



Original Article

## Utility of 'structured training module' in the training of healthcare workers on breast-feeding counselling during COVID-19 pandemic – A quality initiative study

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### ABSTRACT

**Objectives:** Protection and promotion of breastfeeding has been a challenge for all healthcare team members during the COVID-19 pandemic. It is important for all healthcare workers (HCWs) to be aware of the existing guidelines and to counsel the parents and family members regarding the same. We used a structured training module using analyse, design, develop, implement and evaluate (ADDIE) model for training nurses on breastfeeding counselling during the pandemic. The objectives of this study were to assess the effectiveness of the structured training module in the training of HCWs on breastfeeding counselling.

**Materials and Methods:** This is a hospital-based cross-sectional study. The structured training module was prepared using the 'ADDIE model'. It was aimed at educating nursing professionals about the guidelines, common procedures and counselling skills related to breastfeeding during the COVID-19 pandemic and simultaneously emphasizing due precautions to prevent and control the spread of infection. The faculties of the department of paediatrics were the educators.

**Results:** The data obtained from the pre-test and post-test were analysed. The difference between the mean scores was statistically significant with  $P < 0.001$ .

**Conclusions:** ADDIE model is a simple and effective tool to train healthcare professionals. The structured training module can be used by institutions for training their team members and for the implementation of institutional protocols.

**Keywords:** ADDIE model, Training module, Breastfeeding, Healthcare professionals

### INTRODUCTION

The COVID-19 pandemic that started in late 2019 brought sudden and unexpected changes in the lifestyle of people all over the world. Social distancing and mask usage was advocated as the main weapons to break the chain of transmission. However, this practice adversely affected the normal experiences of pregnancy, childbirth and breastfeeding.<sup>[1]</sup>

Breastfeeding is required not only for the nutritional and immune benefits of the infant, but also it promotes mother-infant bonding.<sup>[2]</sup> In the context of the COVID-19 pandemic, breastfeeding infants and adhering to COVID-19 norms such as social distancing and using face masks has been very challenging for mothers, families and healthcare providers. The common scenarios

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that create the dilemma regarding breastfeeding for most of the people are given in [Box 1].<sup>[3]</sup>

Nurses are the front-line COVID warriors among healthcare workers. Along with the other healthcare team members, they have done excellent work putting their own lives at risk to support the patients and their families during this pandemic.<sup>[4]</sup> They play an important role in the protection as well as promotion of breastfeeding. The efficiency of the nurses in counselling the parents and family members is the cornerstone for successful breastfeeding.

Our hospital, an Institute of National importance situated in South India, played a crucial role in tackling the pandemic and providing quality health care to people in the region during this period of crisis. However, simultaneously, we faced challenges in the maintenance of breastfeeding in COVID-positive mothers due to the above-mentioned doubts among family members as well as healthcare workers (HCWs). This led to the need for a training module incorporating the recent changes in breastfeeding guidelines during the COVID-19 pandemic that could provide the HCWs with the desired knowledge and skill in breastfeeding counselling in this pandemic situation.

We conducted this study to evaluate the utility of this novel 'Structured training module' using the 'Analyse, Design, Develop, Implement and Evaluate (ADDIE) model' for training HCWs on breastfeeding counselling during the COVID-19 pandemic.

## MATERIAL AND METHODS

This quality initiative study was conducted in the department of paediatrics of a tertiary care teaching institute in South India on the occasion of the World breastfeeding week celebration in the 1<sup>st</sup> week of August. A training programme was organised for nursing professionals working in our hospital. The training was provided by faculties with past experience in conducting training programmes on breastfeeding as well as direct involvement in the care of COVID-positive patients. Institute Ethics Committee approval was obtained for this study (AIIMS/MG/IEC/2022-23/168) and written informed consent was obtained from all participants before enrolment.

The structured module was prepared based on the 'ADDIE' model. It is an instructional design model to facilitate teaching-learning. It comprises five stages as mentioned in [Box 2].<sup>[5]</sup>

The need for this training was analysed and the contents, that is, the topics or skills to be addressed were planned accordingly. The objective of the programme, the target audience, resource persons, teaching-learning method and teaching-learning media were decided. The training module

**Box 1:** Common queries related to breastfeeding during COVID pandemic.

1. The mother had COVID-19 infection just before delivery and recovers at the time of delivery
2. The mother is COVID-positive at the time of delivery
3. The COVID-positive mother has a breastfeeding infant
4. Whether continuation of breastfeeding depends on the COVID status of the baby
5. If the mother is on medications, does it adversely affect the baby?

**Box 2:** Stages of 'ADDIE' design.

1. Analysis: The need for the module is analysed as per the existing situation and the contents are planned
2. Design: The objectives are decided and the activity is planned
3. Development: The structure of the programme and the educational material is developed in the suitable language
4. Implementation: The programme is conducted as per the plan
5. Evaluation: The performance of the learners and resource persons in the session is compared with the expected result.

ADDIE: Analyse, Design, Develop, Implement and Evaluate

was developed based on the existing national guidelines, the World Health Organisation guidelines and other guidelines on breastfeeding during the COVID-19 pandemic and guidelines on breastfeeding counselling.<sup>[6,7]</sup> The contents focused on important issues related to breastfeeding faced by the family members as well as the nursing officers. The areas that need to be strengthened were identified and incorporated.

The training protocol and questions for the pre- and post-test were written by the authors, then, it was shared with other faculties and staff of the department of paediatrics. Multiple sessions of discussion were conducted with a panel of experts for validation of contents as well as that of the questionnaire prepared for pre-test and post-test. The training was planned to have three sessions, as mentioned in [Table 1]. Permission was obtained from the competent authority for scheduling the training programme. Four paediatricians, two general physicians and two nurses were involved in the training programme. All of them attended orientation sessions regarding the same before. The final modules administered to the participants are given in [Table 1].

The session was preceded by a pre-test and was succeeded by a post-test. The questionnaire comprised 20 multiple-choice questions. All the questions were based on the understanding of the participants regarding the importance, techniques of breastfeeding and the frequently asked questions by the parents regarding breastfeeding during the COVID pandemic, the challenges encountered in establishing successful breastfeeding and counselling the parents and family members in this regard during

**Table 1:** Details of the training module.

Sessions	Duration of the session	Content of the session	Domain of learning involved	Teaching-learning method	Teaching-learning media used
1	15 min	Recommendations and guidelines on breastfeeding during the pandemic, the challenges faced by the healthcare providers, the frequently asked questions by the parents and family members of breastfeeding babies.	Cognitive	Lecture	Powerpoint presentation
2	15 min	Common procedures and hygienic practices related to breastfeeding: Handwashing, use of soap-water and hand sanitizers, wearing a mask, doffing and donning of personal protective equipment, acceptable positions of mother during breastfeeding, good attachment, expression of breast milk, katori spoon feeding, paladai feeding, bottle feeding,	Cognitive, Psychomotor	Demonstration	LCD projector for videos and images, Model.
3	30 min	Counselling the parents and family members related to breastfeeding during COVID-19 pandemic: (i) Skills of listening to the family members, using appropriate responses and gestures, asking questions, reflecting back, empathizing (ii) Skills of building confidence and giving support to the mothers	Cognitive, Affective	Lecture, Role play	Power point, Models.

the pandemic. During the training sessions, all these issues were discussed in detail along with the current recommendations. The data obtained were anonymous. The gender, qualification and work experience of all the participants were recorded. At the end of the session, feedback was collected from the participants.

### Statistical analysis

Data analysis was done using SPSS version 26. Descriptive statistics were calculated. Paired *t*-test was applied for comparison between the pre-test and post-test.  $P < 0.05$  was considered statistically significant.

### RESULTS

A total of 32 nurses who participated in the training programme were included in the study. The response rate was 100%. There were 8 (25%) males and 24 (75%) females. Nine (28.2%) members had an Masters nursing degree, while 23 (71.8%) had bachelors degree in nursing. Four among them had additional qualifications. Ten (31.3%) had previous work experience in paediatrics. The average work experience in paediatrics of all the participants was 8 months.

The total correct answers were 10.28 (51.4%) before and 15.2 (76%) after the session. The difference between the mean score of the pre-test and post-test is statistically significant with  $P < 0.0001$  [Table 2].

Subjective feedback was obtained from the participants. About 97% of the participants opined the programme to be excellent and useful in their day-to-day practice. About 81% admitted that after the training, they could counsel more confidently, and empathically with better listening and learning skills. About 34% admitted that the training gave them a lot of new information regarding breastfeeding during the pandemic. About 22% had the feedback that the training should involve all the staff of the institute in groups as it is very useful. About 12.5% felt that the duration of the session could have been more than 1 h.

### DISCUSSION

During this pandemic, several centres conducted training sessions for the doctors and staff to improve their confidence, efficiency and psychological well-being as well as to aid in better patient management. Most of this training focused on triage, control measures, preparedness of HCWs, prevention of infection while conducting different emergency procedures, etc.<sup>[8-10]</sup> However, there is limited data on institutions organizing training programmes to protect and promote breastfeeding during this difficult time.

India is third in the world in terms of the number of preterm deliveries and it has a high neonatal mortality rate. To reduce morbidity and mortality among neonates and infants, it is of utmost importance to ensure adequate availability of human milk. Separation of the baby from the mother and

**Table 2:** Mean score of pre-test and post-test (by paired sample *t*-test).

	<i>n</i>	Mean	Standard deviation	<i>t</i> -value	Mean difference	95% confidence interval of the difference	<i>P</i> -value
Pre-test	32	10.28	2.34	-10.58	-4.94	-5.9-4	<0.0001
Post-test	32	15.22	1.91				

interruption of breastfeeding has an adverse influence on the health of the baby. In addition, it reduces milk production in the mother and many times, restoration of lactation becomes difficult in spite of help and counselling by the healthcare providers.<sup>[11]</sup>

There is insufficient evidence on the transmission of COVID-19 through breastfeeding. In vaccinated mothers, the increased titre of COVID antibodies in breast milk has been reported. Hence, several institutional bodies have formulated guidelines to protect, promote and support breastfeeding during the pandemic with due precautions to prevent and control infection.<sup>[11]</sup> Indian Academy of Paediatrics came up with evidence-based breastfeeding guidelines to be followed during the COVID-19 pandemic as summarised in [Box 3].<sup>[11]</sup>

However, the successful implementation of these recommendations depends on addressing the concern and fear among the frontline HCWs, especially nurses. Nurses should be made aware of these guidelines as well as their practical implications.

The first session of our module was targeted at improving the knowledge of the nurses.

After the nurses are aware of the recommendations, they were trained on the different skills as mentioned in the methodology in the second session of the module. This would help in the implementation of the recommendations while taking every precaution to prevent the transmission of infection through fomites and droplets.

The family-centred approach is a key to good patient care in paediatrics. The mother as well as her family needs information and emotional support. The ability of a nurse to respond empathically and to communicate his/her desire to understand the apprehension can help the patients and family members cope with the situation. Transmission of the information in a supportive environment drives treatment planning and ensures a good patient outcome. Nurse-focussed communication skills training programmes are essential to train nurses to recognise and address the patient's emotions.<sup>[12]</sup>

The third session of our module focussed on improving the communication skills of the nurses.

Overall, this training included the cognitive, affective as well as psychomotor components of learning. The results of this study reflect the effectiveness of this brief module

**Box 3:** IAP guidelines on breastfeeding during COVID-19 pandemic.

#### In case of mothers with suspected or confirmed COVID-19 disease

1. Breastfeeding should be initiated within 1 h of birth.
2. Skin-to-skin contact, exclusive breastfeeding and Kangaroo Mother Care (KMC) is to be continued as usual.
3. Mother should take due precaution for prevention and control of COVID-19 during breastfeeding, that is, wearing a mask, hand hygiene before and after feeding the baby, regular cleaning and disinfection of the high contact surfaces.
4. If the mother is sick and is unable to breastfeed the baby, then baby should be fed by expressed breast milk by another care taker who is COVID negative.
5. Psychosocial and technical support to the family members must be provided by a trained counsellor regarding breastfeeding during the pandemic.

IAP: Indian academy of paediatrics

in improving the knowledge of our nurses. This training improved the sense of responsibility of nurses as well as their enthusiasm to work. The feedback showed their satisfaction and agreement with the module.

#### Limitations

Although the module included all the three domains of learning, the post-test assessed only the cognitive domain and it addressed the basic levels of Bloom's taxonomy, that is, remembering and understanding. It did not include affective and psychomotor components. The study did not include a follow-up of the participants to observe the implementation of the gained knowledge at the workplace. Hence, the higher aspects of Bloom's taxonomy such as applying and analysing could not be assessed.

#### CONCLUSION

The training module is designed to meet the need of the hour. The structured modules developed based on the 'ADDIE' model proved to be simple, objective and effective in terms of training healthcare professionals. It was found feasible as well as considered useful by the participants. The feedback obtained from the trainers as well as the participants may be used to further strengthen the module.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

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