Original Article

An Epidemiological Study on Knowledge, Attitude and Practices of Breast-Feeding and Newborn Care among Mothers in Pali District of Western Rajasthan, 2024

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Abstract

Introduction: Breastfeeding is one of the most important determinants of child survival, birth spacing, and prevention of childhood infections. As per NFHS- 5, in Rajasthan, the current Infant mortality Rate (IMR) and Neonatal Mortality Rate (NMR)are at 35.2 and 24.9 per 1000 live births respectively. Safe delivery, early breastfeeding, new born care within first few days and correct weaning practices are very crucial for the health of mothers and their baby. The study findings aim to orient the breastfeeding promotional activities and channelize efforts where gaps still exist in correct breast-feeding and newborn care practices.

Objectives: 1. To study knowledge and attitude about breastfeeding and newborn care in rural areas of Pali district of Western Rajasthan.

2. To study factors affecting breastfeeding and newborn care practices including weaning patterns in the selected rural area.

Methods: An analytical cross sectional study among mothers of less than one year old infants was conducted using a pretested questionnaire in villages of catchment area of RHTC of GMC Pali using convenient sampling until the sample size of 384 was reached.

Results: Colostrum was fed by 80%of the mothers interviewed. Exclusive breastfeeding was just 12% in our study. There was statistically significance between parity, and type of delivery with the good practices. Among participants 77% had good knowledge but only 47% followed correct practices.

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Conclusion: Pre lacteal feeds, non-exclusive breast feeding, unhealthy weaning foods were points of concern. Existing gaps between knowledge and action can be filled by repeated emphasis on desired good practices.

Key words: Breast feeding, newborn , care, Western Rajasthan, prelacteals

Introduction

Breastfeeding is one of the most important determinants of child survival, birth spacing, and prevention of childhood infection[1]. In India and in Rajasthan undernutrition and IMR are still high and need to be reduced to targets set as per Sustainable Development Goals (SDGs). In India, the infant mortality has declined during the last decade. As per NFHS 5 the IMR and NMR were 32 and 22 per 1000 live births respectively. In Rajasthan itself, the current IMR and NMR are at 35.2 and 24.9 per 1000 live births respectively[2].Breastfeeding cultural practices in India, mainly revolve around the concept of ritual purity and 'hot and cold' foods, restricted diet after childbirth and remaining in seclusion because of misconceptions related to childbirth[3].

Health of a mother and her newborn child depend on care she received during pregnancy and the first few weeks after delivery. Existing practices for breast-feeding, weaning, immunization, prevailing beliefs, practices and sociodemographic factors influence the infants growth and development[3].

In India, breastfeeding after birth was considerably delayed and in most cases, the valuable colostrum was discarded [4]. Nevertheless, with the consistent improvement in Health education under the National Rural Health Mission and efforts of local ASHAs and Anganwadis these practices have improved. The study of local beliefs, socio-cultural factors helps in channelizing the breastfeeding promotional activities to fill the gaps in knowledge[5,6].

In order to make the community based maternal and child health education interventions more effective there was a need to have a baseline study on the current practices associated with new born care, breast feeding, weaning, immunization practices among people living in the arid areas of Western Rajasthan

Objectives

1. To study knowledge and attitude about breastfeeding and newborn care in rural areas.
2. To study factors affecting breastfeeding and newborn care practices including weaning patterns in the selected rural areas.

Materials and Methods

Study Setting: Catchment villages of RHTC of GMC Pali

Study Design: Analytical cross sectional study

Study Participants: Mothers with children less than one year old.

Sample Size Selection: Considering the prevalence rate of adequate knowledge of breastfeeding to be 50% in Western Rajasthan rural areas (as no previous study was available), the sample size was determined using allowable error of 5% of prevalence after the substitution of values, $n = 4pq/d^2$, $p = 50$ (participants with Adequate knowledge), $q = (100-p) = 50$, d =relative permissible error = 5% of p, n = sample size, (n = 384). Three hundred and eighty four mothers that had a live baby of an age below one year in villages in a radius of 20 km around the RHTC made the estimated sample size.

Inclusion Criteria: All the mothers who gave birth within the last one year to a live baby

Mothers willing to participate in the study.

Exclusion Criteria: Mothers who delivered and stayed outside of the study area.

Mothers who were seriously ill and hospitalized.

Study Period – 3 months

Data Collection and analysis:

A pretested questionnaire was used and consecutive mothers of villages under RHTC were interviewed. The questionnaire (adapted from the questionnaires by the Division of Nutrition, Physical Activity, and Obesity, National Center for Chronic Disease Prevention and Health Promotion of CDC, Atlanta, USA) included socio-economic and demographic data, initiation and duration of breastfeeding, prelacteal feeds, supplementary

and complementary feeding /weaning practices and newborn care practices (cord care, eye care, immunization, growth monitoring)[7]. Three trained field volunteers after taking informed consent obtained information using questionnaire in vernacular language (translated and back translated). Twelve points on safe delivery, colostrum, initiation and duration of breastfeeding, time of first bath of newborn, cord care, eye care, weaning time and weaning foods, cord care, immunization and growth monitoring were asked for both knowledge assessment and actual practices from the participants and a score of less than six was taken as 'inadequate knowledge' and more than six incorrect breastfeeding and newborn and infant care practices were taken as 'poor practice'.

Statistical Analysis:

Data entered in Microsoft Excel was analyzed using Epi info Version 7.1. Qualitative variables were expressed by frequency and proportion and Quantitative variables were expressed using Mean and Standard deviation. Chi square and Fischer exact test were used to find the significant association between groups. A p- value less than 0.05 has been considered to be statistically significant.

Ethical Considerations

The study was approved by the Institutional Ethical committee approval of Government Medical College, Pali vide Letter No.EC/New/Inst/2022/0066/003 dated 5/2/2023.Written Informed Consent was obtained after explaining the objectives of the study and the participants were assured about confidentiality of data.

Observations and Results

In our study, 384 participants were enrolled for the study.

Table 1: Frequency Distribution of study participants demographic characteristics (n=384)

Variables	Frequency (%)
Age (in years)	
≤20	11 (03)
21-25	184 (48)
26-30	173 (45)
>30	16 (04)
Age at marriage (in years)	
≤20	64 (17)
21-25	208 (54)
26-30	97 (25)
>30	15 (04)
Education	
Illiterate	58 (15)
Primary	85 (22)
Secondary	65 (17)
High school	58 (15)
Higher secondary	54 (14)
Graduate and above	64 (17)
Socio- Economic status	
Upper (I)	34 (09)
Upper Middle (II)	73 (19)
Middle (III)	106 (28)
Lower Middle (IV)	112 (29)
Lower (V)	59 (15)
Parity	
1	114 (30)
2	158 (41)
>2	112 (29)
Place of Delivery	
Government hospital	289 (75)
Private hospital	87 (23)
Home	08 (02)
Type of Delivery	
Spontaneous Vaginal Deliveries (SVD)	295 (77)
Caesarean	89 (23)

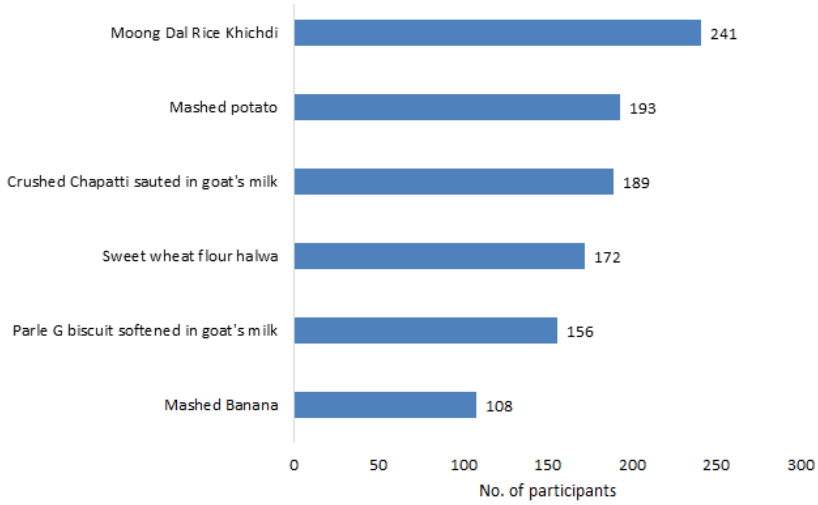
Table 1, shows the frequency distribution of study participants baseline characteristics. The maximum of 184 (48%) of participants are aged between 21-25 years. Most participants 208 (54%) were married between the ages of 21-25 years. Majority85 (22%) of participants have primary education. Most participants fall into the middle 106 (28%) and lower middle 112 (29%) socio-economic classes. The maximum 158 (41%) of participants have two children and most deliveries were carried out in government hospitals 289 (75%).

Table 2: Frequency Distribution of study participants practices on Breast feeding, weaning and new born care (n=384)

Variables	Frequency (%)
Cord Practices	
Knife	89 (23)
Scissors	269 (70)
Surgical Blade	26 (07)
Cord Dressing	
Spirit Swab	06 (02)
Talcum Powder	11 (03)
Cow Dung	08 (02)
Turmeric	16 (04)
None	343 (89)
Time of initiation of BF	
Within 1 hr	215 (56)
Within 4 hrs	89 (23)
Within 8 hrs	36 (09)
More than 8 hrs	44 (11)
Breast Feeding Practices#	
Colostrum Given	308 (80)
Prelacteal feed given	300 (86)
Exclusive breast feeding	46 (12)
Usage of Kajal	
Yes	250 (65)
No	134 (35)
Bathing	
Early Bathing	236 (61)
Delayed Bathing	148 (39)
Immunization as per age	
Yes	372(97)
No	12(3)
Growth Monitoring records in Mamta card (for recording immunization, weight &height of infants in Rajasthan)	
Yes	315(82)
No	69(18)

#Multiple response

Table 2, shows the frequency distribution of study participants practice on Breast feeding, weaning and newborn care. Majority of participants 343 (89%) did not apply anything on the umbilical cord. About 215 (56%) of participants initiated breastfeeding within one hour of delivery. About 80% of participants gave colostrum, while only 12% practiced exclusive breastfeeding.



#Multiple response

Figure 1: Frequency distribution of complementary weaning foods among study participants

Figure 1, shows maximum combination of complementary foods given to babies were Moong Dal Rice khichdi followed by mashed potatoes. Further age of weaning initiation was 3-5 months and mothers had knowledge of prolonged breastfeeding upto 24-27 months.

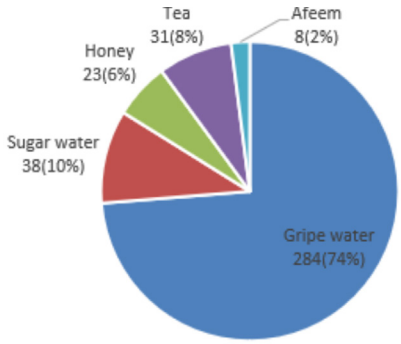


Figure 2: Frequency distribution of study participants pre lacteal /inaugural feeding

Figure 2, shows asprelacteal/inaugural feeds, three fourth of the participants gave gripe water (janam ghutti) followed by sugar water 10% respectively.

Table 3: Frequency distribution of study participants with adequate knowledge anf following correct practices of Breast feeding and newborn care (n=384)

Knowledge	Frequency (%)
Adequate knowledge	296 (77)
Inadequate knowledge	88 (23)
Practices	
Good Practice	180 (47)
Poor Practice	204 (53)

Table 3, shows 77% of the study participants had adequate knowledge and 47% followed correct practices on breast-feeding and new born care respectively.

Table 4: Association of study participants knowledge with demographic variables (n=384)

Variables	Adequate knowledge (%)	Inadequate knowledge (%)	p- value
Age (in years)			
≤20	08 (73)	03 (27)	0.35
21-25	145 (79)	39 (21)	
26-30	126 (73)	47 (27)	
>30	10 (63)	06 (37)	
Age at marriage (in years)			
≤20	45 (70)	19 (30)	0.01*
21-25	170 (82)	38 (18)	
26-30	65 (67)	32 (33)	
>30	09 (60)	06 (40)	
Education			
Illiterate	45 (78)	13 (22)	<0.01*
Primary	49 (58)	36 (42)	
Secondary	45 (69)	20 (31)	
High school	48 (83)	10 (17)	
Higher secondary	49 (91)	05 (09)	
Graduate and above	53 (83)	11 (17)	
Socio- Economic status			
Upper (I)	28 (82)	06 (18)	0.03*
Upper Middle (II)	63 (86)	10 (14)	
Middle (III)	74 (70)	32 (30)	
Lower Middle (IV)	85 (76)	27 (24)	
Lower (V)	39 (66)	20 (34)	
Parity			
1	104 (91)	10 (09)	<0.01*
2	89 (56)	69 (44)	
>2	96 (86)	16 (14)	

Place of Delivery			
Government hospital	229 (79)	60 (21)	<0.01*
Private hospital	54 (62)	33 (38)	
Home	06 (75)	02 (25)	
Type of Delivery			
SVD	224 (76)	71 (24)	0.57
Caesarean	65 (73)	24 (27)	

*p<0.05, statistically significant

Table 4: There was a significant association between age at marriage, education and knowledge; those who married younger had more inadequate knowledge. There was a strong association between education level and knowledge (p<0.01), with higher education correlating with better knowledge. A significant association was found (p<0.01) among those with one child and adequate knowledge.

Table 5: Association of study participants Practice on new born care with demographic variables (n=384)

Variables	Good Practice (%)	Poor Practice (%)	p-value
Age (in years)			
≤20	04 (36)	07 (64)	0.90
21-25	86 (47)	98 (53)	
26-30	82 (47)	91 (53)	
>30	08 (50)	08 (50)	
Age at marriage (in years)			
≤20	17 (27)	47 (73)	<0.01*
21-25	96 (46)	112 (54)	
26-30	58 (60)	39 (40)	
>30	09 (60)	06 (40)	
Education			
Illiterate	14 (24)	44 (76)	<0.01*
Primary	22 (26)	63 (74)	
Secondary	30 (46)	35 (54)	
High school	35 (60)	23 (40)	
Higher secondary	39 (72)	15 (28)	
Graduate and above	40 (63)	24 (37)	
Socio- Economic status			
Upper (I)	14 (41)	20 (59)	<0.01*
Upper Middle (II)	50 (68)	23 (32)	
Middle (III)	36 (34)	70 (66)	
Lower Middle (IV)	50 (45)	62 (55)	
Lower (V)	30 (51)	29 (49)	
Parity			
1	36 (32)	78 (68)	<0.01*
2	78 (49)	80 (51)	
>2	66 (59)	46 (41)	
Place of Delivery			
Government hospital	132 (46)	157 (54)	0.52
Private hospital	45 (52)	42 (48)	
Home	03 (38)	05 (63)	
Type of Delivery			
SVD	128 (43)	167 (57)	0.01*
Caesarean	52 (58)	37 (42)	

Table 5, shows that the distribution of good and poor practices is relatively consistent across all age groups. There was a statistically significant association between age at marriage and practices with p<0.05. Higher levels of education are associated with better practices, with p-value < 0.01. Participants from the Upper Middle (II) of socio-economic status group exhibit the highest percentage of good practices (68%).There was statistical significance between parity, and type of delivery with the good practices with (p-value<0.05) respectively.

Discussion

In our study majority of the mothers were between 21-25 years (48%) and age at marriage for most was 21-25 years (54%). About 15% of mothers were illiterate and majority of the mothers were para 2(41%) or primigravidae(30%). Our findings

are somewhat similar to the study by MB Singh et al done in Western Rajasthan [4].

Our study showed that 56% of the mothers initiated breastfeeding within one hour,19% used pre lacteal feeds. As per the study done in by Haldiya et al (1997), the 77% of rural women in Western Rajasthan discarded colostrum[3]. In our study,80% mothers fed colostrum and 86% gave prelacteal feed of gripe water /janam ghutti. Other studies have also found similar practices in the community [8,9,10].A study by K Madhu et al (2009)revealed that most of the mothers initiated breastfeeding (97%) within first two hours [10].

Exclusive Breastfeeding was just 12% in our study. In arid regions with frequent droughts and extremes of temperature, family members give water to the infant fearing dehydration. In studies done in Ethiopia, Uganda exclusive breastfeeding was found to be also very low and comparable to our study [11,12,13].

In our study, most mothers had initiated early breastfeeding and continued to breastfeed upto two years. Other studies conducted in rural areas show that almost all the mothers initiate breastfeeding and continue till beyond two years like in Puducherry by Vijay Lakshmi et al (2014)and in Chandigarh slums by Puri et al (2008) [14,15].

Weaning foods mainly consisted of moog dal khichdi, goat's milk with wheat rotis or biscuits. No tinned powder milk formulas or tetra packs were used. These findings are similar to the study by MB Singh et al [16] in the Thar desert where similar weaning foods were seen. Even in studies done by Arifeen et al and Dewey et al in countries like Bangladesh and Honduras respectively the use of powder milk and tetra packs was seldom seen due to poor economic conditions and ban on these products [17,18].

The mean age at food supplementation initiation was 3-5 months. Mean age forprolonged breast feeding was 27.1 months which was comparable to the study in Uttar Pradesh and Northern India done by Islam et al and Baqui et al respectively [19,20].

K Madhu et al (2009) found90% of the deliveries were hospital deliveries and 10% were home deliveries. An untrained birth attendant (40%) mainly gave the care provided during the home deliveries. In both in-hospital and home deliveries, nothing was applied for umbilical cord dressing (67%).Talcum powder (10%) and turmeric was used by some mothers for cord dressing[10]. In our study, 98% of the deliveries were hospital deliveries and only 2% were home deliveries. The care provided during the home deliveries was mainly given by traineddais (100%). In both hospital and home deliveries, nothing was applied for umbilical cord dressing (89%).

It was found that most of the newborns, 61%, were bathed within one hour after birth with luke warm water, which is lower than that reported by Manju Rahi et al.[6] which noted that a large percentage, 82.6%, of home delivered babies were bathed immediately after birth. The early bathing of newborns significantly increases risk of hypothermiaas stated by Semanew Y et al, Deshpande et al in Meghlat area of Maharashtra and by Abbad et al in Madhya Pradesh irrespective of the ambient temperature [11,21,22]. Other positive findings of our study were the high rates of immunization (97%) and growth monitoring (82%) were seen which are figures similar to the observations made by Yonzen et al in 6 districts of Rajasthan [23].

Limitations: This study is limited to one district only with a minimum study sample and needs prospective and qualitative studies to better understand the underlying causes behind incorrect practices.

Conclusions

Among the participants 77% mothers had good knowledge but only 47% had all correct practices of breastfeeding and newborn care. Community based health education intervention programmes involving ASHAS, AWWs, Local NGOs should aim at correcting the local incorrect practices like feeding pre lacteals, premature weaning, early bathing, applying kajal and prolonged breastfeeding.

The existing gap between knowledge and action can be filled by repeated emphasis on correct practices, which would help in achieving the desired proportion of ideal newborn care.

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Conflicts of Interest: The authors declare no conflict of interest.

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