under 6 months who were exclusively breastfed, the significant difference was observed in Kumaon and Garhwal in comparison to whole state. For children age 6-8 months who received solid or semi-solid food and breast milk, there was significant difference in Kumaon VS Garhwal, Kumaon VS Uttarakhand, Garhwal VS Uttarakhand (p value 0.0). Similarly in the case of Non-breast feeding children age 6-23 months receiving an adequate diet, the difference is also highly significant which is consistent in the case of children under 5 years who were underweight.

Table 2: Comparison Proportion and P-value of Kumaon Division with respect to its districts: Nainital, Udham singh nagar, Almora, Bageshwar, Champawat and Pithoragarh

INDICATORS	PROPORTION	PRO (P-VALUE)	PRO (P-VALUE)	PRO (P-VALUE)	PRO (P-VALUE)	PRO (P-VALUE)	PRO (P-VALUE)
	KUMAON DIVISION	NAINITAL	UDHAM SINGH NAGAR	ALMORA	BAGESHWAR	CHAMPAWAT	PITHORAGARH
Children of age under 3 years that were breastfed	29.17	29.3 (0.960)	23.9 (0.007)	29.9 (0.727)	33.2 (0.053)	32.9 (0.073)	26.5 (0.177)

within one hour of birth %							
Children of age under 6 months which were exclusively breastfed (%)	43.88	48.5 (0.039)	41.4 (0.2584)	44.3 (0.857)	21.5 (0.000)	60.0 (0.000)	47.8 (0.080)
Children age 6-8 months who received solid or semi-solid food and breast milk (%)	22.30	39.4 (0.000)	45.5 (0.000)	47.6 (0.000)	(0.000)	(0.000)	(0.000)
Breastfeeding children age 6-23 months receiving an adequate diet (%)	11.78	13.4 (0.280)	9.4 (0.0818)	9.4 (0.0818)	11.5 (0.8336)	10.6 (0.3953)	14.7 (0.0561)
Non-breastfeeding children of age 6-23 months who received an adequate diet (%)	3.73	3.1 (0.4593)	19.3 (0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Total children of age 6-23 months received an adequate diet (%)	11.42	12 (0.674)	11.3 (0.944)	9.1 (0.089)	11.1 (0.834)	9.8 (0.246)	13.7 (0.121)
Children under 5 years who were stunted (height-for-age) (%)	31.50	32.1 (0.772)	37.8 (0.003)	34.3 (0.184)	25.1 (0.002)	30.5 (0.631)	30.6 (0.667)
Children under 5 years who were wasted (weight-for-height) (%)	16.62	9.00 (0.000)	12 (0.003)	13.7 (0.070)	26.3 (0.000)	17.4 (0.631)	20.6 (0.022)
Children under 5 years who were severely wasted (weight-for-height) (%)	7.28	3.7 (0.0006)	3.5 (0.0002)	6.8 (0.726)	13.5 (0.000)	6.1 (0.322)	9.2 (0.103)
Children under 5 years who were underweight (weight-for-age) (%)	21.93	17.0 (0.006)	27.1 (0.007)	23.0 (0.555)	27.2 (0.006)	21.2 (0.704)	16.6 (0.003)

As per the comparison of various districts in Kumaon region (Table 2), there lies a significant difference in Children under age 3 years who were breastfed within one hour of birth for district Udham Singh Nagar with respect to Kumaon division. Similar difference was observed Children under age 6 months exclusively breastfed in districts Nainital, Bageshwar, Champawat with respect to Kumaon division. For Children age 6-8 months who received solid or semi-solid food and breast milk there lies significant difference across all districts. In districts Nainital, Udham Singh Nagar, Bageshwar, Pithoragarh for children under 5 years who were wasted (weight-for-height) and children under 5 years who were underweight there is a significant difference in all these districts. Therefore, Kumaon Region, Udham Singh Nagar and Bageshwar are the districts with good child feeding practices as compared to other districts.

Table 3: Comparison Proportion and P-value of Garhwal Division with respect to its districts: Haridwar, Chamoli, Dehradun, P Garhwal, Rudraprayag, Tehri Garhwal, and Uttarkashi

INDICATORS	PROPORTION	PRO (P-VALUE)	PRO (P-VALUE)	PRO (P-VALUE)	PRO (P-VALUE)	PRO (P-VALUE)	PRO (P-VALUE)	PRO (P-VALUE)
	GARHWAL DIVISION	HARIDWAR	CHAMOLI	DEHRADUN	P GARHWAL	RUDRAPRAYAG	TEHRI GARHWAL	UTTARAKASHI
Children of age under 3 years that were breastfed within one hour of birth (%)	34.27	20.9 (0.000)	42.9 (0.000)	30.6 (0.076)	26.3 (0.000)	52.9 (0.000)	35.1 (0.704)	31.2 (0.704)
Children of age under 6 months which were exclusively breastfed (%)	41.79	51.1 (0.000)	(0.000)	69.0 (0.000)	59.9 (0.000)	(0.000)	43.7 (0.389)	68.8 (0.000)
Children age 6-8 months who received solid or semi-solid food and breast milk (%)	14.67	47.1 (0.000)	(0.000)	55.6 (0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Breastfeeding children age 6-23 months receiving an adequate diet (%)	7.31	3.1 (0.000)	9.3 (0.105)	12.6 (0.000)	2.8 (0.000)	10.7 (0.007)	6.6 (0.535)	6.1 (0.284)
Non-breastfeeding children of age 6-23 months who received an adequate diet (%)	0.71	5.0 (0.000)	0.000 (0.008)	0.000 (0.008)	0.000 (0.008)	0.000 (0.008)	0.000 (0.008)	0.000 (0.008)
Total children of age 6-23 months received an adequate diet (%)44	7.14	3.5 (0.0003)	10.7 (0.004)	11.5 (0.000)	3.7 (0.000)	9.6 (0.043)	5.7 (0.200)	5.3 (0.094)
Children under 5 years who were stunted (height-for-age) (%)	31.21	39.1 (0.000)	33.7 (0.234)	28.5 (0.186)	22.9 (0.000)	29.0 (0.284)	30.1 (0.596)	35.2 (0.057)
Children under 5 years who were wasted (weight-for-height) (%)	27.50	12.3 (0.000)	18.0 (0.000)	30.1 (0.200)	27.4 (0.960)	18.4 (0.000)	46.9 (0.000)	39.4 (0.000)
Children under 5 years who were severely wasted (weight-for-height) (%)	14.54	5.3 (0.000)	7.2 (0.000)	12.0 (0.098)	18.1 (0.029)	7.5 (0.000)	28.1 (0.000)	23.6 (0.000)
Children under 5 years who were underweight (weight-for-age) (%)	30.86	24.7 (0.002)	22.3 (0.000)	30.7 (0.920)	27.9 (0.141)	25.9 (0.013)	44.2 (0.000)	40.3 (0.000)

Considering the districts of Garhwal division, for Children under age 3 years who were breastfed within one hour of birth high significance was observed in Haridwar, Pauri Garhwal and Rudraprayag and also for all districts except Tehri Garhwal for children under age 6 months which were exclusively breast fed. Children age 6-8 months who received solid or semi-solid food and breast milk along with non – breastfeeding children age 6-23 months who received an adequate diet high significance (p-value is 0.000) was seen in all the districts of the Garhwal division.

For the indicator children under 5-years who were wasted (weight-for-height) is also highly significance except the district Dehradun and Pauri Garhwal (P-value is 0.20 and 0.096) in the division of Garhwal. Similarly for the indicator children under 5-years who were severely wasted (weight-for-height) of the Garhwal division with respect its district is highly significant except the district Dehradun (P-value is 0.09) because P-value for those district is 0.000. Therefore, In Garhwal region the best child feeding practices are observed in districts namely Haridwar, Pauri Garhwal and Rudraprayag.

DISCUSSION

According to NFHS-3 (India), varied frequencies in every state were observed in the percentage of children who were breastfed.

Growth and development of a child is very fast in the initial two years of a child and this period is generally influenced by nutritional deficiencies which ultimately impact the health of a child. To improve the developmental process during this crucial time as per the age pattern found in earlier NFHS survey, the Government of India has expanded the Integrated Child Development Services (ICDS) programme, to include younger children in addition to the earlier focus on children age 3-6 years (12). Still, there lies a huge scope of improvement as children in India face continuous suffering due to serious nutritional problems during their early childhood years.

As per the IYCF (2006) guidelines, Government of India has recommended that the mothers should initiate breastfeeding immediately after birth or within one hour of birth. However, the inconsistency in this practice occur due to mother's illiteracy, low socioeconomic class, and majority of home deliveries (7).Wrong customs & beliefs, mother being too tired to feed, less milk secretion, baby was sleeping could be some other reason which hindered the early breastfeeding. This clearly depicts that there lies a lack of motivation among mothers to start early breastfeeding. In contrast to other studies, our study has depicted that delayed breast-feeding (>1hr) is still being practiced in the rural areas of Uttarakhand. In our study maximum 33.2% children under age 3 years breastfed within one hour of birth in the district of Bageshwar of Kumaon division which is less than children under age 6 months who were exclusively breastfed in the district of Champawat which is 60.0%.

In the same way 47.6% children age 6-8 months who received solid or semi-solid food and breast milk in the district Almora for the Kumaon division. For the Garhwal division maximum 52.9% children of age less than 3 years were breastfed within one hour of birth in district Rudraprayag which is less than for children of age under 6 months exclusively breastfed in district Dehradun is 69.0% (13). For the children of age 6-8 months who received solid or semi-solid food in addition to breast milk is 55.6% in Dehradun district of Garhwal division.

In our study 14.7% breastfeeding children of age 6-23 months who received an adequate diet in Pithoragarh district which is generally less than Nainital district is 13.4% which is in contrast with a study done in Andhra Pradesh (14). In the district Udham singh nagar 37.8% children under 5 years who were stunted is more than the district Almora is 34.3%. In the district Haridwar 39.1% children under 5 years who were stunted is more than the district Pauri Garhwal is 22.9%. For Children less than 5 years who were wasted is 18.0% in district Chamoli which is less than

46.9% in district Tehri Garhwal of Garhwal division, whereas in a study it was 25% (15).

CONCLUSION

From the study, it has been concluded that among rural women breast feeding is more popular through the knowledge about the benefits and duration of breastfeeding needs to be enhanced. The perceptions regarding the feeding practices have a direct influence upon the health of the child, therefore, the myths & false beliefs surrounding children feeding which can be found in all strata of community needs to be supersede by scientific and practical messages which will help in the better development of children.

REFERENCES

1. Priego AA, S., Morales H, R., Torres ES, O., Cuevas R, P., & Blas R, b. (2002). Family strategies of life associated with malnutrition in children less than 2 years of age. Salud Pública De México, 44(1), 41-49.
2. Rice, A., Sacco, L., Hyder, A., & Black, R. (2000). Malnutrition as an underlying cause of childhood deaths associated with infectious diseases in developing countries. Bulletin of the World Health Organization, 78(10), 1207-1221.
3. WHO. Global Strategy for Infant and Young Child Feeding. Geneva: World Health Organization, 2002.
4. M, R. (2003). Progress in Developing Indicators to Measure Complementary Feeding Practices. SCN News, 27, 20-22.
5. Singh A, Pandey S, Gaur A. (2018). Burden of non-communicable diseases on two different division of Uttarakhand: Adult health indicator. International Journal of Development Research, 8, (12), 24480-24485.
6. Black, R., Morris, S., & Bryce, J. (2003). Where and why are 10 million children dying every year? The Lancet, 361(9376), 2226-2234. doi: 10.1016/s0140-6736(03)13779-8
7. Department of Women and Child Development Government of India, Ministry of Human Resource development. (2004). National Guidelines for Infant and Young Child Feeding. New Delhi. Available at http://www.wcd.nic.in/sites/default/files/nationalguidelines.pdf
8. Pandey S, Semwal J, Vyas S, Singh A, Gaur A.(2018). Estimating and comparing the trends of fertility pattern from various birth cohorts in rural hilly population of Uttarakhand. Asian Pacific Journal of Health Sciences. 5 (1). pp-175-178.
9. Chaturvedi, M., & Awasthi, S. (2016). A Meta-Analysis: Colostrum Feeding Practices in Uttar Pradesh, India. Indian J Comm Health, 28(1), 70-74.
10. Singh A, Gaur A and Pandey S. (2018) Outline Of Population and Household Characteristics in Uttarakhand: Estimates from NFHS. International Journal of Current Research. Vol. 10, Issue, 12, pp.76339-76342.
11. Pandey S et al. (2018) Construction of nuptiality tables for the hilly rural population of Uttarakhand: 1931-2000. Int J Community Med Public Health. 5(3) pp-1-6.
12. International Institute of Population Sciences. National Family Health Survey 2005-2006 (NFHS-3). Mumbai. Available from: http://www.nfhsindia.org.
13. Matthew, A., Amodu, A., Sani, I., & Solomon, S. (2009). Infant Feeding Practices and Nutritional Status of Children in North Western Nigeria. Asian Journal Of Clinical Nutrition, 1(1), 12-22. doi: 10.3923/ajcn.2009.12.22
14. Takalkar AA, Saiprasad GS, Tarun K, Madhekar NS. Breastfeeding Practices in Rural Community of Andhra Pradesh. IJMCH.2010; 12(2):2-8.
15. Chatterjee Saurav, Saha Sandhita: A study on KP of mothers regarding infant feeding and nutritional status of Under 5 children attending immunization clinic of Medical College, The Internet Journal Nutrition and Wellness. 2008; 5(1).