Knowledge, Attitude and Practical Skills among Staff Nurses Regarding Breastfeeding and COVID-19.

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Abstract

Background: Staff nurses must protect, promotes and support mothers to breastfeed especially during this COVID-19 pandemic. Their knowledge, experience and skills may influence their ability to do this. Moreover, only limited research is available in this context. Objectives of the study: To assess the knowledge, attitude and practical skills on breastfeeding including during COVID-19 pandemic of staff nurses working in Obstetrics and Paediatrics departments of a Tertiary care hospital in Puducherry. Methods: Hospitalbased descriptive cross-sectional study, conducted among 55 staff nurses for period of three months using a pre-designed structured questionnaire. Practical skills were observed using Integrated Management of Neonatal and Childhood Illness strategy and UNICEF guidelines. Collected data were analysed using Epi_Info (version_7) software. **Results:** About72.7% of them had good knowledge about EBF and 67.3% had on early initiation of breastfeeding. More than half of Staff nurses has knowledge on importance of breastfeeding of COVID-19 mothers and positive attitudes in supporting breastfeeding even during COVID-19.Out of 55 staff nurses, 74% were able to demonstrate and explain correct feeding position, 49.1% illustrated hygienic practices to be followed by covid-19 positive mother while breastfeeding and only 7.3% were able to demonstrate hand expressing techniques and illustrated management of sore nipple. Only 5.5% showed different holds in breast. Conclusion: Though majority of staff nurses had desirable knowledge in major domains of breastfeeding but still lack knowledge and practical skills in some domains like breastfeeding of COVID-19 mothers, EIBF and management of sore nipples. This emphasizes the need for conducting comprehensive and regular training for staff nurses on breastfeeding especially during COVID-19 pandemic.

Keywords: Staff nurses, Breastfeeding, COVID-19, Knowledge, Practices, BFHI.

Introduction:

Breastfeeding is the first step in life which ensures that infants and young children get a healthy and nutritious start in life.^{1,2} The naturally available breast milk from mother has abundant long-term benefits for mother as well as for the new-born²⁻⁶ such as increasing the immunity of the new-born, preventing child from common childhood illness such as diarrhoea and pneumonia, increases IQ, improves mother-infant bonding and Secretory immunoglobulin A which produce immune response against COVID 19 virus is also found in breast milk.³⁻⁵ On long term basis there is decreased incidence of non communicable diseases like diabetes and hypertension among adults who were breastfed.⁶⁻⁹ For mothers breastfeeding acts as natural contraception and also helps in preventing breast cancer, uterine cancer and overweight.⁶⁻⁹

Baby Friendly Hospital Initiative (BFHI) an initiative of UNICEF and WHO encourages all hospitals with maternity services to include the ten steps to successful Breastfeeding in their basic maternity and new-born infant care policies and procedures. One of the key components highlighted in BFHI initiative is to ensure that staffs should have sufficient Knowledge, competence and skills to support breast feeding. ¹⁰⁻¹³It has proven that early initiation of correct breastfeeding practices has a major impact on the post neonatal and child mortality and morbidity and the knowledge and skills of the staffs plays a prime role in it. ^{9,10}

The current COVID-19 pandemic has touched every area of life including infants of COVID-19 affected mothers. Breastfeeding protects mother and child, which should be cared by the staff nurses and skin-to-skin contact should be ensured throughout COVID-19 pandemic.³⁻⁵ WHO recommends that mothers with confirmed COVID-19 should be encouraged to initiate or continue to breastfeed. Secretory immunoglobulin A (IgA) found in the breastmilk protect infant against the COVID-19 virus, hence these benefits outweigh possible risk during the COVID-19 pandemic.³⁻⁵ Mothers should be counselled by staff nurses about the benefits of breastfeeding substantially outweigh the potential risks for transmission.⁴ COVID-19 virus is not transmitted through breast milk and all mothers are advised to continue breastfeeding , while practicing 3W (UNICEF): Wear mask during breastfeeding, Wash hand with soap and water before touching the baby, Wipe and disinfect surfaces regularly. Since our facility is planning to implement BFHI, assessing the knowledge and skills of the staffs who plays a major role in helping the mothers to initiate and sustain breastfeeding is absolutely essential. During this current pandemic period staff knowledge on promoting covid-19 affected postnatal mother to breastfeed with necessary precaution is mandatory. This study has also tried to capture staff knowledge on covid-19 and breastfeeding, moreover only limited research is available on this context, which emphasis the need of this study, hence with this background the present study was planned with the following objective: To assess the knowledge, attitude and practical skills on breastfeeding especially during COVID-19 pandemic among staff nurses, working in Obstetrics and Paediatrics departments of a Tertiary care Maternity hospital in Puducherry.

Material and Methods Study setting:

The present study was conducted in the wards of Pediatrics and Obstetrics and Gynecology departments of a tertiary care teaching hospital by the Department of Community Medicine. This tertiary care institute situated in the border of Puducherry and Villupuram district of Tamilnadu, renders comprehensive maternal and new-born health service to the people residing around the borders of Puducherry and Tamil Nadu (Villupuram district).

Study design: It was a hospital based descriptive cross-sectional study

Study Duration: The study was conducted for a period of Three months for data collection and analysis.

Study participants: All the staff nurses working in Paediatrics and Obstetrics and Gynecology department of a tertiary care institute in Puducherry.

Sample size and sampling: All the staff nurses (N=55) working in Paediatrics (N=21) and Obstetrics department (N=34) who were directly involved in supporting mothers to aid breast feed new born infants and provide care right from birth were enrolled in the study.

Operational definition:

Exclusive breastfeeding (EBF): It is the practice of feeding the infant breastmilk only for the first 6 months of life without any other type of food or drink, not even water.^{3-5,11}

Early initiation of Breast Feeding: Provision of mother's breast milk to infants within one hour of birth is referred to as "early initiation of breastfeeding" and ensure that infants receive the colostrum, or "first milk", which is rich in protective factors. (WHO)^{6,15}

Complementary feeding: It is defined as the process starting when breast milk alone is no longer sufficient to meet the nutritional requirement of infants, and therefore other foods and liquids are needed, along with breastmilk. The transition from exclusive breastfeeding to family foods-referred to as complementary feeding – typically covers the period from 6-24 months of age. (WHO)^{6,9,16}

Data collection and Analysis:

After obtaining informed consent, a pre-designed structured questionnaire was used to assess the participant's knowledge and attitude regarding breast feeding. The questionnaire was prepared based on Integrated Management of Neonatal and Childhood Illness (IMNCI), BFHI guidelines and UNICEF guidelines was modified to the context.^{7,10} A trained female postgraduate in Community Medicine conducted face-to face interviews among staffs during their free time in the wards, which helped the interviewer to clarify the questions throughout the interview. Their knowledge on EBF, demand feeding, complementary feeding, hunger cues, benefits of breastfeeding, breastfeeding during covid-19, problems in breast feeding, its management and their attitude towards breastfeeding were assessed using the questionnaire.

Apart from this the basic socio-demographic details like age, religion, marital status and work experience of the staffs were also collected.

Apart from interview, the respondents were also asked to demonstrate four steps in correct positioning and attachment of the baby (refer Table 2) during breastfeeding, different types of breast hold (C hold, U hold and Scissor hold) as per IMNCI guidelines. The staffs were asked to simultaneously demonstrate and explain different hand expression techniques used in breastfeeding, hygienic practices to be followed by covid-19 positive mother while breastfeeding **3W** (UNICEF): **Wear** mask during breastfeeding, **W**ash hand with soap and water before touching the baby, **W**ipe and disinfect surfaces regularly.⁵ All the demonstrations were carried out using dummy baby doll and breast, which prevented unnecessary disturbance to the mother and new-born. The data was entered and analysed using Epi Info (version 7.0) software package. The results were presented as frequencies and percentages.

Ethical consideration: The study protocol was approved by the Institutional Ethics Committee (No.EC/04/2019). Voluntariness, privacy and confidentiality was maintained throughout the study

Results: Socio-demographic background: Out of 55 staffs included in the study,21(38.2%) belonged to Paediatrics department and 34 (61.8%) belonged to Obstetrics department with a response rate of 100 percentage. The mean age of the respondents was 29.4 ± 5.6 years. More than half of the respondents 33(60%) were married and majority 49(89%) of them followed Hindu religion. Among the respondents 40(72.7%) were from urban background and 15 (27.3%) were from rural background. Out of 55 staffs, 12(21.9%) has received training on breast feeding in the last one year. Of the total respondents, 34(69.1%) had work experience of ≥ 5 years.

Knowledge on breast feeding: Table 1 shows knowledge on breastfeeding among the participants. It was found that staff nurses had good knowledge on complementary feeding 47 (85.5%), hunger cues 47(85.5%), on EBF 40(72.8%), 32(59.3%) were aware that COVID-19 is not transmitted through breastmilk, hence breastfeeding is not contraindication for COVID-19 affected mothers. About 29(49.1%) were aware that infected mother could transmit COVID-19 infection to infants through aerosol. Where as they had poor knowledge on reason for delayed lactogenesis 6(11.4%) and reasons for sore nipple 4(7.3 percentage).

Attitude towards breast feeding: The majority of the staff nurses had positive attitude towards BF. All the respondents 55(100%) agreed to the fact that it is not difficult for breast feeding mothers to take care of the family and breastfeeding will not affect maternal relationship. According to table 1, the majority of the staff nurses, 46(95.9%) and 42(76.4%) had positive attitude towards the fact that breastfeeding is better than formula feeding and helps in reducing family expenses respectively. Among the staff nurses, 3(56.4%) believed that separation of Covid 19 positive mother from the baby is not recommended and 30(50.4%) believed that the baby should be breastfed irrespective of the mode of delivery.

Unfortunately, a few staffs 8(14.6%) also believed that the mothers education act as a barrier for breastfeeding.

Practical skills towards breast feeding: Among the 55 staff nurses, 41(74.6%) were able to demonstrate and explain correct positioning of infant during breastfeeding, similarly they illustrated correctly that COVID-19 infected mothers should wear mask while breastfeeding, nearly 27(49.1%) correctly illustrated all the Precaution to be followed by COVID-19 mother in handing new-born (3W). More than half of the respondents 31(56.4%) illustrated correctly all four steps in correct attachment to breast. Whereas only 4(7.3%) of staff could correctly demonstrate the hand expressing techniques and only 3(5.5%) participants were able to demonstrate all the three types of breast holds. (**Table 2**)

Discussion: This study found majority of staff nurses had good knowledge concerning various domains of breastfeeding such as EBF, complementary feeding and hunger cues. Whereas their knowledge is lacking in breastfeeding of COVID-19 mothers, as most of them are still doubtful about COVID-19 virus, its mode of transmission apart from aerosol and due to the fact of social distancing which creates confusion whether breastfeeding could be promoted. Staff nurses were also lacking in other domains like EIBF, reason for delayed lactogenesis and causes for sore nipple. Majority of staff nurses had positive attitude towards breastfeeding. In case of practical skills more than half of the respondents were able to demonstrate and explain correct positioning and attachment (all 4 steps) in breastfeeding. Less than half of staff were able to illustrate Hygienic Precautions to be followed while breastfeeding by COVID-19 mother (3W) But only very few staff nurses were able to demonstrate hand expressing technique, illustrate management of sore nipple and demonstrate three types of breast holds.

In the present study, 72.7% staff nurses had good knowledge on EBF, which is almost similar to studies conducted in other studies which lies between 65 - 85 percentage. $^{14-20}$ More than half of Staff nurses has knowledge on importance of breastfeeding of covid-19 mothers, which might have impact on initiation of breast feeding of COVID-19 mothers and counselling on the benefits for same. But still few knowledge gaps exist in some domains of breastfeeding such as Early initiation of breastfeeding (EIBF). In our study 32.3% of the respondent's didn't know BF should be started within 30 min followed by vaginal delivery, which is less when compared to study conducted by Okolo et al¹(20.8%). Despite the numerous advantages of breastfeeding only 25.5% of respondents were able tolist at least three benefits of breastfeeding. This finding is in contrast with study conducted by Utoo B.T et al²¹ where 75% respondents illustrated any 3 benefits. The first opportunity for initiating breastfeeding occurs in the health care facilities, especially in the delivery room just after birth which is taken care by staff nurses. Hence in order to improve the breastfeeding practices in the facility, the identified knowledge gaps among staff nurses needs to be addressed by providing frequent training programme to update their knowledge on breastfeeding.

In our study 95.9% staffs believes breast feeding is good and easier than formula feeding and 59.3% believed BF act as natural contraception which is almost similar to study conducted

Utoo et al²². The present study showed that 49.1% of the staffs believed working mothers can exclusively BF which is less when compared to study conducted by Okolo et al¹

As per WHO, Adherence to infection prevention and control measures is essential to prevent contact transmission between COVID-19 confirmed mothers and their new-borns and young infants.³⁻⁵But in our study only 49.1% of the staff were able to illustrate Hygienic Precautions to be followed while breastfeeding by COVID-19 mother as per UNICEF guidelines (3W)⁵. This emphasizes the need for training the staffs about how to prevent transmission from covid affected mothers to newborns during breastfeeding. The correct positioning and attachment of the baby to the breast is essential for the efficient transfer of milk and may be the single most important measure to prevent and treat lactation problems.²²In our study, 74.6% were able to demonstrate correct positioning of the baby using mannequin (all four steps) which is more, when compared to study conducted by Okolo et al¹(5.2 %), whereas it was less than the study conducted by Daniel et al (100 percentage). In our study 56.4% stated correct attachment to breast (all 4 signs), which was less when compared to study conducted by Daniel et al(91.9 percentage).² It was found only 7.3% where able to explain hand expressing technique in our study which was almost similar 8.6% in study conducted by Daniel et al.² In our study 7.3% staff could adequately manage sore nipple, whereas in other study conducted by Daniel at al ² it was found to be more 35 percentage. These findings emphasis the need for conducting comprehensive and regular hands-on training program for the staffs to enhance their practical skills on breastfeeding.

The major strength of the study is use of standard guidelines (IMNCI, BFHI, UNICEF) for preparation of questionnaire. We have tried to capture staff nurse's knowledge and practical skills related to breastfeeding during the current pandemicwhere only limited literatures are available and use of mannequins (dummy baby and doll) to assess the practical skills, which prevented unnecessary disturbance to mother and new-born. However, being a hospital based cross-sectional study, done in a single health care facility the results cannot be generalized.

Conclusion and Recommendations: Majority of the staff nurses had desirable knowledge in major domains like EBF and complementary feeding and have positive attitude towards breastfeeding, they still lack knowledge and practical skills in some domains like breastfeeding of covid-19 mothers and precautions to be followed, EIBF and management of sore nipples. This emphasizes the need for comprehensive training of staff nurses on breastfeeding skills to improve their competency to aid mothers in breastfeeding especially during the current pandemic, COVID-19. Periodic training for every six months for the staffs using flipbooks, videos, demonstrations and photographs should be made mandatory on practical skills and management of breast-feeding problems.

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Table 1: Assessment of knowledge and Attitude on breastfeeding among staff nurses (N=55)

knowledge on breastfeeding	n (%)	
Complementary feeding	47 (85.5)	
Hunger cues	47 (85.5)	
Exclusive breast feeding	40 (72.7)	
Early initiation of breast feeding	37 (67.3)	
Breast feeding benefits (any 3)	14 (25.5)	
Frequency of breast feeding in 24 hours	10 (18.2)	
Reason for delayed lactogenesis (any 3)	6 (11.4)	
Able to give reason for sore nipple	4 (7.3)	
Knowledge on breastfeeding and COVID-19		
Infants of covid-19 positive mothers should breastfeed	32 (59.3)	
Covid-19 virus is not transmitted by breastmilk	32 (59.3)	

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sick covid-19mother can express breastmilk and feed infant with cup and	31 (56.4)
spoon	
Droplet/Aerosol of covid-19 mother can transmit infection to infant	27 (49.1)
Skin to skin contact can be ensured	14 (25.5)
Attitude towards Breast feeding	n (%)
Believes breast feeding is good and easier than formula feeding	46 (95.9)
Believes breast feeding helps to reduce family expanses	42 (76.4)
Believes breast feeding act as natural contraception	32 (59.3)
Believes Separation of a covid-19 positive mother and infant may have	31 (56.4)
potential detrimental effects on feeding and bonding	
Believes initiation of breastfeeding of covid-19 mother irrespective of	30 (54.5)
normal delivery or c-section delivery	
Believes it is difficult for working mother to exclusive breast feed	27 (49.1)
Believes feeding infants with formula feeds prevents mother to gain weight	14 (25.5)
Believes mothers education act as main barrier for breast feeding	8 (14.6)

Table 2 – Assessment of practical skills of nursing staffs on breastfeeding (N=55)

Practical skills	Yes n(%)	
Positioning		
Able to demonstrate correct positioning of baby (all 4 steps) #	41 (74.6)	
Infant neck is straight or bent slightly back	41 (74.6)	
Infant body is turned towards mother	50 (90.9)	
Infant body is close to mother	52 (94.6)	
Infant whole body is supported	51 (92.7)	
Attachment		
Able to state Correct attachment to breast (all 4 signs)	46 (83.6)	
Chin touching breast	37 (67.3)	
Mouth wide open	46 (83.6)	
Lower lip turned outward	31 (56.4)	
More areola above than below the mouth	51 (92.7)	
Precaution to be followed by COVID-19 mother in handing new-born		
Should wear mask while feeding the baby	41 (74.6)	
new-born should be kept more than 6 feet away from mother as much as possible.	37 (67.3)	
Must Wash hands with soap and water for at least 20 sec before holding new-born	31 (56.4)	
If soap and water are not available, hand sanitizer with at least 60% alcohol must be used	31 (56.4)	
Must Wash hands with soap and water for at least 20 sec before holding	31(56.4)	

new-born	
Wipe and disinfect surfaces regularly	27 (49.1)
Other practical skills	
Able to explain management of inverted nipple using syringe method	5 (9.1)
Able to illustrate management of sore nipple	4 (7.3)
Able to explain hand expressing technique	4 (7.3)
Able to demonstrate different types of breast hold (all 3 types of hold) [#]	3 (5.5)

[#] Demonstrated using mannequin (dummy baby doll and dummy breast)