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INFANT AND YOUNG CHILD FEEDING PRACTICES AMONG CHILDREN IN MEGHALAYA - A HOSPITAL BASED CROSS SECTIONAL STUDY

Paediatrics

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ABSTRACT

Objective: To assess the adequacy of age appropriate complementary feeds based on WHO guidelines for infant and young child feeding and to assess the nutritional status based on length for age.

Design: Randomized cross sectional study

Study setting: Paediatric ward, Department of Paediatrics and Neonatology, Nazareth Hospital, Shillong, Meghalaya

Participants-Infants and young children between the ages of 9 months to 23 months, admitted in the Pediatric ward of Nazareth Hospital, Shillong, Meghalaya

Outcome measures: IYCF practices, adequacy of complementary feeding, stunting, demographic factors affecting adequacy of complementary feeding and stunting

Results: 77% of infants were born by normal delivery and 23% by LSCS. 18% were born at home, 33% in private hospital and 49% were born in government hospitals. 51% were exclusively breastfed till 6 months of age. 36% were started on complementary feeds at 6 months of age, 41% beyond 6 months of age and 23% before 6 months. 80% received meals with minimum dietary diversity. 55% received 4 or more meals per day which is in accordance with minimum meal frequency as per WHO criteria. 70% received minimum acceptable diet. 26% were initiated on breastfeeding within 1 hour of life. 70% received breastfeeding after 1 hour of life, while 4% were never breastfed. Only 35% of infants and young children received adequate complementary feeds. 58% were stunted. Out of those who were stunted, 81% had not received adequate complementary feeds. 46.6% of those who were stunted were started on complementary feeds beyond 6 months of age.

Conclusion: 58% of infants and young children, amongst the 100 enrolled in the present study were stunted. Out of these, 81% had not received adequate complementary feeds. Only a minority of the population followed appropriate complementary feeding practices according to IYCF guidelines. Key Words: IYCF, breastfeeding, complementary feeding, stunting, Meghalaya, WHO,NFHS

KEYWORDS

The period during pregnancy and a child's first two years of life are considered a critical window of opportunity for preventing growth faltering. Feeding practices have an impact on the physical growth, which is regarded as one of the best indicators of a child's wellbeing. The concept of IYCF was introduced in 2002. The WHO recommends exclusive breastfeeding for the first six months of life, with the addition of complementary feeds at the age of six months along with continued breast feeding till the age of 2 years.(1) The National Family Health Survey (NFHS) is a large-scale, multi-round survey conducted in a representative sample of households throughout India. It provides state and national information for India on fertility, infant and child mortality, the practice of family planning, maternal and child health, reproductive health, nutrition, anaemia, utilization and quality of health and family planning services. According to NFHS-5 data show that only 41.8% children are breastfed within one hour of birth, 63.7% are breastfed exclusively for 6 months and only 11.3% children receive an adequate diet. NFHS-5 also states that 1 in 3 children below 5 years are stunted and underweight.(2) In terms of geographical regions, Meghalaya (46.5%), Bihar (42.9%), Uttar Pradesh (39.7%) and Jharkhand (39.6%), top the list.(3)

The first two years of a child's life are crucial to ensure appropriate growth and development. Meghalaya, where this study was carried out, is home to three Mongoloid tribes. It has a unique cuisine, different from the other Seven Sister States of North-east India. The staple food of the people is rice with spicy meat and fish preparations. The protein intake is less and the indigenous population has short stature and is mostly lean. The tribal beliefs and food habits have also got an important role to play in this regard.

MATERIALS AND METHODS

This is a cross sectional, descriptive, hospital based study on infant and young child feeding practices among children admitted in a tertiary care center in Meghalaya undertaken in the Department of Pediatrics, Nazareth Hospital, Meghalaya, Shillong. Both tribal and non-tribal population has been included in the study. It was conducted in a 12-month period from 1st of February 2019 to 31st of January 2020. Infants and young children in the age group of 9-23 months admitted in the paediatric ward of Nazareth hospital. Samples were collected on a consecutive sampling technique after considering the inclusion and exclusion criteria.

Inclusion Criteria

Children between the ages of 9 months to 23 months admitted in the general ward of Nazareth hospital.

Exclusion Criteria

1. Children with any congenital abnormality.
2. Mother or infant is immune-compromised.
3. Any child with failure to thrive, malabsorption, lactose intolerance.
4. Mentally or physically disabled infants and children.
5. Any child with chronic cardiac, renal, gastric or central nervous system pathology.
6. Children whose parents or guardians do not give consent

Methodology:

Data Collection Methods

The data has been collected and recorded in a pre-tested proforma after obtaining informed consent from the parents or guardian.

Measurement Of Outcome

The adequacy of complementary feeds has been assessed according to the WHO indicators.(1) All the core WHO indicators has been assessed

and the proportion of each was calculated. Feeding was assessed based on 24 hour recall method of daily diet prior to onset of illness. In this study, complementary feeds has been deemed adequate if the infant is receiving minimum acceptable diet, with minimum dietary diversity and has been started on complementary feeds at 6 months of age.

Nutritional status of the infant has been calculated according to length for age using standard WHO methods.

Definitions

1) Early initiation of breastfeeding- children who were put to the breast within 1 hour of life
2) Exclusive breastfeeding for 6 months- children aged 0-5 months who were fed exclusively with breast milk
3) Continued breastfeeding at 1 year- children aged 12 to 15 months who are fed breast milk
4) Introduction of solid, semi-solid or soft foods- infants aged 6-8 months who receive solid, semi-solid or soft foods.
5) Minimum dietary diversity- children 6-23 months who receive foods from 4 or more food groups

The 7 food groups used for the tabulation of this indicator are:

- grains, roots and tubers
- legumes and nuts
- dairy products (milk, yogurt, cheese)
- flesh foods (meat, fish, poultry and liver)
- eggs
- vitamin A rich fruits and vegetables
- other fruits and vegetables

6) Minimum meal frequency- breast fed and non-breast fed children 6-23 months of age who receive solid, semi-solid or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more: 2 for 6-8 months, 3 for 9-23 months, 4 for 9-23 months(if not breast fed)
7) Minimum acceptable diet- children 6-23 months of age who had both minimum meal frequency and dietary diversity (in both breast fed and non-breast feed infants)
8) Consumption of iron rich or iron fortified foods- children 6-23 months of age who receive an iron rich food or iron fortified food that is especially designed for infants and
young children or that is fortified in the home.

RESULTS AND OBSERVATIONS

DISTRIBUTION OF CASES IN THE PRESENT STUDY

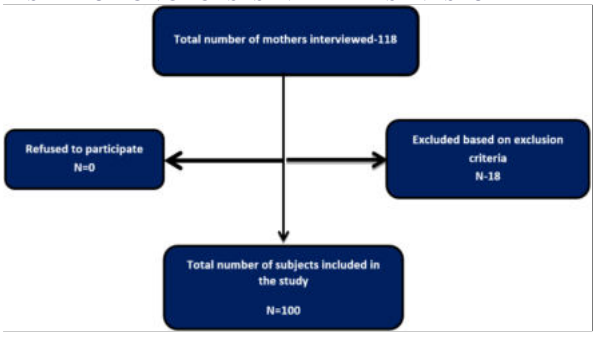

Table 5.A-Distribution Of Infants And Young Children According Sociodemographic Data In The Present Study

WHO INDICATOR	CRITERIA	N (%)	p value
Exclusively breastfed	Yes	36(36%)	0.9
	No	64(64%)	
Time of starting complementary feeds	6 months	36(36%)	0.075
	>6 months	41(41%)	
	<6 months	23(23%)	
Minimum meal frequency	2	10(10%)	<0.001
	3	35(35%)	
	4	55(55%)	
Minimum acceptable diet	Yes	70(70%)	<0.001
	No	30(30%)	
Dietary diversity	Yes	80(80%)	<0.001
	No	20(20%)	
Time of initiation of breast feeding	Within 1 hour	26(26%)	<0.001
	>1 hour	70(70%)	
	Not breastfed	4(4%)	
Continued breastfeeding at 1 year of age	Yes	52(52%)	<0.001
	No	48(48%)	
Consumption of iron rich food	Yes	46(46%)	0.424
	No	54(54%)	

Table-5. B- Proportion Of Infants And Young Children Receiving Complementary Feeds In Accordance With The WHO Indicators (N=100)

Particulars		N (%)	p value
Sex	Males	59(59%)	0.072
	Females	41(41%)	
Birth order	<2	55(55%)	<0.001
	2-5	27(27%)	
	>5	18(18%)	
Age of mother	<20 years	9(9%)	<0.001
	20-35 years	83(83%)	
	>35 years	8(8%)	
Education of mother	Illiterate	5(5%)	<0.001
	Primary school	41(41%)	
	High school	35(35%)	
	Graduation	10(10%)	
	Post-graduation	9(9%)	
Occupation of mother	Unskilled	57(57%)	<0.001
	Semi-skilled	21(21%)	
	Skilled	22(22%)	
Type of delivery	Vaginal	77(77%)	<0.001
	LSCS	23(23%)	
Place of delivery	Home	18(18%)	0.001
	Private hospital	33(33%)	
	Gov hospital	49(49%)	
Socioeconomic status	Lower	25(25%)	0.027
	Upper lower	43 (43 %)	
	Upper middle	32 (32 %)	
Ethnicity	Indigenous	58(58%)	0.9
	Non indigenous	42(42%)	

1) **Early initiation of breastfeeding** - 26% of infants and young children in the present study received breastfeeding within the first hour of life (p value-0.84). This figure may not be very reliable because of poor recall.
2) **Exclusive breastfeeding** -36% of infants and young children in the present study were exclusively breastfed. The present study reported similar values as that of the NFHS-4 data for Meghalaya, which was also 36%. This could be attributed to the fact that majority of the mothers interviewed in the present study were educated and 82% of the deliveries occurred in hospitals, where they would receive counseling from healthcare workers. NFHS-5 has reported an even higher value of 42.7.(2)
3) **Continued breastfeeding at 1 year of age** - 52% of infants and young children in the present study continued to receive breastfeeding at 1 year of age. This was much lower compared to the NFHS 4 data, where 88% continued to receive breastfeeding at 1 year of age.(4) This difference can be attributed to the fact that 51% of the infants and young children enrolled in the present study were less than 2 in birth order. Women in Meghalaya generally have high total fertility rate (2.9, one of the highest in the country), which results in reduced spacing between births
4) Timely introduction of solid, semi-solid or soft foods introduction of solid, semi-solid or soft foods- In the present study, 36% of infants and young children were started on complementary feeds at six completed months. This is in variance with NFHS -5 where 66.8% were started on feeds at the right time, but in NFHS-5 the appropriate time was considered from 6-8 months.(2) This can explain the higher rate of compliance.
5) Minimum dietary diversity - 80% of infants and young children received minimum dietary diversity. It was significantly higher than the NFHS-4 data of 45%. Nazareth hospital is located within city limits and the patient population visiting the hospital has easier access to different food groups and dairy products than people living in remote village areas. Another reason could be that the hospital is a private missionary hospital, where patients would be from relatively better economic section of the society.
6) Minimum meal frequency- 55% of infants and young children received complementary feeds of 3 or more per day. According to NFHS-4 data for Meghalaya, only 49% received minimum meal frequency. This could be attributed to the same reasons in the above point.

7) Minimum acceptable diet -70% of infants and young children received minimum acceptable diet. This was in total contrast to NHFS -4 data which showed that only 24% of children received minimum acceptable diet, (4)while in NFHS-5, it has increased to 29.8%.

8) Consumption of iron rich or iron fortified foods - 46% of infants and young children received iron rich food or iron supplementation of some kind. According to NFHS-4, 61% of children received iron supplementation. But this data included all children less than 5 years of age, which could probably explain the difference.(4)

ADEQUACY OF COMPLEMENTARY FEEDS

In the present study, adequate complementary feeds were assessed on the basis of timely introduction of feeds at 6 completed months of age, and if the child had received minimum acceptable diet. Minimum acceptable diet was if the infant had received minimum meal frequency with minimum dietary diversity. Based on this, 35% of the infants and young children received adequate feeds. NFHS-4 data reported adequate complementary feeding of 24.2%, while NFHS-5 reported higher rates of 29%. In the present study, adequacy of complementary feeds was found to be dependent on education of mother, time of initiation of complementary feeds, exclusive breastfeeding, type of delivery and top feeding.(2)

STUNTING

In the present study, 58 % of infants and young children were stunted, of which 56.8% were females. According to NFHS-5, 46.8% of children in Meghalaya under the age of 5 years are stunted.(2) The rate is increased between the ages of 18-23 months, which is reflected in our study as well. Stunting was found to be dependent on the adequacy of complementary feeds. Out of the total number of infants and young children who were found to be stunted, 81% did not receive adequate complementary feeds.

In the present study, stunting was found to be independent of the socioeconomic status, education of the mother, time of initiation of breastfeeding and iron consumption. This can be explained by the large variation in the educational status of mothers of infants and young children enrolled in the present study. Higher proportion of infants and young children enrolled belonged to the upper lower and upper middle socioeconomic status. Hence no significant comparison could be drawn.

A limitation of this study is that subjects of both indigenous and non-indigenous population were enrolled in the present study. This may not be a true reflection of the feeding practices of Meghalaya. The subject population belonged mostly to the upper lower socioeconomic class.

CONCLUSION

Infant and young child feeding practices have been engaging the attention of scientists worldwide, for the very simple reason that growth rate is maximum in the **first year of life and feeding practices have a major role in the nutritional status of the** child. The link between malnutrition and infant feeding has been well established. This in turn leads to poor cognition and development leading to poor productivity later in life. These are hence a major threat to social and economic development .Having an established set of guidelines and frequent assessments of the same will help ensure healthy feeding practices. Education of mothers and helping young mothers realize the importance of breastfeeding will go a long way in this regard.

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