



ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICES OF BREASTFEEDING AMONG MOTHERS WITH INFANTS

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ABSTRACT:

BACKGROUND: Breastfeeding is the practice ensuring a healthy and nutritious start in life. It makes a vital contribution to improvement of maternal and newborn health. Appropriate feeding practices are fundamental components for growth, development and nutrition of an infant. In the present study we have assessed the knowledge and attitude of mothers regarding breastfeeding, the actual practices followed by mothers, and factors influencing these practices.

METHOD: This hospital-based cross-sectional study was started from December 2020 to January 2021. Mothers were interviewed personally in Pediatrics OPD, with the help of a pre-tested semi-structured questionnaire, regarding their knowledge, attitude and practices of correct feeding practices. Associations between the outcome variables, and the independent variables, were tested using chi-square test.

RESULT: In the results, 64% of women started breastfeeding their infants within 2 hours. Practice of giving pre-lacteal feed was predominant in mothers delivered by caesarean section ($p < 0.0001$). 97% mothers were aware of the nutritive value of colostrum, while 93% infants received it. 85% of mothers were aware of EBF, while 74% mothers practiced it correctly. Significant association was observed between increasing maternal age and decrease in practice of EBF ($p = 0.015$). Complementary feeding practices were studied with respect to the time of initiation, and type of complementary feed given. Also, the association of knowledge and attitude of breastfeeding with different socio-economic class was found statistically significant ($p = 0.024$); the 'poor' score decreased with the increasing socio-economic class.

CONCLUSION: The knowledge, attitude and practices of breastfeeding are suboptimal and need emergence of awareness among the mothers included in the study.

KEYWORDS: Breastfeeding, Complementary feeding, Colostrum, Exclusive Breastfeeding, Pre-lacteal Feed.

INTRODUCTION:

Mothers and babies form an indivisible biological, and social unit. The health and nutrition of one cannot be dissociated from that of the other. World Health Organization (WHO) and United Nations Integrated Children's Fund (UNICEF) jointly developed the Global Strategy for Infant and Young Child Feeding (IYCF), to revitalize attention of the world, to the impact that feeding practices have on the nutritional status, growth and development, and health of infants, and young children. ^[1] The Global Strategy is based on the evidence of the significance of nutrition in the early life, and of the crucial role that appropriate feeding practices play in achieving optimal health outcomes. ^[1]

Breastfeeding is an incomparable way of providing ideal food for the healthy growth and development of infants. It is also an integral part of the reproductive process, with important implications for the health of mothers. ^[2] In addition to being a natural act, breastfeeding also is a learned behaviour. Essentially, all mothers can breastfeed, provided they have accurate information and support within their families, communities, and the

health care system. Breast milk contains all the nutrients an infant needs in the first six months of life, and provides protection against conditions like gastrointestinal infections, respiratory illness, allergies, type II diabetes mellitus, leukemia, and also the possibility of obesity in later life. Breastfeeding is also linked with higher intelligence quotient (IQ) in children. [2-5]

The present study was a hospital-based cross-sectional study and was conducted at Pediatric OPD, Government Medical College and Hospital (GMCH), Akola. The strength of this study was that, it included qualitative as well as quantitative data. However, the limitation of this study was that, as the information was obtained from mothers having children aged up to 12 months, it was prone to recall bias. Data collection was done with the help of pre-tested, pre-formed, semi-structured questionnaire, framed by IYCF. Assessment of correct knowledge and correct practice regarding breastfeeding was done with respect to the following core indicators [6]: Early initiation of breastfeeding, Pre-lacteal feeds, Practice of colostrum feeding, Exclusive breastfeeding, Complementary feeding and Bottle feeding.

In the present study, an assessment of knowledge of mothers, their source of knowledge about various feeding practices, what they have actually practiced, and their association with socio-economic factors and pre-existing conditions was assessed by using appropriate statistical tools. Findings from this study will aid in the promotion of optimal breastfeeding feeding practices in Akola, and its surrounding districts. Thus, the rationale behind selection of this topic for study was that, poor feeding practices are a major threat to social and economic development, they are among the most serious obstacles to attaining and maintaining better health of infants. The Indian demographic and health surveys have shown a declining trend in child mortality rate; however, the current rates remain still high. This necessitates concrete efforts to increase the coverage of known cost-effective interventions to enable India to attain the goal of reducing child mortality. Thus, this study was done with an objective of understanding the prevalent breastfeeding practices, source of their knowledge and, the attitude of mothers belonging to different cultural background and socio-economic classes.

METHODOLOGY:

A hospital based cross-sectional study was conducted in Pediatrics OPD, Government Medical College and Hospital (GMCH), Akola. The study was conducted during the period of two months, December 2020 and January 2021 after obtaining the approval from Institutional Ethical Committee, GMCH, Akola for conducting this study. Study included 100 mothers having children in infancy. A written informed consent was obtained from the eligible mother, explaining the purpose of the research, and giving her an assurance of confidentiality. Those who did not consent were excluded. Twins, infants of HIV positive mothers, and those with illnesses, which required hospitalization or referral, were excluded.

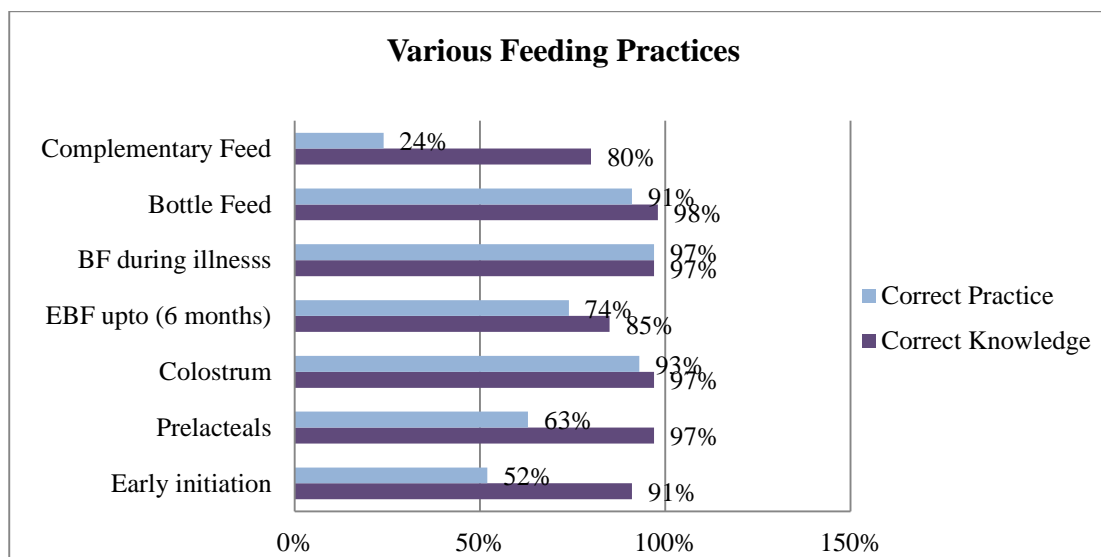
Data were collected by re-formatting the pre-tested, pre-formed, semi-structured questionnaire framed by IYCF, making it feasible for survey conventions in Akola; which was used during face-to-face interviews with the mothers. The collected data included information regarding the socio-economic profile, knowledge, attitudes, and practices towards breastfeeding and complementary feeding of the participants. This questionnaire was also tested on 25 eligible mothers, as a pilot study to test the reliability of the questions, and the time needed to conduct an interview with a mother. The necessary corrections and adjustments were done thereafter.

The data of correct knowledge, correct attitude, and correct practices of breastfeeding and the socio-economic profile of mothers was collected, compiled and coded in Microsoft Excel 2019® worksheet and analyzed by a 'scoring system'. A correct answer to the question was scored as '1', and, incorrect or "don't know" answer was scored as '0'. Assessment of attitude towards breastfeeding was done with respect to various feeding practices, and data obtained from socio-economic profile, education, and source of information of each participant. To assess the knowledge, attitude, and practices (KAP) in accordance with good, average or poor, 'Mean Score' and 'Standard deviation' (SD) was calculated and categorized accordingly. In all the criteria (i.e., KAP), participant with a score less than [Mean Score – SD] was considered as 'Poor', [Mean Score – SD] to [Mean Score + SD] as 'Average', and a score more than [Mean Score + SD] as 'Good'. Special attention was given to the delivery and birth details, to search for any pre-existing factors hampering correct breastfeeding practices. The socio-economic class of each mother was calculated by modified BG Prasad's classification (2019), which gave an insight to the share of monthly family income (per capita) being contributed to the health and welfare of the infant. Correct knowledge and correct practices of breastfeeding was assessed in percentage, representing them in tabular form, or graphical representation. Statistical analysis was done in Open epi online calculator.

RESULTS:**Table 1: Baseline data of infants and mothers to assess socio-economic profile (N=100)**

AGE OF INFANT:	PERCENTAGE (x of N)
0 – 3 months	40% (40 of 100)
4 – 6 months	31% (31 of 100)
7 – 9 months	9% (9 of 100)
10 – 12 months	20% (20 of 100)
GENDER OF INFANTS:	PERCENTAGE (x of N)
Male	66% (66 of 100)
Female	34% (34 of 100)
BIRTH ORDER:	PERCENTAGE (x of N)
First	50% (50 of 100)
Second	32% (32 of 100)
Third and above	18% (18 of 100)
BIRTH WEIGHT:	PERCENTAGE (x of N)
Less than 2.5 kg	12% (12 of 100)
More than or equal to 2.5 kg	88% (88 of 100)
AGE OF MOTHER:	PERCENTAGE (x of N)
Less than 25 years	46% (46 of 100)
25 to 30 years	48% (48 of 100)
More than 30 years	6% (6 of 100)
RELIGION:	PERCENTAGE (x of N)
Hindu	81% (81 of 100)
Muslim	18% (18 of 100)
Others (Buddhist, Christian, etc.)	-
EDUCATION OF MOTHER:	PERCENTAGE (x/N)
Illiterate	5% (5 of 100)
Less than 12 th standard	42% (42 of 100)
More than or equal to 12 th standard	53% (53 of 100)
OCCUPATION OF MOTHER:	PERCENTAGE (x of N)
Housewife	88% (88 of 100)
Working	12% (12 of 100)
PLACE OF RESIDENCE:	PERCENTAGE (x of N)
Urban	58% (58 of 100)
Rural	42% (42 of 100)
SOCIO-ECONOMIC STATUS:	PERCENTAGE (x of N)
Class I	15% (15 of 100)
Class II	19% (19 of 100)
Class III	29% (29 of 100)
Class IV	30% (30 of 100)
Class V	7% (7 of 100)

Table 1: Shows that majority of the mothers belonged to Class IV (30%), that is, lower middle class, with per-capita income ranging from Rs.812 to 1569 according to Modified BG Prasad's classification (2014). 53% mothers had passed 12th standard, with some being graduate (17%) and postgraduate (5%); 6% mothers were illiterate. 46% mothers were below the age of 25 years. 58% mothers were residing in urban areas and 42% mothers came from rural areas in and around Akola district. Most women belonged to Hindu religion (81%) followed by Muslim religion (18%). About 88% were housewives while 12% were working women. 71% infants were less than 6 months of age, and 29% were more than 6 months of which, 50% infants were the first child of mother.

Graph 1: Knowledge and practice of various breastfeeding practices observed in study.

Graph 1: Shows that 97% women were aware about the importance of colostrum of which 93% babies were fed with colostrum, and 4% mothers discarded colostrum, due to inability of the baby to suckle while 3% in all, discarded it due to traditional customs. 97% of mothers had correct knowledge about pre-lacteals but a large number (34%) had used pre-lacteals. 85% females were aware that EBF should be continued up to six months of life, and about 74% mothers practiced EBF correctly. Breastfeeding during illness was correctly practiced by 97% of the mothers. 98% of the mothers were aware that bottle-feed should not be given and 91% had never used bottles. 80.49% of mothers giving complementary feed had correct knowledge, but only 23.66% practiced it correctly.

Table 2: Association of various socio-economic classes with knowledge, attitude and practices of breastfeeding.

SCORE SES	KNOWLEDGE % (n)			ATTITUDE % (n)			PRACTICE % (n)		
	GOOD (> 5)	AVERAGE (4-5)	POOR (0-3)	GOOD (>5)	AVERAGE (3-5)	POOR (0-3)	GOOD (>5)	AVERAGE (4-5)	POOR (0-3)
CLASS I (N=15)	86.66% (13)	13.33% (2)	0% (0)	86.66% (13)	13.33% (2)	0% (0)	33.33% (5)	40% (6)	26.66% (4)
CLASS II (N=19)	84.21% (16)	10.52% (2)	5.26% (1)	84.21% (16)	10.52% (2)	5.26% (1)	47.36% (9)	36.84% (7)	15.78% (3)
CLASS III (N=29)	51.72% (15)	37.93% (11)	10.34% (3)	51.72% (15)	37.93% (11)	10.34% (3)	44.82% (13)	17.24% (5)	37.93% (11)
CLASS IV (N=30)	76.66% (23)	6.66% (2)	16.66% (5)	76.66% (23)	6.66% (2)	16.66% (5)	50% (15)	26.66% (8)	23.66% (7)
CLASS V (N=7)	42.85% (3)	28.57% (2)	28.57% (2)	42.85% (3)	28.57% (2)	28.57% (2)	42.85% (3)	14.28% (1)	42.85% (3)
TOTAL =100	$\chi^2= 17.7$; d.f=8; p= 0.024			$\chi^2=17.7$; d.f=8; p= 0.024			$\chi^2=6.54$; d.f=8; p= 0.587		

Table 2: Shows association of knowledge, attitude and practice of breastfeeding with socio-economic classes according to modified BG Prasad's classification. There is statistically significant association found with knowledge an attitude of breastfeeding with 'p' value less than 0.05.

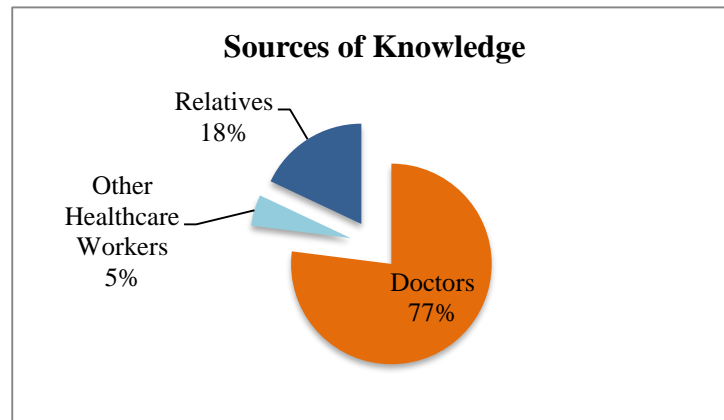
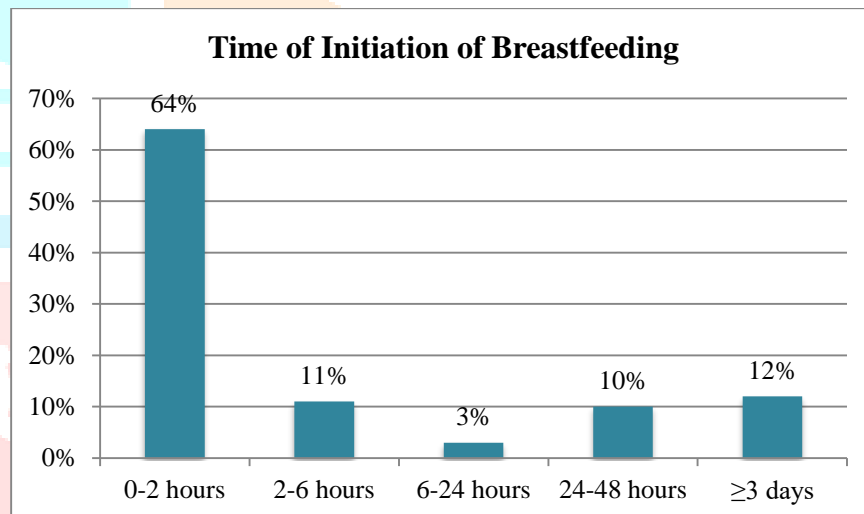
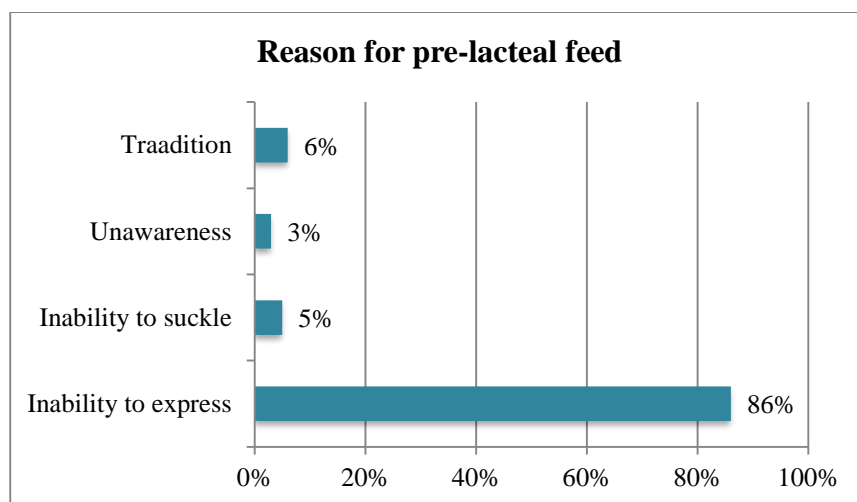
Diagram 1: Source of breastfeeding related knowledge in mother

Diagram 1: Shows that doctors (77%) are the main source of knowledge about breastfeeding among the study group, followed by relatives (18%), and then by other healthcare workers (5%), like nurse, ASHA, etc.

Graph 2: Various observations concerning time of initiation of breastfeeding

Graph 2: Shows that around 64% of mothers had started breastfeeding within two hours of birth. 11% of mothers had not breastfed within six hours of the infant's life. 9% of mothers were unaware of the time of initiation whereas 39% were unable to express milk within one hour.

Graph 3: Reason for pre-lacteal feeding practices.

Graph 3: Shows the reasons for pre-lacteal feeding. 86% (32 of 37) were unable to express milk, while 6% (2 of 37) mothers gave pre-lacteals as a tradition. Most commonly used pre-lacteal feed was animal milk (68%), followed by infant formula feed (27%). Honey was given as a tradition by 3%, and gripe water due to unawareness by 3%.

Table 3: Association of type of delivery with pre-lacteal feeding practice

TYPE OF DELIVERY	PRE-LACTEALS		TOTAL
	GIVEN	NOT GIVEN	
Cesarean Section	28	16	44
Normal Delivery	9	47	56
Total	37	63	100
$\chi^2=23.9$; d.f=1; p=0.000			

Table 3: Shows **statistically significant** association between mothers undergoing cesarean section and giving pre-lacteal feed with chi-square value of 23.9 and 'p' value 0.000 which is less than 0.05.

Table 4: Relation of exclusive breastfeeding (EBF) with Education, age and parity

EDUCATION	EBF	NON-EBF	TOTAL
Illiterate	3	2	5
< 12 th standard	28	14	42
≥ 12 th standard	43	10	53
Total	74	27	100
$\chi^2=3.08$; d.f= 2; p= 0.214			
PARITY	EBF	NON-EBF	TOTAL
One child	38	12	50
Two children	23	9	32
3 or more	13	5	18
Total	74	26	100
$\chi^2= 0.209$; d.f=2; p=0.901			

AGE OF MOTHER	EBF	NON-EBF	TOTAL
Less than 25 years	37	9	46
25 to 30 years	28	20	48
More than 30 years	2	4	6
Total	67	33	100

$\chi^2 = 8.46$; d.f=2; **p=0.015**

Table 3: Shows association between education, parity, and age of mother with practice of exclusive breastfeeding up to six months of life. There is no statistically significant association between the education and parity with correct practice of EBF, with 'p-values' 0.214 and 0.901 (>0.05) respectively. Age of mother shows **statistically significant** association with practice of EBF, with chi-square value of 8.46 and 'p-value' 0.015 which is <0.05.

Diagram 2: Observations regarding frequency of Breastfeeding

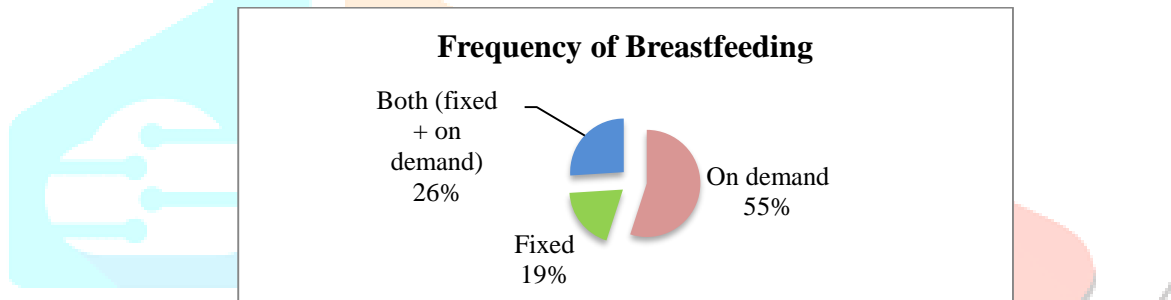
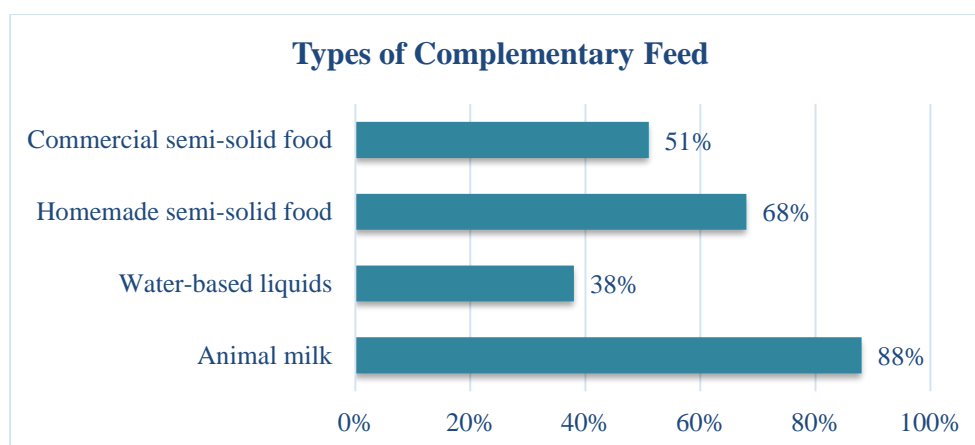


Diagram 3: Shows the category of breastfeeding frequency followed by the mothers among study group. Majority (55%) of mothers followed on demand feeding, while 26% and 19% mothers followed both (fixed time and on demand feeding) and fixed time for feeding their infants respectively.

Table 5: Observations regarding complementary feeding

TIME OF INITIATION	PERCENTAGE (x of N)
Less than 6 months	46.34% (19 of 41)
6 to 8 months	36.58% (15 of 41)
8 to 12 months	17.07% (7 of 41)

Table 5: Shows time of initiation of complementary feeding, with 41 mothers out of 100 practicing complementary feeding. Of these, 46.34% (19) mothers had initiated complementary feeding before 6 months, 36.58% (15) mothers initiated it between 6 to 8 months, while 17.07% (7) mothers initiated it after 8 months of age of their infant.

Graph 4: Types of complementary feed

Graph 4: Shows that animal milk forms the major part (88%) of complementary food, followed by homemade semi-solid or solid foodstuffs (68%). Commercial semi-solid or solid foodstuffs form 51% while water-based liquids form 38% of the types of complementary foodstuffs given to the infants.

DISCUSSION:

The present study was a hospital-based study conducted on Out Patient (OPD) basis, with 100 mothers enrolled in the study. The participants selected for this study consisted of relatively healthy mothers and infants to reduce the probability of selection bias. The principle of pre-formed and semi-structured questionnaire method of survey was to make the study reliable and partaking for both, the participant and the interviewer.

Majority (46%) of mothers belonged to the age group of 20-25 years and 6% were more than 30 years of age. 56% of mothers had normal delivery and 44% had a Cesarean Section. Out of 100 infants, 88% had normal birth weight, that is more than or equal to 2.5 kg, which signifies majority of normal cohort study group. 71% of infants belonged to age group 0-6 months, which not only reduced the chances of recall bias regarding various breastfeeding practices, but also gave an opportunity to explain the correct practices to be followed; this helped achieve proposed intervention of creating awareness. 95% mothers were literate, 53% had passed 12th standard, of which 17% were graduate, and 5% were post-graduate. Majority of the mothers were housewives (88%). Mothers belonging to the Class III (29%) and IV (30%), comprising of lower middle-class population, were found in majority. Present study revealed that 28.57% of mothers belonging to Class V had 'poor knowledge', while that of mothers belonging to Class I accounted for 0% 'poor knowledge' and majority (86.66%) scored for 'good knowledge' category. The proportion of mothers who scored for 'poor attitude' decreased with their increasing socio-economic status. In this study, the association between the socio-economic status of the mothers, and the Knowledge and Attitude of mothers about breastfeeding was found to be statistically significant, while it was not significant in terms of practice.

About 50% mothers had one child, making it possible to explain the correct practices for subsequent children. It was a significant finding that all mothers in the study had undergone institutional deliveries, with 47% and 43% being delivered in Government tertiary healthcare centers and private nursing homes respectively; 10% being delivered in primary health care (PHC) centers. The higher rate of institutional deliveries can be attributed to better primary health care services. Also, it was reported that doctors (77%) and other health care workers like nurse, ASHA (5%) played a major role as source of knowledge of breastfeeding.

64% mothers-initiated breastfeeding within two hours of birth and, 22% mothers-initiated breastfeeding after 24-72 hours of birth. On evaluating the reasons of delayed initiation, it was found that post-operative pain, and shifting of baby to neonatal intensive care unit for observation after cesarean delivery were main reasons, followed by inadequate lactation, tradition, and lack of knowledge. In the present study, majority of mothers (37%) fed their newborns with pre-lacteal feeds, in spite of 97% having the correct knowledge about them. A significant association was found; that mothers delivered by cesarean section practiced pre-lacteal feeding more (28 of 44 i.e., 63.63%) than those delivered normally (9 of 56 i.e., 16.07%). A similar study by Nigam et al ^[40]

reported 33% delay in initiation was due to cesarean section, other reason being inadequate lactation (29.28%) and local customs (21.4%). Majority of the mothers (93%) had fed neonates with colostrum. In contrast, a study by Devang Rawal et al ^[41] at Bhavnagar in Gujarat, the practice of colostrum feeding was in 36.9% of infants.

In global nutrition target 2025 WHO mentioned that only 38% of infants aged 0 to 6 months are practicing EBF globally ^[23]. It targets to increase this rate to at least 50%. EBF was known to 85% of the study population, of which, 74% mothers practiced EBF correctly. A similar study by Kotiratnam K at Khammam mentioned a good rate of knowledge about EBF (85%). ^[42] A decreasing trend of practicing EBF was observed in accordance to increasing age of the mother. In the present study, it was observed that 80.43% (37 of 46) mothers having an age less than 25 years correctly practiced EBF as compared to 58.33% (28 of 48) mothers aged from 25 to 30 years, and 33.33% (2 of 6) more than 30 years of age. Results of the present study revealed that there was a statistically significant association existing between increasing age of the mothers and the decreasing practice of EBF for 6 months of the life of the infant; whereas there was no statistically significant association found between practice of EBF, and education and parity of the mothers. Most of the mothers (55%) breastfed their infants on-demand. Similarly, it was found to be 54.1% in a study in Bengal 18. ^[43] In yet another study at Kanpur 19, it was found to be only 38%. ^[36]

In the present study, among the mothers who had initiated complementary feeding, 46.34% initiated it before 6 months of age of infant, while 17.07% initiated it late, that is, after 8 months of age of infant. 88% of them gave animal milk, in addition to either homemade (68%), or commercial (51%) semi-solid and/or solid foodstuffs. Homemade semi-solid food most commonly constituted dal and rice, khichadi, cereal, porridge, roti and milk. Commercial foodstuffs were biscuits or bread with milk, and baby formula. Water-based liquids like tea and canned fruit-juice formed 38% of complementary foodstuffs.

CONCLUSION:

Incorrect feeding practices are common in mothers visiting Pediatric OPD at GMCH, Akola. This study emphasizes the need for breastfeeding intervention programs, especially during antenatal and postnatal follow-up. Among the well-informed mothers, few of them did not practice it due to factors like lower age at which pregnancy occurred and socio-cultural practices. Even though all the children of the participants were breastfed, the correct knowledge and practices were low. Efforts need to be made to help the mother to initiate feeding early especially in caesarean section. Most of the infants had been given water, as their parents or relatives thought that child needs water during summer season due to the prevalent hot climate of Akola, thus causing early cessation of EBF. The fact that breastmilk itself would quench the thirst and sate the hunger of infants for the first six months of life, is a very important message that has to be conveyed to the mothers. Hence, knowledge regarding advantages and duration of EBF needs to be provided to the community more intensively by every possible source, like educational institutions, health personnel, and media. The present study concludes that the knowledge, attitude and practices of breastfeeding were sub-optimal among the mothers coming from various rural as well as urban areas in and around Akola district.

ACKNOWLEDGEMENT:

This study was funded by ICMR. The Author is grateful for the support.

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