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Achieving optimal breastfeeding: Preparedness of Residents and Nurses

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Introduction

- Breast feeding is the optimal source of nutrition for a newborn. Knowledge & practices of health providers during the delivery & postpartum period have an impact on breastfeeding. Timely initiation of effective breastfeeding has important role in preventing under-nutrition. Baby Friendly Hospital Initiative (BFHI) ten steps highlight this[1].The BFHI was implemented in the year 1992 in India.
- According to a Meta-Analysis done on 278 articles across 48 countries globally on the implementation and correct practices of BHFI; there was evidence seen that that the potential of BFHI had not been realised beyond the initial countries in which it was first implemented. There was a need seen to evaluate and recognise incremental improvements in breastfeeding related maternity care practices[2]
- Considering the fact, this study was planned to identify the status of implementation of BFHI 'ten'steps& knowledge & practices about the breastfeeding in health care workers who are closely involved in intra & postnatal care[3].

Materials and Methods

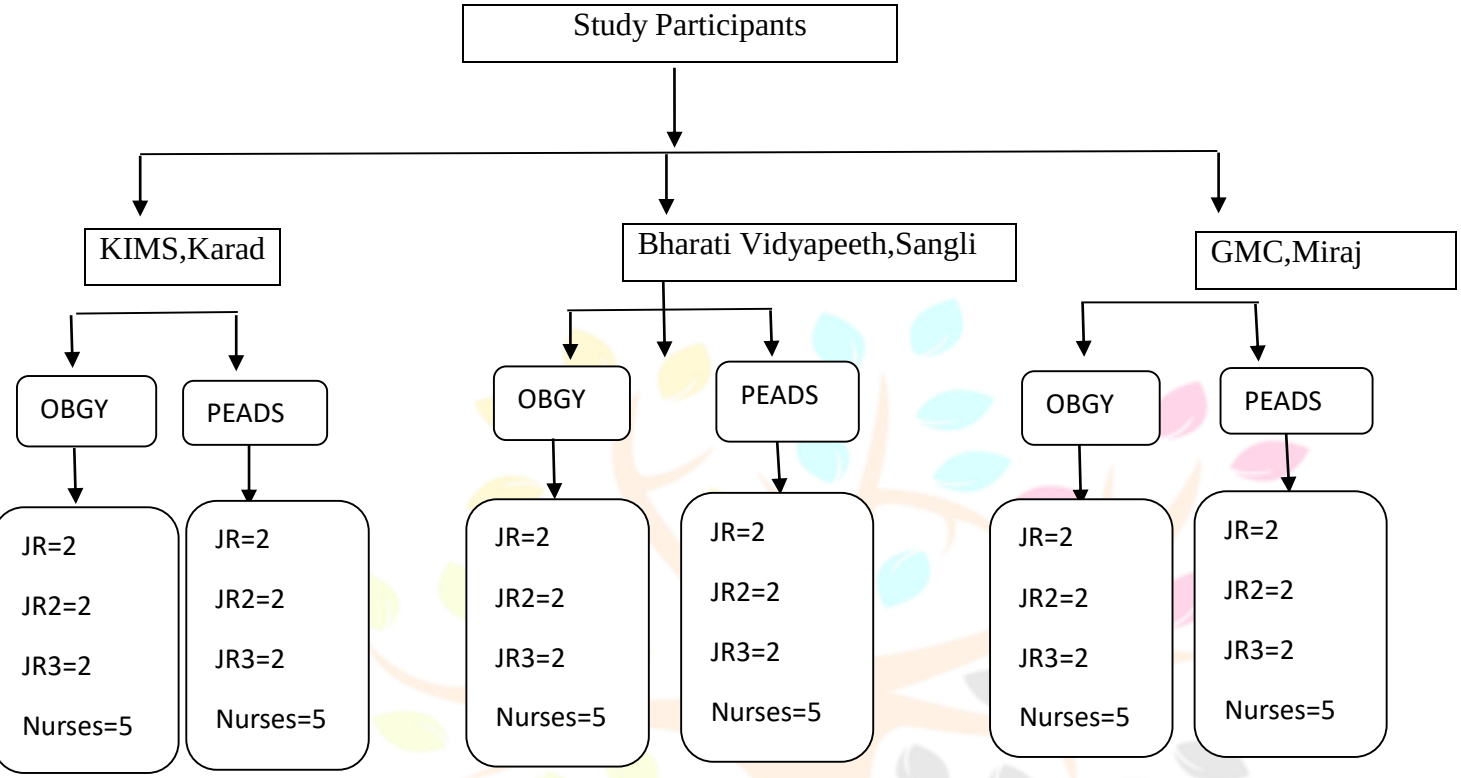
This was a cross-sectional analytical study. The study was conducted in three teaching hospitals from Karad, Sangli and Miraj having post-graduate departments of Obstetrics and Gynaecology, and Paediatrics.

The study subjects from three teaching hospitals of the medical colleges were included with the help of Consecutive sampling technique. The sample size was calculated using the following formula:-

$N=Z^2pq/L^2$

=4x80x20/10

=64



Hence 22 postgraduate students and 22 nurses from Dept. of Obs-Gyn & Dept. of Pediatrics of KIMS, Karad, Government Medical College, Miraj and Bharati Vidyapeeth, Sangli were enrolled (Fig 1).

Ethical clearance was obtained from Institutional Ethic Committee prior to the commencement of the study. Permission was taken from HoI of selected Medical Colleges. IEC from the selected medical colleges was also obtained. Informed and written consent was taken from all study participants. Privacy of the participants was maintained and the data kept securely with the principal investigator. For the data collection, hardcopies of the questionnaire were printed and distributed among the PG residents and Nurses of OBG unit and paediatrics unit.

Prior to the data collection process HoDs of the concerned departments of respective Medical Colleges were informed about the study and IEC clearance. Briefing was given to the residents and nurses regarding the study.

Study tool: Questionnaire was developed with the help of published articles & experts. It was validated from Professors of Obstetrics and Gynaecology, Paediatrics and Community Medicine. Construct validation was done by conducting pilot study. Questionnaire included following variables

1) Socio-demographic: i) Years of experience ii) Profession iii) Department

2) Questions on Knowledge & practices about the breast-feeding.

E.g. of knowledge questions: -

When should first breastfeed be given after normal delivery, enlist the hunger cues, is colostrum sufficient to satisfy baby's hunger, is it important to not allow the baby to feed from a breast infected with mastitis, signs of effective breastfeeding, good positions to breast feed after operative procedure, can breast milk be stored, is breastfeeding incompatible with working mothers, are breastfed infants likely to have fewer infections than formula fed infants, is breastfeeding contraindicated for HIV positive mothers, should mothers be educated on breastfeeding and if yes when, name the hormones related to breastfeeding, mention the signs of good attachment, what are the reflexes related to breastfeeding, what are the criteria for discharging a healthy new born, the role of doctors in breastfeeding and the role of nurses in breastfeeding.

E.g. of Practice questions: -

How should breastfeed be given (on demand or round the clock every 2-3 hours), exclusive breastfeeding should be done for how many months, the ideal time to start breastfeeding for babies, is giving glucose water or prelactal feeds necessary till mother's milk sets in, how to do breastfeeding (complete one breast or give both breast some amount each)

Statistical Analysis: Data was entered in Microsoft Excel Sheet. Summarization and analysis of data was carried out by using Software; Statistical Package for Social Sciences (SPSS version 28). Minimum, maximum, mean and SD was calculated of knowledge and practice score as per participant status; JR 1, JR 2, JR 3 and Nurses. Comparison of scores was done using One Way ANOVA followed by Post Hoc test: Tukey Multiple Comparison Test.

Results: -

Total study subjects were 66. Total JR were 36 (55%). Out of that JR1=12(18%), JR2=12(18%), JR3=12(18%) and nurses were 30(45%)

Experience: - Minimum=8 Maximum=13 for staff-nurses

Minimum=1 Maximum=3 for Doctors (JR)

Table 1: - Descriptive statistics about knowledge and practices of breastfeeding among junior residents and staff nurses

Profession		**knowledge (score out of 46)**	**knowledge (%)**	**practice (score out of 5)**	**practice (%)**
JR 1 N=12	Minimum	16.00	34.78	1.00	20.00
	Maximum	37.00	80.43	5.00	100.00
	Mean	28.9167	62.8623	3.2500	65.0000
	Std. Deviation	5.599	12.173	1.288	25.761
JR 2	Minimum	28.00	60.87	3.00	60.00

N=12	Maximum	38.00	82.61	5.00	100.00
	Mean	33.916	73.731	4.166	83.333
	Std. Deviation	3.528	7.669	0.577	11.547
JR 3 N=12	Minimum	29.00	63.04	4.00	80.00
	Maximum	42.00	91.30	5.00	100.00
	Mean	38.500	83.695	4.666	93.333
	Std. Deviation	3.896	8.470	0.492	9.847
staff nurse N=30	Minimum	17.00	36.96	1.00	20.00
	Maximum	32.00	69.57	4.00	80.00
	Mean	25.20	54.782	2.433	48.666
	Std. Deviation	3.033	6.593	0.626	12.521

Table1 shows a descriptive statistics like range, mean & SD about the knowledge and practice regarding breastfeeding amongst the study subjects. Highest score in knowledge was observed in JR3 (42, 91.30%) and the lowest in JR1 (16, 34.78%) followed by nurses (17, 36.96%).

In Practise the highest score was achieved by JR3 (5,100%) whereas the lowest was seen in JR1 & staff nurses (1, 20%).

Table 2: - Knowledge score among JR &Nurses

Profession	Group knowledge			Total
	<50% n(%)	50-70% n(%)	>=70% n(%)	
JR1	1(8.3)	9(75.0)	2(16.7)	12(100)
JR2	0	5(41.7)	7(58.3)	12(100)
JR3	0	1(8.3)	11(91.7)	12(100)
staff nurse	3(10.0)	27(90.0)	0	30(100)
total	4(6.1)	42(63.6)	20(30.3)	66(100)

It is seen that for knowledge regarding the correct practices of breastfeeding and its related components was highest among the 3rd year residents. The 2nd year residents had average score of 58.3% with 7 residents having good knowledge about breastfeeding practices. Majority of the nurses (27 among the 30) showed moderate level (50-70%) of understanding regarding the correct practices of breastfeeding. Therefore, regarding knowledge about breastfeeding JR3 scored the highest whereas Staff nurses scored the lowest. (Table2)

Table 3:- Practice score among JR and staff-nurses

Profession	Practice Score			Total
	<50% n(%)	50-70% n(%)	>=70% n(%)	
JR 1	4 (33.3)	2 (16.70)	6 (50.0)	12(100)
JR 2	0	1(8.30)	11(91.70)	12(100)
JR 3	0	0	12(100)	12(100)
Staff Nurse	17(56.70)	12(40.00)	1(3.30)	30(100)
Total	21	15	30	66

For the correct practices which should be followed during breastfeeding,3rd year residents demonstrated excellent knowledge with a score of 100%. 2nd year residents also had a good score of 91.70% with a correct total of more than 70%. 1st year residents had a score of less than 50% correct practices among 33.30% of participants whereas 50% of the participants secured a score of more 70% correct answers. In staff nurses, 56.70% secured a score less than 50%, 40% of them had a score ranging from 50-70%. Therefore regarding practices related to breastfeeding JR3 scored the highest whereas staff-nurse scored the lowest.(table 3)

Table 4:- Experience wise knowledge and practise statistics among the nurses

Staff nurse experience		Knowledge (Score out of 46)	Practice (score out of 5)
8-9 yrs	N	9	9
	Minimum	20.00	2.00
	Maximum	32.00	4.00
	Mean	26.11	2.333
	SD	3.29	0.71
10-11 yrs	N	11	11
	Minimum	17.00	1.00
	Maximum	30.00	3.00
	Mean	24.81	2.36
	SD	3.68	.674
12-15 yrs	N	10	10
	Minimum	23.00	2.00
	Maximum	28.00	3.00
	Mean	24.80	2.60
	SD	1.93	.516

Table 4 shows experience wise there is no significant difference in mean knowledge score (ANOVA F=0.563, p=0.576) and practice score (ANOVA F=0.520, p=0.601) of nurses about breast feeding. This indicates knowledge and practice doesn't increase with experience among nurses.

All the participants (100%) knew correctly that exclusive breastfeeding has to be done for 6 months. Most of the nurses (87%) think that breastfeeding should be done every 2-3 hours and not on demand. The assessment of

signs of effective breastfeeding revealed that 50% JR1, 81.7% JR2, 90% JR3 and 54.8% nurses had correct knowledge. 'Intermittent episodes of rhythmic sucking with audible swallows should be heard' is the least answered whereas baby sleeps after taking breastfeed is the most common sign answered (97%).Signs of good attachments JR1(60.4%), JR2(83.4%), JR3(93.75%) and staff nurse (63%).The most common sign answered was, baby's mouth is wide open(92.5%) and 'areola visible above the baby's mouth' was the least answered. Reflexes related to breastfeeding JR1(58.35%), JR2(72.9%), JR3(89.6%) and nurses (48.4%). Gag was least answered (26%) whereas sucking was most commonly answered (100%). Majority participants (54%) answered that breastfeeding should be initiated within 1 hour of normal delivery.JR1 (75%), JR2(100%), JR3(100%) &nurses (35.5%) answered that colostrum is sufficient to satisfy baby's hunger. As for the huger cues, crying was the most commonly answered (95.5%) whereas stirring was the least answered (17.9%). For good positions to do breastfeeding after operative procedures, only 15% have answered football position and 52% answered side-lying.

For the storage of breastmilk, JR1(25%), JR2(8%), JR3(0%) and nurses (32%) think that breastmilk cannot be stored and only way to feed the infant with breastmilk is by direct breastfeed or by expression of milk and immediate feeds by paladai and katori-spoon.

14% JR doctors and 32% nurses think that breastfeeding is incompatible with working mothers. 95% JR doctors and 90% answered that breastfed babies are likely to have fewer infections than a formula fed baby and JR1 33%, JR2 8% and nurses 3%have answered that giving glucose water is recommended after breastfeeding to help satisfy an infant until the mother's milk comes in.

JR1(58%),JR2(66.7),JR3(33.3%) and staff-nurse(77%) have answered that breastfeeding **should not** be completed on one breast and little milk from both breast should be given.

As for the hormones related to breastfeeding, 81% have answered oxytocin and 61% have prolactin.

Discussion: - This study was carried among healthcare profession working in the department of Obstetrics and gynaecology and Paediatrics. Three tertiary care hospitals were selected from nearby districts by cluster sampling technique. All the participants (100%) knew correctly that exclusive breastfeeding has to be done for 6 months. Most of the nurses (87%) think that breastfeeding should be done every 2-3hours and not on demand, whereas JR1(41%), JR2(8%) and JR3(0%) think that breastfeeding done round the clock and not on demand.

In a similar study done in a tertiary hospital in Eastern India, all doctors (100%) and nurses (100%) agreed that breastfeeding must be started within 1 h of birth, whereas in this study it is doctors (64%) and nurses (42%). All nurses (100%) and 94.1% of doctors agreed that breastfeeding alone is sufficient for a newborn baby during the first 2–3 days of life. And in this study doctors (92%) and nurses (35%). However, 8.8% of doctors and 6.1% of nurses felt that in case of caesarean sections, newborns should be given milk in addition to breastfeeds on the first day of life; in this study its doctors (20%) and nurses (3%). Only 52.9% of doctors and 40.2% of nurses agreed that breastfeeding should be advised to be continued for 2 years and beyond, whereas in our study its doctors

(95%) and nurses (90%). As many as 14.7% of doctors and 3% of nurses were of the opinion that in the first 6 months of life of an infant, water per mouth can be given in addition to breastfeeds; in this study doctors (20%) and nurses (3%) have agreed to this. Though almost all nurses agreed that breastfeeding for a normal newborn should be on demand only and not by clock, only 67.6% of the doctors believed it, in this study doctors (86%) and nurses (13%) have agreed to on demand feeding[4].

Comparison of Results of a study conducted in doctors and nurses in tertiary hospital in Eastern India & present study

Sr. No	**Question**	Tertiary hospital in Eastern India		Tertiary hospital in Present study Western India	
		Doctors (agree)N = 34	**Nurses (agree)N = 97**	**JR N=36**	**Nurses N=30**
1	Breastfeeding must be started within 1 h of birth	34 (100)	97 (100)	23 (64)	13 (42)
2	Breastfeeding alone is sufficient for a newborn baby in the first 2–3 days of life	32 (94.1)	97 (100)	33 (92)	11 (35)
3	Should mothers who underwent caesarean section feed formula or cow's milk in addition to breast milk on the first day of life	3 (8.8)	6 (6.1)	5 (20)	1 (3)
4	Breastfeeding should be advised to be continued for 2 years and beyond	18 (52.9)	39 (40.2)	34 (95)	28 (90)
5	In the first 6 months of life of an infant, water per mouth can be given in addition to breastfeeds	5 (14.7)	3 (3)	5 (20)	1 (3)
6	Breastfeeding for a normal newborn should be on demand only and not by clock	23 (67.6)	93 (95.8)	31 (86)	4 (13)

In a study from Iraq (n = 50), it was observed that in primary healthcare physicians, 92% knew that breastfeeding should start in 30 min after birth. 72% of the primary care physicians in their study knew that breastfeeding should be on demand, which in our study 86% Junior resident doctors agrees upon. However, 92% of the respondents in the Iraqi study felt that weaning must start in 4–6 months and only 8% felt that weaning should start after 6 months. In caesarean sections, in the same study, 66% knew breastfeeds should start after 12 h and another 22% knew it should start after 1 day, whereas 92% of the resident doctors and 36% of nurses in our study felt that breastfeeding alone is adequate even in the first day of life[5].

In a questionnaire-based survey from Pakistan, the findings in a study population of 197 doctors and 97 nurses, about 90% believed that breastfeeding must start within half an hour. 9% of doctors and 19% of nurses felt that prelacteal feed should be given, whereas in this study JR1(33%), JR2(8%), JR3(0%) and staff nurses (3%) think that pre-lacteal feeds should be given before the mother's milk comes in. Only 8% of doctors and 68.7% of nurses believed in on-demand breastfeeding in the study from Pakistan as compared to 86% of doctors and 13% of nurses in our study[6]. In the Pakistan based study, almost half of all doctors and nurses were of the opinion of weaning even before 6 months of age, and only 9.6% of doctors and 21.2% of nurses felt that breastfeeding should be continued for 24 months and beyond. Relatively early weaning by 4–6 months of age may be due to the National breastfeeding policy of Pakistan. In another study from Lahore, Pakistan, the respondents were resident doctors and nurses from Obstetric and Paediatric departments, respectively[7].

Conclusion: - The knowledge and practice about breastfeeding were good in Junior Residents. However it was lower in nursing staff. Lacuna in knowledge is important as they are needed for making Breastfeeding practices effective. Hence for strengthening the concepts, training sessions for JR's especially for JR1 will be helpful. While for nurses regular training sessions on timely basis will be helpful.

REFERENCES

1.Baby friendly hospital initiative; ten steps to successful breastfeeding from UNICEF and the World Health Organisation ,https://www.unicef.org/documents/baby-friendly-hospital-initiative.Last accessed on 20/7/2023

2.UNICEF. Infant and young child feeding 2019 Availablefrom: https://data.unicef.org/topic/nutrition/infant-and-young-child-feeding/. Last accessed on 20/7/2023

3.Walsh, A., Pieterse, P., Mishra, N. *et al.* Improving breastfeeding support through the implementation of the Baby-Friendly Hospital and Community Initiatives: a scoping review. *Int Breastfeed J* **18**, 22 (2023). Last accessed on 29/8/2023

https://internationalbreastfeedingjournal.biomedcentral.com/articles/10.1186/s13006-023-00556-2#citeas

4.Shaw SC, Devgan A. Knowledge of breastfeeding practices in doctors and nurses: A questionnaire-based survey. Med J Armed Forces India. 2018 Jul;74(3):217-219. doi: 10.1016/j.mjafi.2016.11.015. Epub 2017 Jan 5. PMID: 30093763; PMCID: PMC6080836.Last accessed on 14/8/2023

https://www.sciencedirect.com/science/article/abs/pii/S0377123716301770?via%3Dihub

5.Zwaini E.J., Al-Haili S.J., Al-Alousi T.M. Knowledge of Iraqi primary health care physicians about breast-feeding. *East Mediterrean Health J.* 2008;14(2):381–387. [PubMed] [Google Scholar]Last accessed on 14/8/2023

6.Hanif R., Khalil E., Sheikh A. Knowledge about breast feeding in accordance with the national policy among doctors, paramedics and mothers in baby-friendly hospitals. *J Pak Med Assoc.* 2008;60:881–886. [PubMed] [Google Scholar] Last accessed on 14/8/2023

7.Hasnain S., Majrooh A. Knowledge and practices of resident doctors and nurses in breast feeding in Obstetric and Pediatrics departments of Jinnah Hospital, Lahore. *Biomedica.* 2012;28:156–162. [Google Scholar] Last accessed on 14/8/2023

Abbreviations:-

BHFI :- Baby friendly hospital initiative

HOI :- Head of institute

HOD :- Head of the department

KIMS:- Krishna Institute of Medical Sciences

GMC:- Government Medical College

P.G :- Post-Graduate

OBG :- Obstetrics and Gynaecology

JR1:- Junior Resident 1

JR2:- Junior Resident 2

JR3:- Junior Resident 3