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Breastfeeding Practices During COVID 19 Pandemic in Field Practice Areas of a Medical College in Bangalore- A Mixed Method Approach

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ABSTRACT

Background: The COVID-19 pandemic and lockdown has restricted the pregnant or lactating mothers to seek regular health care services due to which, there were lack of knowledge and family support, fear of transmission of infection to babies. **Aims & Objectives:** The objective is to deduce the practices, barriers and promoters for breastfeeding during the pandemic by mothers with children within 2 years **Methodology:** A cross-sectional study among 100 breastfeeding mothers (50 each in urban and rural) with children ≤ 2 years, enrolled in randomly selected Anganwadi centres in Bangalore were conducted, using a pre-tested semi-structured questionnaire. Focussed group discussions were conducted among participants to obtain data on barriers and promoters. **Results:** Among 100 participants, only 72% practiced exclusive breastfeeding, 70% initiated breastfeeding within 4 hours, 5% didn't feed colostrum, 37% fed pre-lacteal feeds, 42%practised handwashing before lactating. Out of 15 COVID-19-positive mothers, 53.3% continued breastfeeding, 60% were separated from their babies. Lack of family support, healthcare inaccessibility, and lack of awareness on breastfeeding during pandemic were identified as the barriers, while good health-seeking behaviour and COVID-appropriate behaviour were the promoters. **Conclusions:** Though the proportion practicing EBF during pandemic peaked compared to NFHS-5 except in rural, there is an urgent need to bridge the "practice gap" of mothers from rural and lower socio-economic strata of the community.

INTRODUCTION

In a developing country like India, undernutrition is the primary factor for high incidence of infant mortality rate (IMR) and under 5 death rates. National Family Health Survey (NFHS-5) mentioned that neonatal mortality rate was 25 deaths per 1000 live births, IMR was 42 deaths per 1000 live births, stunting was 36%[1]. Rural areas have a higher under-5 mortality rate than urban areas (46 deaths per 1000 live births versus 32 deaths per 1000 live births[2].

The practice of exclusive breastfeeding is one of the measures taken for the reduction of infant mortality and also improves the growth and development of the child. The World Health Organization (WHO) and the Government of India (GOI) guidelines recommends exclusive breastfeeding(EBF) for first 6 months of life. As per the reports of NFHS-5 in the state of Karnataka, 94,6% of children were breastfed, 48.5%were breastfed within one hour of birth, 88.8% breastfed within a day, 135 received pre-lacteal feeds. A woman needs emotional and physical support from family mem-bers, health care providers and the community to practice exclusive breastfeeding. However, the SARS COVID-19 pandemic impacted all aspects of life in the form of lockdown, which lead to decreased accessibility to health care services.

During the initial periods of pandemic, there was no information regarding precautions to be taken by the new mothers to avoid vertical transmission[3].

The WHO revised its interim recommendations for the clinical management of COVID-19 on May 27, 2020, taking into consideration the maternal benefits of breastfeeding and the mild range of symptoms observed in infants[4]. that COVID-19 positive mothers should practice exclusive breastfeeding, then alternate breastfeeding with the administration of complementary feeds while taking the necessary precautions to prevent infection.

Despite this, many were apprehensive about disease transmission through breastmilk. Pregnancy by itself is a stressful state to which

added the dilemma of disease transmission which fuelled the need for study on the breastfeeding practices adopted during the pandemic.

OBJECTIVES

To study the breastfeeding practices during COVID 19 pandemic by mothers with children in age group of 0-2years

To Determine the barriers and promoters for breastfeeding during COVID 19 pandemic by breastfeeding mothers

MATERIALS AND METHODS

Ethical clearance was obtained from the institutional review board, and a cross-sectional study was conducted among the lactating mothers with children up to 2 years, residing in urban and rural field practice area of M S Ramaiah medical college, Bangalore. A sequential explanatory type of mixed method approach was used. The study was conducted for a period of one-year duration (December 2021- May 2022) in the Urban field practice area - of Mathikere (under Mathikere UPHC) and the rural field practice area - of Avathi (under Avathi PHC). 4 Anganwadi centres in rural and 3 in urban were randomly selected (among 20 Anganwadi centres in rural areas and 7 in urban respectively).

An informed consent was obtained from the participants in the line list available at Anganwadi, following which a house-to-house survey was conducted. A pre-tested questionnaire was administered to collect data with regard to socio-demographic profile of study participants, breastfeeding practices of study participants as well as among COVID-19-positive mothers.

Attempts were made to contact all the mothers who were enrolled under these Anganwadi centres till the sample size was met (50 each in urban and rural). Convenient sampling of houses where mothers of babies up to 2 years, who were available at the time of visit were surveyed.

Inclusion Criteria: All mothers with children up to 2 years, from the Anganwadi line-list

Exclusion Criteria: Those mothers who were not available for more than 3 times during the time of visit

*AWC: Anganwadi centre

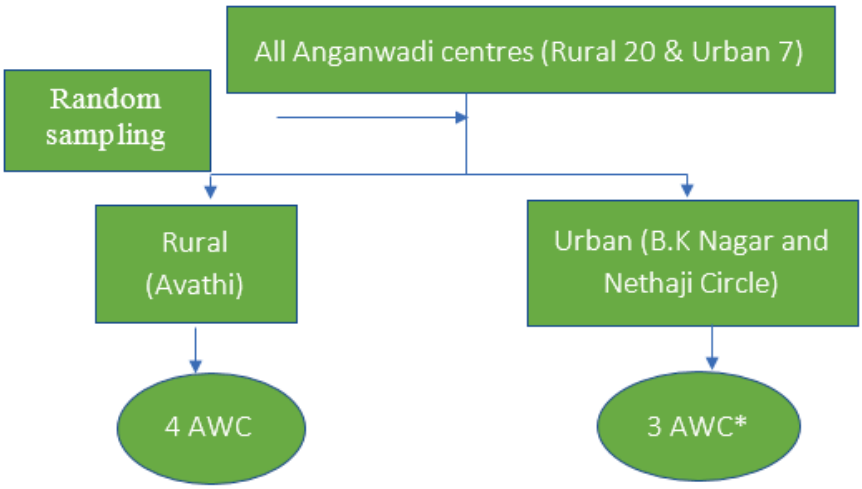

Figure 1: Flowchart Showing Sampling Method Adopted

In order to determine the barriers and promoters for breastfeeding during COVID-19 pandemic, a qualitative-sequential exploratory study using focus groups with breastfeeding mothers was conducted, in urban and rural field practice each.

The questions in the Focussed group discussion (FGD) guide, derived from the aims of the study and relevant literature, were used to facilitate each group. To probe into specific issues and sustain the discussion, an open-ended questionnaire was developed. Using the FGD guide, two FGDs were conducted at the Anganwadi centres and confidentiality was maintained. For conducting each FGD, 6 mothers with children up to 2 years were selected from the Anganwadi line-list. The notes transcribed from the local language to English. Each group was audio-taped and moderated by the same two researchers, one to facilitate the discussion and the other to make field notes.

Before the initiation of FGD, consent forms and information sheets were distributed to the participants. The participants were allowed to ask questions regarding the study. The recordings of the discussions were listened by both researchers, transcribed with noting the frequency and content and analysed for common themes and issues. In this way, themes and sub themes regarding barriers and promoters with respect to breastfeeding were highlighted.

Confidentiality was maintained during the focus group discussion. The names of the study participants were not attached to the transcripts or any reports or publications.

Sample Size Calculation:

As per National Family Health Survey 5(2019-2020)[1], 63.7% practised exclusive breastfeeding in Karnataka. In the present study, expecting similar results during COVID 19 Pandemic with 95% confidence limits and 15% relative precision, study required a minimum of 97 subjects (50 each in rural and urban)

Statistical Analysis:

Statistical analysis was done using SPSS version 25

Descriptive statistics of breastfeeding practices were analys-

-ed, and summarized in proportions. Chi square test was used to find the association between exclusive breastfeeding practices and sociodemographic factors.

RESULTS

Mean age of the mother: 24.5 Years

Mean age of child :9.9 months

Table 1: Socio-Demographic Profile of Study Participants (N=100)

Variables	Groups	Urban n(%)	Rural n(%)	Total (%)
Age of mothers	19-23 24-28 29-33	21(45.7) 22(56.4) 07(46.7)	25(54.3) 17(43.6) 08(53.3)	46 39 15
Age of children	0-6 months 6m-12m* 12m-24m	24(64.9) 20(47.7) 06(28.6)	13(35.1) 22(52.3) 15(71.4)	37 42 21
Educational status of mothers	Literate	50(51)	48(49)	98
Type of family	Nuclear Non-Nuclear	23(62.1) 27(42.9)	14(37.9) 36(57.1)	37 63
Socio-economic status (Modified BG Prasad's)	Class I Class II Class III	32(84.2) 14(37.8) 04(16)	06(15.8) 23(62.2) 21(84)	38 37 25
Birth order	1st 2nd 3rd	33(57.9) 16(41) 01(25)	24(42.1) 23(59) 03(75)	57 39 04
COVID-19 +ve (RT-PCR/RAT positive)	Yes No	8(53.3) 42(49.4)	7(46.7) 43(50.6)	15 85

***M-Months**

According to socio-demographic profile of the study participants, 46% of mothers belonged to 19-23 years and 42% of the children belonged to the age group of 6-12months. Among the study participants, 98% were literate, belonged to non-nuclear families. Among 100 study participants, 15% of the mothers were COVID-19 positive 53.3% in urban and 46.7% in rural (Table 1)

Table 2: Breastfeeding Practices of Study Participants(N=100)

Variables	Groups	Urban n(%)	Rural n(%)	Total n(%)
Breastfeeding initiated	≤4hrs >4hrs	38(54.2) 12(40)	32(45.8) 18(60)	70 30
Baby fed colostrum	Yes No	50(52.7) 00	45(47.3) 5(100)	95 5
Pre-lacteal feeds	Yes No	17(46) 33(52.4)	20(54) 30(47.6)	37 63
Pre-lacteal feeds given	Honey Ghee & Honey Plain water	11(64.7) 04(23.5) 02(11.7)	13(65) 05(25) 02(10)	24(64.8) 9(24.3) 4(10.8)
Demand feeding	Yes No	50(50) 00	50(50) 00	100 00
Exclusive breastfeeding (EBF)	Yes No	42(58.3) 08 (28.6)	30(41.7) 20(71.4)	72 28
Complimentary feeding started	Within 6 months After 6 months	07(17) 43(72.9)	34(83) 16(27.1)	41 59
Handwashing practised before breastfeeding	Never Sometimes (at least before 2 or 3 feeds/day) Always	03(75) 31(57.4) 16(38)	01(25) 23(42.6) 26(62)	4 54 42

Regarding breastfeeding practices, it was found that 70% of mothers-initiated breastfeeding within the first 4 hours of birth (urban -54.2%, rural -45.8%). The delay in initiation of breastfeeding was due to delayed reporting of COVID RT-PCR test status of the mothers thereby delaying rooming in and subsequently initiating breastfeeding.

Colostrum was fed by 95% of the mothers while 5% who did not were from rural areas. Pre-lacteal feeds were given for 37% of babies (17(46%) in urban, 20(54%) in rural). The commonest pre-lacteal feed given were honey both in urban and rural (64.7% and 65% respectively), followed by ghee and honey (23.5% in urban and 25% in rural), and plain water (11.7% in urban and 10% in rural).

Exclusive breastfeeding was practiced by 72% (58.3% in urban and 41.7% in rural) of the study participants. Complementary feeding was initiated within 6 months among 41% (17% in urban and 83% in rural) of breastfeeding mothers.

Hygienic practice of handwashing before breastfeeding was practised always by 42%, sometimes by 54%. (Table 2)

Table 3: Breastfeeding Among COVID -19 Positive Mothers(N=15)

Variables	Groups	Urban n(%)	Rural n(%)	Total n(%)
Age of children	6 months >6m-12m >12m-23m	04(80) 02(33.3) 02(50)	01(20) 04(66.7) 02(50)	05(33.3) 06(40) 04(26.7)
Breastfeeding continued	Yes No	04(50) 03(42.9)	04(50) 04(57.1)	08(53.3) 07(46.7)
Type of isolation	Home Hospital	07(87.5) 01(12.5)	05(71.4) 02(28.5)	12(80) 3(20)
Separated from baby	Yes No	06(66.7) 02(33.3)	03(33.3) 04(66.7)	09(60) 06(40)
Feed given for separated babies: expressed breastmilk	Yes No	06(75) 00	02(25) 01(100)	8(88.8) 1(11.1)
Additional protective measure adopted while feeding	HW#+Mask Mask + Gloves No measures adopted	02(50) 02(100) 00	02(50) 00 02(100)	04(50) 02(25) 02(25)

Among the 15 mothers who were found to be COVID -19 positive 12(80%) were home-isolated and 3 (20%) were hospitalized, 8 (53.3%) of the mothers continued to breastfeed (50% each in urban and rural).

Among the 9(60%) babies separated from mothers, breast milk was fed to 8(88.8%) and 1(11.1%) was started on formula feeds. Additional protective measures adopted while feeding, 4(50%) of the mothers responded that they practiced handwashing and used masks while feeding. (Table3)

Table 4: Association Between Socio-Demographic Factors and Exclusive Breastfeeding Practices

Socio-demographic factors	Groups	Exclusively breastfed		P value
		Yes (n%)	No (n%)	
Socio-economic status	I II III	32(84.2) 26(70.2) 14(56)	6(15.8) 11(29.8) 11(44)	0.049
Place of residence	Urban Rural	42(84) 30(60)	8(16) 20(40)	0.008
Educational status of mother	Not literate Literate	0(0) 72(73.5%)	2(100) 26(26.5%)	0.076*
Covid 19 positive mothers	Yes No	10(66.6%) 62(72.9%)	5(33.3%) 23(27.0%)	0.618

***Fischer's Exact P Value**

Socio-economic status (P value -0.049) and place of residence (P value-0.008) have a significant association with exclusive breastfeeding practices. Association between Birth order, type of family, and religion were found to be statistically non-significant. It was found that COVID-19 did not have a significant association with the practice of exclusive breastfeeding. (Table 4)

Qualitative

Focus group discussions were carried out to deduce the promoters and barriers for breast feeding during the pandemic. In general, it was found that lack of awareness regarding COVID -19 transmission and breastfeeding, lack

of family support, accessibility to health care were barriers and good family support, and health seeking behaviour were found to be promoters of breastfeeding.

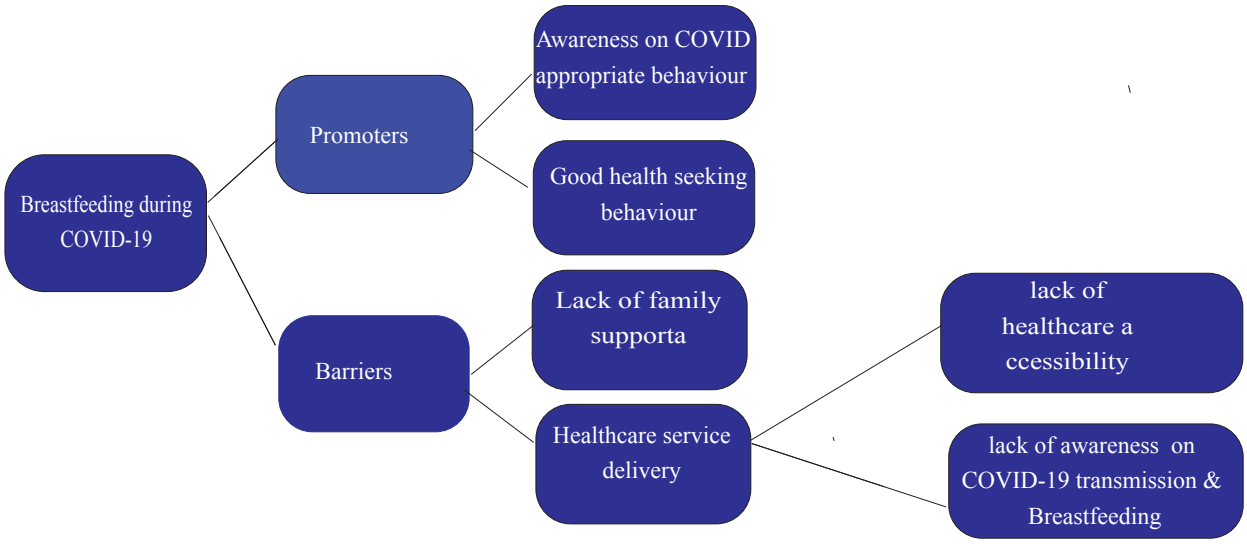

Figure 2: Flowchart Depicting Promoters and Barriers in Breastfeeding Following a FGD

BreastfeedingWhile COVID-19 Positive:

During the initial part of the pandemic no guidelines for lactating mothers were issued. There was a general fear of transmission of the disease to others including newborns. However, in the focus group discussion we found that women continued to breastfeed their children despite the fear and confusion that existed regarding the disease. Mothers who turned COVID -19 positive also continued breastfeeding but 1 mother was positive in rural FGD. The participant 2 in rural FGD who was COVID-19 positive mentioned that

"Yes, I was tested positive. As there was nobody else other than my husband and baby at my house, I isolated in a room but I was breastfeeding as my baby was just 2.5 months. Later ASHA worker informed through phone that I can continue breastfeeding my child wearing a mask"

One of the participants 1 in rural FGD, said that she was positive before delivery, hence she took all precautions while feeding baby so that she can prevent getting the infection again.

The logistic issue to continue breastfeeding was the separation of the child from the mother if the mother turned COVID 19 positive during the first wave. Some mothers continued to feed expressed breast milk and some switched to formula feeds. However, in the second and the third wave of the pandemic in India home isolation was encouraged and hence the mothers could continue to breast feed their children by taking adequate precautions to prevent the infection spreading to the child.

Accessibility of Health Care Services:

From the FGD, it was understood that accessibility to health care was a difficulty during the pandemic both in urban and rural, in the initial part of the pandemic due to lockdown. During the initial part of the pandemic even the medical stores were also closed down and had to depend on government hospitals for accessing health care, however, the GH were treating centres for COVID patients, the fear of contractinginfection restricted the access to health care even in the GH. In rural area lack of transportation facilities added to the already compromised access to health care.

Factors That Stirred Fear in View of COVID 19 Pandemic:

The most common factors that stirred fear among the participants in view of COVID-19 Pandemic were the fear of transmitting the disease to baby and other family members if it's a joint family, lack of awareness on breastfeeding the baby if they turn positive, which all are indicative of lack of awareness on COVID-19 transmission. But participant 1 in rural FDG mentioned

"I was worried about what my in-laws would say when I turn positive, and will they take care of my baby. Also I was not aware initially that should I continue breastfeeding if I turn positive but few months later, in radio I heard that mothers should continue breastfeeding their child so that doubt was clarified"

The next common factor was lack of family support for catering to baby or child needs (like feeding of the baby or child) especially in nuclear families. Though there was lack of family support in joint family, participant 5 in rural FGD was not worried about feeding the child.

"Mine is a joint family, if I turn positive, all others will be also infected. I was not worried about breastfeeding as I started my baby with formula feeds which can be even given by other family members"

Another participant in rural area was worried about losing of wages which was their only source of income, if her husband gets affected from her.

Promoters

COVID Appropriate Behaviour

Both rural and urban focus group discussion revealed that most participants followed COVID appropriate behaviour in terms of using masks and avoiding crowded areas. Extra precautions were taken while breastfeeding the child. Masks

all of them practices hand washing always.

What Would have been Done if COVID-19 Positive After Delivery:

Almost all the participants said that they will follow COVID appropriate behaviour as mandated by the state rules.

Participant 6 in urban FGD replied that "I will inform ASHA and isolate myself". Others mentioned of isolating themselves to a particular room, house, shifting husband to his home, etc.

Participant 2 in rural FGD mentioned **"**Isolate myself but without separating the baby". Others mentioned that they will isolate themselves in a room, house, ask the other household members to shift out.

Your Practice of Breastfeeding if You would have Turned COVID-19 Positive:

Almost same points were evolved from both urban and rural FGD's. three participants each in urban and rural replied that they would continue breastfeeding but few answered they are still unaware and would clarify with a HCW as they are scared of transmitting the infection to their babies.

Family Support

Thought on Family and Community Support Necessary for a Mother to breastfeed her Child:

Both the FGD's revealed that family support is inevitable factor supporting breastfeeding. But simultaneously they added that family seems to be busy to provide support.

Participant 2 in rural FGD: "Yes of course. Whenever the baby cries, even when I'm working, she let me go feed"

Participant 1 in rural FGD mentioned: "Yes. At Night when I'm tired and I doze off, my husband wakes me up and reminds me to feed the baby"

Method of Family Dupport in Breast Feeding:

In the urban FGD

Participant 6: "Nothing like that. They take care of the baby when I go for a bath"

Participant 2: "They don't do anything to support breastfeeding, but my husband plays with the babies"

The rural FGD revealed that they receive some form of family support which ease them to breastfeed their babies.

Participant 2: "As I have mentioned, whenever I want to breastfeed, mother-in-law will look after the household chores."

Participant 1: "As I had less milk production, my father-in-law brings home the galactagogues like drumstick leaves, etc"

OTHERS

The focus group discussions revealed that most of the participants-initiated breastfeeding within 2hours of delivery, though some of the mothers in rural area had fed the new born with pre-lacteal feeds, colostrum was also given to the children. Some mothers abstained from feeding colostrum as their family members insisted that colostrum would not be digested by the child. Most participants were encouraged by the health workers to feed colostrum. Many mothers were counselled by the health workers regarding exclusive breastfeeding.

One participant initiated complimentary feed before 6 months of age claiming less production of milk.

COVID-19 Vaccination Status:

It was found that in Urban, 3 of the participants were fully vaccinated, 2 were partially and 1 did not. While in rural, 2 were fully vaccinated, 3 partially vaccinated and 1 didn't. the reason mentioned was

"Not vaccinated as Government rules advised not to get vaccinated till 1st year of baby. Now I'm planning to get vaccinated"

Continued Breastfeeding After Vaccination:

It was found from the urban FGD that all participants continued to breastfeed their child even after vaccination, after seeking advice from health care worker, indicative of good health seeking behaviour.

The participants in rural also breastfed their babies after seeking advice but 1 participant added that her neighbour advised not to breastfeed for the initial 1 or 2 days and she fed the baby with formula feeds.

DISCUSSION

The study was carried out to assess the promoters and barriers for breastfeeding during pandemic. The authors wanted to study if the pandemic, lockdown, fear of infection, would affect the breastfeeding practices among mothers residing in the rural and urban field practices area of a Medical College. The mean age of the mothers was 24.4 years and children were 9.9 months the demographic profile of the mothers and children were similar in the study by Sarkar et al, on 55 children in an urban slum, it was 3.9 months. In the same study, its observed that among the study participants, 50.9% belong to the age group 18 to 24 years, 38.2% belonged to 25 to 30 years, and 5.45% each in the age groups 31 to 35 years and more than 35 years which was similar to the current study where 46% belonged to 19 to 23 years,39% 24 to 28 years, 15%29 to 33 years[5].

In the current study, 72% of the mothers practised exclusive breastfeeding and initiated breastfeeding on time (70%) which are more than the NFHS-5 values of 63.7% and 49.1% respectively. However, some studies have stated that there has been a delay in initiation of breastfeeding among positive mothers, in the current study it was noted that a delay in reporting of the RTPCR caused a delay in rooming in eventually initiation of breast feeding[6,7].

Redirection of the health workforce for the activities to prevention and control of the pandemic and social distancing, use of protective equipment robbed the newly delivered mothers from the counselling, social and emotional support for breastfeeding[8].

In a study by Aneja B, et al on malnutrition among children in urban area (Delhi) stated only 20% of children were exclusively breastfed (EBF) where 42% of urban children were EBF[9]. in the present studywhile in a study done by

sarkar et al in an urban slum in Bhopal, it was observed that 76.4% of mothers practised exclusive breastfeeding[5]. In a study done by Patel S, et al (2020) 73.1% of mothers practiceticed EBF in rural areas, where in this study, only 30% of the mothers from rural practised EBF[10].

Reena Rani, (2020) et al in their study mentioned that,64% of covid infected mothers exclusive breastfed, similar to current study - 67% of covid infected mothers exclusively breastfed[11]. A study done in Pune, Maharashtra of the 126 mothers studied the rate of exclusive breastfeeding was found to be 62.7% and 16.6% of the COVID positive mothers discontinued exclusive breastfeeding whereas in the current study 33.3% of the mothers who were COVID positive did not practice exclusive breastfeeding[12].

Mothers with secondary and higher level of education were less likely to exclusively breastfeed their infants compared to those with no education, in Southern India as mentioned in study on regional prevalence and determinants of exclusive breastfeeding in India by Akpojene F, Vijaybhai MD, Akorede O et al which is similar to the present study were almost 26.5% of literate mothers didn't exclusively breastfeed their babies[13].

In the current study 37% of the babies were fed with pre-lacteal feeds and the most common was honey followed by ghee and honey, similar to a study where 56.4% were fed with pre-lacteal feeds but the most common pre-lacteal feed provided was milk from animal sources[5] which in turn was similar to a study done by Das et al, in Bihar where 26.2% babies were provided pre-lacteal feeds which was some form of milk other than breastmilk[14]. But in the study by Sarkar et al, it was found that 45.5% of 55 mothers, initiated breastfeeding within 1 hour post-delivery, 72.7% fed colostrum to their babies[5]. which was similar to the current study where 70% of 100 mothers initiated breastfeeding early and 95% fed colostrum to their babies. Similar findings were also observed in a study by Sultania P et al, where 45% of the study participants-initiated breastfeeding within one hour after birth of the baby[15]. In a study by Ekambaram et al, only 56% of the babies were fed colostrum[16].

In the current study type of family is not showing a significant association with exclusive breastfeeding practices in contrast to a study by Sarker et al where appropriate breastfeeding practices are most common in third generation families 11 (78.57%), followed by extended families 23 (76.66) and least in nuclear families 8 (72.72%)[5]. It's found in this study that educational status of the mother is not having a significant association with exclusive breastfeeding practiced which is in contrast to a study by Dasgupta done in a slum in Kolkata, where it was found that mothers with better educational status practised appropriate feeding practices[17]. It was observed that family size and type of family are the major determinants of Infant and Young Child Feeding Practices (IYCF) practices in rural India as mentioned in Kogade p et al[18]. In a study by Liu et al on social determinants of breast-feeding in China, it was found that mother's with high educational status and occupational status were less likely to breastfeed but those with high socio-economic status are to initiate breastfeeding at the right time[19].

On doing the FGD it was under stood that one of the barriers in breastfeeding during COVID -19 was lack of family support which was in contrast to a study done by Vazques et al in London where the question on who is the most influential person with infant feeding, highest proportion of women responded that their partner (38%), followed by health professionals (20%), friends and family (19%), support groups (19%) and online groups (20%) as influencers on breastfeeding[20].

A study done by Okinarum in Indonesia, it was mentioned that maternal affection to baby, support system from family and community, having adaptive coping strategy as the enablers[21].

In present study, it was found that lack of healthcare accessibility, lack of awareness on transmission of COVID-19 and breastfeeding practices in addition to lack of family support as the barriers. In a qualitative study done by Arti in Delhi, it was observed that anxiety among mothers regarding breastfeeding practices during COVID-19, separation of the COVID-positive mother from her newborn at birth, compromised counselling on breastfeeding, logistic difficulties in expression and transportation of COVID-positive mother's milk to her baby in the nursery, COVID restrictions, unavailable family support in wards and nursery, and inadequate infrastructure were identified as major barriers.

Awareness on COVID appropriate behaviour and good health seeking behaviour are the promoters/ enablers identified in the present study which was similar to the findings mentioned in a study by Arti ae al, where keeping the mother-newborn duo together, mobilization of resources, optimization of human resources, risk triaging, leveraging technology, and leadership-in-crisis-situations were notable enablers[7].

A qualitative study revealed that the pandemic highlighted the gaps that were already existent in the health care services and the struggles of motherhood. The participants insisted to create a community based or health care system based special services during pregnancy and postpartum period to support their physical, emotional and psychological needs, whether during pandemic situation or not[22].

Separation of mothers and infants due to COVID-19 infection or prevention measures. Lack of skin-to-skin contact between mothers and infants, which is important for bonding and breastfeeding initiation. Insufficient support from health care providers, family members, and peers due to physical distancing and limited resources. Online breastfeeding support as an alternative to face-to-face support, which had some benefits but also some limitations and challenges. The impact of the pandemic on breastfeeding

rates and experiences, which varied depending on the context and the individual situation of each mother and infant. The findings are very similar to our current study[23].

Though ICMR, WHO guidelines suggested no separation of mother and infant and exclusive breastfeeding however, misinformation, fear of infection, infodemic, lockdown, ever evolving health guidelines created confusion among the mothers as well as the health care providers compromising breastfeeding initiation, exclusive breastfeeding practices in our country. The lockdown has both advantage as well as disadvantages.

The online support systems offered relief to some mothers however it was not accessible to all specially the women in the low socio-economic strata.

CONCLUSION

In the present study 72% of the participants exclusively breastfed their children. There is an increase in proportion practicing exclusive breastfeeding during COVID-19 comparing NFHS-5 except in rural. Though its commendable to see that the breastfeeding practices have improved over the years there exists a need to bridge the "practice gap" of mothers from rural and lower socio-economic strata of the community. The counselling to mothers is an opportunity to sensitize the mothers on the health of mother-baby duo and preferred to be continued after the delivery of the baby for continuous education on proper care of newborn, exclusive breastfeeding and advantages, the importance of colostrum feeding and the timing of weaning. The most important determinant of breastfeeding especially in a pandemic, was family support. All this can be achieved by conducting outreach programs by ASHA workers or community health workers.

RECOMMENDATION

1. Counselling to mothers in each antenatal visit and post-partum: continuous education on proper care of newborn, exclusive breastfeeding and advantages, the importance of colostrum feeding, the timing of weaning.
2. Family and social support to enhance breastfeeding and mental support of mothers
3. Promotion of milk bank

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CONFLICTS OF INTEREST

Authors declared that there is no conflict of interest.

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All necessary consent & approval was obtained by authors.

CONSENT FOR PUBLICATION

All necessary consent for publication was obtained by authors.

DATA AVAILABILITY

All data generated and analyzed are included within this research article.

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REFERENCES

1. Welfare Family. State Fact Sheet Karnataka. 2019; National Family Health Survey [Internet]. [cited 2021 Dec 11]. Available from: http://rchiips.org/nfhs/NFHS-5Report_KA.shtml
2. India State-Level Disease Burden Initiative Malnutrition Collaborators. The burden of child and maternal malnutrition and trends in its indicators in the states of India- the Global Burden of Disease Study 1990-2017. Lancet Child Adolescent Health. 2019 Dec;3(12)855-870. doi: 10.1016/S2352-4642(19)30273-1
3. Zhu, H., L. Wang, C. Fang, et al. Clinical analysis of 10 neonates born to mothers with 2019-nCoV pneumonia. Translational Pediatrics. 2020. **9:** 51–60
4. WHO. Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected: interim guidance. 3March 2020.World Health Organization; 2020
5. Sarkar R, Kawanpure H. Study on infant feeding practice among children up to 6 months in an urban slum of Bhopal. Public Health Review- International Journal of Public Health Research. 2021;8(3):39-44. Available From (https://publichealth.medresearch.in/index.php/ijphr/article/view/162)
6. Raghuwanshi MM, Vaishnav LM, Chakole S. Breastfeeding Practices During COVID-19: A Narrative Article. Cureus. 2022 Oct 22;14(10):e30588. doi: 10.7759/cureus.30588. PMID: 36420243; PMCID: PMC9678492.
7. Maria A, Mukherjee R, Upadhyay S, Pratima K, Bandyopadhyay T, Gupta R, Dubey B, Sharma A, Mall PK, Sahoo M, Pathak KK, Pawar P and Mohapatra A. Barriers and enablers of breastfeeding in mother–newborn dyads in institutional settings during the COVID-19 pandemic: A qualitative study across seven government hospitals of Delhi, India. Frontiers in nutrition. 2022.9:1052340. doi: 10.3389/fnut.2022.1052340
8. Dudeja N, Sharma D, Maria A, Pawar P, Mukherjee R, Nargotra S and Mohapatra A. Implementing recommended breastfeeding practices in healthcare facilities in India during the COVID-19 pandemic: a scoping review of health system bottlenecks and potential solutions. Frontiers in Nutrition.2023.10:1142089. doi: 10.3389/fnut.2023.1142089
9. Aneja B, Singh P, Tandon M, Pathak P, Singh C, Kapil U.

Etiological factors of Malnutrition among infants in two urban slums of Delhi. Indian Pediatrics.2001;38:160-5

10. Patel S, Nigam K K, Babu G C, Kadali S R M. A study of breast-feeding practices among rural women. Public Health Review International Journal of Public Health Research2020;7(6):51-57.AvailableFromhttps://publichealth.medresearch.in/index.php/ijphr/article/view/140
11. Rani R, Dhakate M, Goswami D, Gupta S, Rathore AM, et al. Breastfeeding and Contraceptive Methods in Women With Severe Acute Respiratory Syndrome Coronavirus- 2 (SARS-COV-2) Infection in Peripartum Period. Journal of Family and Reproductive Health 2022; 16(1): 61-6
12. Azad Z, Muley A, Medithi S. Breastfeeding Patterns and Stress Among Lactating Women in Pune During the COVID-19 Pandemic. Indian Pediatrics. 2022 May 15;59(5):424-425. doi: 10.1007/s13312-022-2524-3.
13. Ogbo FA, Dhami MV, Awosemo AO, Olusanya BO, Olusanya J, Osuagwu UL, Ghimire PR, Page A, Agho KE. Regional prevalence and determinants of exclusive breastfeeding in India. International Breastfeeding Journal. 2019 May 16;14:20. doi: 10.1186/s13006-019-0214-0
14. Das A, Mala G S, Singh R S, Majumdar A, Chatterjee R, Chaudhuri I, et al. Pre-lacteal feeding practice and maintenance of exclusive breast feeding in Bihar, India–identifying key demographic sections for childhood nutrition interventions- a cross-sectional study. Gates open research. 2019;3.
15. Sultania P, Agrawal NR, Rani A, Dharel D, Charles R, Dudani R. Breastfeeding Knowledge and Behaviour Among Women Visiting a Tertiary Care Center in India- A Cross-Sectional Survey. Annual Global Health. 2019 May 3;85(1)64. doi: 10.5334/aogh.2093
16. Ekambaram, Maheswari, Ballambattu Bhat, and Mohamed Asif Padiyath Ahamed. Knowledge, attitude and practice of breastfeeding among postnatal mothers. Current Pediatric Research. 14;2(2010)119-124
17. Dasgupta A, Naiya S, Ray S, Ghosal A, Pravakar R, Ram P. Assessment of infant and young child feeding practices among the mothers in a slum area of Kolkata- A cross-sectional study. International Journal of Biological& Medical Research.2014;5(1)3855-3861
18. Kogade P, Gaidhane A, Choudhari S, Khatib M N, Kawalkar U, et al. Socio-cultural determinants of infant and young child feeding practices in rural India. Medical Science
19. Liu J, Shi Z, Spatz D, Loh R, Sun G, Grisso J. Social and demographic determinants for breastfeeding in a rural, suburban and city area of south East China. Contemp Nurse. 2013;45(2):234–43.)
20. A.Vazquez-Vazquez, S. Dib, E. Rougeaux, J.C. Wells, M.S. Fewtrell. The impact of the Covid-19 lockdown on the experiences and feeding practices of new mothers in the UK: Preliminary data from the COVID-19 New Mum Study. Appetite. Volume 156, 2021,104985. ISSN 01956663.https://doi.org/10.1016/j.appet.2020.104985. (https://www.sciencedirect.com/science/article/pii/S019566632031607X)
21. Okinarum GY, Rochdiat W. Breastfeeding experience during COVID-19 pandemic in Indonesia: strengthening and weakening elements. Malaysian Journal of Medical Sciences. 2022;29(3):110–121. https://doi.org/10.21315/mjms2022.29.3.11)
22. P. Kinser, N. Jallo, S. Moyer et al. Midwifery 109 (2022) 103313) Kinser P, Jallo N, Moyer S, Weinstock M, Barrett D, Mughal N, Stevens L, Rider A. "It's always hard being a mom, but the pandemic has made everything harder": A qualitative exploration of the experiences of perinatal women during the COVID-19 pandemic. Midwifery. 2022 Jun;109:103313. doi: 10.1016/j.midw.2022.103313
23. Lubbe W, Niela-Vilén H, Thomson G, Botha E. Impact of the COVID-19 Pandemic on Breastfeeding Support Services and Women's Experiences of Breastfeeding: A Review. International Journal of Women's Health. 2022 Oct 6;14:1447-1457. doi: 10.2147/IJWH.S342754. PMID: 36225180; PMCID: PMC9549794