

## Original Research Article

# Effect of structured teaching program on the knowledge and opinion among Indian nursing students regarding breastfeeding

Anjali Bharani\*, Mohini Harshey, Tanmay Verma, Swati Raipurkar

Department of Pediatrics, Index Medical College, Hospital and Research Centre, Indore, Madhya Pradesh, India

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### \*Correspondence:

Dr. Anjali Bharani,

E-mail: [dr.anjalibharani@gmail.com](mailto:dr.anjalibharani@gmail.com)

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## ABSTRACT

**Background:** Breastfeeding is a basic human activity, vital to the infant and maternal health and of great economic value to the households and societies. Despite this, the rate of exclusive breastfeeding in children below six months, in India continues to be suboptimal. This contributes to the high burden of infant mortality in our country. Nurses play a very important role in the maternity ward by giving the right advice and support for initiation and maintenance of lactation in the post-natal mothers. There is paucity of research assessing the knowledge of nursing students regarding breastfeeding and also to study the effect of a structured teaching program on their knowledge.

**Methods:** A self-administered pre-test questionnaire regarding breastfeeding was given to a single sample of nursing students and then a structured teaching program was administered to them. The improvement in their knowledge was recorded by a post-test self-administered questionnaire. The data was statistically analyzed.

**Results:** A total of eighty students were enrolled in the study. The overall knowledge and opinion of nursing students regarding breastfeeding were good. However, two-third of the students lacked knowledge on exclusiveness of breastfeeding. Almost half of the students did not know about the true contraindications to breastfeeding. Only twenty-one percent students knew about the correct technique of breastfeeding. The knowledge improved significantly after the structured teaching program (p value: 0.056).

**Conclusions:** Implementation of structured teaching program significantly improved the knowledge of nursing students in all domains of breast feeding knowledge.

**Keywords:** Breastfeeding, Knowledge, Nursing students, Teaching program

## INTRODUCTION

Breastfeeding has several advantages for both the infants and mothers and needs to be strongly encouraged.<sup>1</sup> The WHO recommends exclusive breastfeeding up to 6 months age with continued breast feeding along with appropriate complementary foods up to 2 years age or beyond.<sup>2</sup> Exclusive breast feeding is defined as infant feeding with human milk without the addition of any other liquids or solids.<sup>3</sup> The Breastfeeding Promotion Network of India (BPNI) was formed in 1991 to promote

mother and child health to through protection, promotion and support of breastfeeding.<sup>4</sup>

However, despite strong evidence supporting breastfeeding its prevalence has remained low contributing to the high burden of infant mortality nationwide. According to the National Family Health Survey 4 (NFHS 4) report the rate of exclusive breastfeeding in Madhya Pradesh continues to be sub-optimal and was only 58 % for < 6 months old.<sup>5</sup> The infant mortality rate 51/1000 live births for Madhya Pradesh continues to be one of the highest in India.

Nurses play a pivotal role in the maternity ward in giving right advice and support for successful initiation and maintenance of lactation in postnatal mothers. Inadequate support and lack of accurate information by healthcare professionals are reported factors affecting breastfeeding failure. Although students studying in health-related fields, who receive nutrition education, including optimum infant feeding methods, are considered advocates of breastfeeding, there is paucity of research that assesses their breastfeeding knowledge. Also, there is lack of knowledge regarding the effect of a structured teaching program on improvement in their knowledge regarding breastfeeding. Hence this study was planned to assess the knowledge of nursing students and to know the impact of a structured teaching program on the knowledge regarding breastfeeding in these students studying at a recognized college in central India.

## METHODS

The aim of this study was to assess the knowledge of nursing students regarding breast feeding and to investigate the impact of a structured teaching program on their knowledge and opinion, while they were studying in a nursing college.

### Design and setting

A cross-sectional descriptive study design was used to determine knowledge and attitude towards breastfeeding among a single sample of nursing students and to record the improvement in their knowledge after a structured teaching program. The required clearance was obtained from the institutional ethic committee. The setting for this study was a recognized nursing college in central part of India.

### Participants

A convenience sample of undergraduate nursing students was recruited from a recognized nursing college in central India. All student participants were made aware of the purpose of the study. Prior to data collection, informed consent was obtained.

### Instruments

Demographic data was collected using a questionnaire developed for this study by the investigator. A pre-test self-administered questionnaire was given to the single sample of nursing students. Subjects were asked to give information on age, gender, education, marital status. The breastfeeding knowledge survey consisted of a series of factual true/false questions addressing the following domains: benefits of breastfeeding to mother and child, properties of breast milk, exclusiveness of breastfeeding, practical knowledge, technique of breastfeeding and contraindications to breastfeeding.

The survey took approximately 20 minutes and was supervised by the investigator. After the pre-test, students attended structured teaching sessions on breastfeeding and its practical demonstrations. A post-test self-administered questionnaire was filled by the same sample of students after 3 days.

Data collected through self-administered structured questionnaire was entered in a two excel sheets as pre-test and post-test data and analyzed. Paired t-test was used to derive the p value in the pre- and post survey test scores. Unpaired t-test was used to compare the responses between female and male nursing students.

## RESULTS

A total of eighty students were enrolled in the study. The male to female ratio was 0.7:1. The students belonged to the age group between 18-23 years. Out of these majority were unmarried and only three were married as shown in Table 1.

**Table 1: Socio-demographic characteristics.**

Variable	Students (N= 80)	Students (%)
<b>Gender</b>		
Female	45	56.25
Male	35	43.75
<b>Age</b>		
18-20	41	51.25
20-23	39	48.75
<b>Marital status</b>		
Married	3	3.75
Unmarried	77	96.25

The results of the pre-test questionnaire have been tabulated in Table 2. Majority (80%) of the students knew that breast milk was the ideal food for the newborn baby. Majority (94%) students knew that breast milk builds up immunity of the baby and provides protection against diarrhea/ear infections. However, only 75 % of students knew about early initiation of breast feeding preferably within an hour of delivery. About 83% students knew that rooming in of the mother and baby was important. Majority of students (94%) knew that burping was essential.

Majority of the students (83.5%) thought that pre-lacteals may be given to newborn. Also, 60% of the students believed that water may be given to the newborn baby during first six months along with breastfeeding. Only 48% of the students knew that mothers can continue to feed the child with hygiene precautions during episodes of fever/ minor sickness. Only 66% students knew that HIV/AIDS was the true contraindication to breastfeeding. And only 21% knew about the correct technique of breastfeeding that both nipple and areola should be introduced in babies' mouth.

Only 56% students knew that breast milk can be expressed and stored at room temperature in a clean, closed container for eight hours by working mothers, who need to stay away from the baby during work hours. Only 44% percent students knew that positive re-enforcement of mother is very important to avoid any inhibitory effects on reflexes of mother, if she has low milk output. Only 28% knew that babies should be fed on demand and not on scheduled timings.

Table 3 highlights the comparative analysis between variables and breastfeeding knowledge survey score. On comparison between the knowledge scores of male and female students, no significant difference was found ( $p = 0.373$ ). On comparison between the pre- and post-test knowledge of the nursing students a statistically significant difference was found ( $p = 0.0056$ ).

**Table 2: Pre-test, number and percentage of students with correct responses to the breast-feeding knowledge questions.**

Question	Correct response	Number of correct response	% correct response
Breast milk is the ideal food for a baby?	True	64	80
Breast feeding should be started as early as possible (within half to one hour) for both normal as well as caesarean deliveries?	True	60	75
Pre-lacteals like honey/water are good for the new-born baby?	False	14	17.5
Breast milk protects baby against diarrhoea/ear infections and build up immunity of the baby?	Correct	75	93.75
Breast milk protects mother against breast, ovarian cancer and helps in losing weight?	Correct	50	62.5
Exclusive breast feeding provides a way of contraception to the mother?	Correct	49	61.25
First sticky milk (colostrums) should not be given to the baby?	False	55	68.75
Mother should not feed the baby during fever, cough, cold?	False	38	47.5
Cow's milk/formula feed should be given to the baby in the first 2 days if the mother has delivered by operative delivery?	False	36	45
Water may be given to the new-born baby within first 6 months, especially during summer months to protect against dehydration?	False	32	40
Working mothers can express the breast milk and store at room temperature for 8 hours, so as to be fed to the baby?	True	45	56.25
Mothers with Hepatitis B and TB on treatment should not feed the baby?	False	19	23.75
It is acceptable to separate mother and baby after caesarean delivery to allow for mother to rest?	False	67	83
Mother of twins/triplets cannot produce sufficient milk to provide for both/all the babies?	False	33	41.25
If mother has low milk output she may be condemned?	False	35	43.75
Breastfeeding affects beauty of the mother and is not possible if mother is planning to join back for work?	False	41	51.25
Mother with HIV/AIDS should not feed the baby?	True	53	66.25
During breastfeeding only nipple should be introduced in baby's mouth, keeping the areola outside for effective suckling by the baby?	False	17	21.25
Mother can feed in sitting position only, as other positions are not correct?	False	43	53.75
Burping is essential after breast feeding?	True	75	94
Exclusive breastfeeding is to be given till 4 months of postnatal life?	False	36	45
Baby should be given feeds every 2 hours by clock to avoid hypoglycaemia?	False	22	27.5
Keeping mother and baby together in the same bed and allowing skin to skin contact helps initiate breastfeeding?	True	67	83
Women with smaller breasts cannot breastfeed the baby?	False	56	70
Mother with retracted nipple cannot breastfeed the baby as it cannot be corrected?	False	35	43.5

**Table 3: Comparative analysis between variables and breastfeeding knowledge survey score.**

Variable	Level of significance (p value)
Gender	0.373
Pre- and post-test	0.0056

## DISCUSSION

The primary aim of this study was to assess knowledge and opinion among nursing students regarding breastfeeding in central India and see the effect of the educational intervention on it. Results suggest that, in general the majority of the students had adequate breastfeeding knowledge and positive opinion regarding breastfeeding and believed that it was the ideal food for a newborn baby.

Although overall knowledge on benefits of breastfeeding was high, knowledge on exclusiveness of breastfeeding in the first six months of life was low as 60% percent students believed that water may be given in addition to breast milk and 83.5% students believed that pre-lacteals may be given to the newborn. Promotion of exclusive breastfeeding is particularly important in our country because it has high burden of poverty, infectious diseases and low access to clean, potable water and lack of good sanitation. Only 75% students knew that breastfeeding should be initiated as early as possible, within an hour of delivery, which was similar to a study done by Anjum et al.<sup>6</sup> It is known that early initiation of breast feeding is particularly important in reducing neonatal mortality as shown by a study from Ghana which showed that up to 22% of neonatal deaths can be prevented if breastfeeding is started within the first hour of birth.<sup>7</sup>

There was gap in the knowledge regarding contraindications to breastfeeding as only about half of students thought that mother can continue to feed the baby during episodes of sickness or minor infections and only two-thirds knew that HIV/ AIDS infection was the only true major contraindication for breast feeding.

Very few students (one-fifth) had knowledge about the correct technique of breastfeeding, that both areola and nipple needs to be introduced in baby's mouth for effective suckling by the baby and this improved to more than two-third after the teaching program. The knowledge regarding expression and storage of breast milk is very important in the context of separation of mother and baby as, when the baby is sick and needs ICU care or when the mother is planning to join back to work. In our study, only 56% students had correct knowledge regarding this fact.

There was no significant difference between the knowledge scores of female and male nursing students. However, in other studies done on students a significant difference was found among female and male students with female students scoring better than males.<sup>8-10</sup> This

difference may be explained by the fact that while learning both male and female students are equally taught and emphasized about the advantages of breast feeding.

The breast-feeding knowledge improved significantly after attending the structured teaching program ( $p=0.0056$ ). The knowledge on exclusiveness of breastfeeding, technique of feeding, and need for early initiation of feeding, and true contraindications to breastfeeding, improved after attending the teaching program. Studies have shown that availability of trained personnel/ peer counselor can significantly improve breastfeeding initiation and duration in rural, low income population.<sup>11-15</sup> Role of nurses as health care worker for successful implementation of breastfeeding cannot be understated.<sup>16</sup> Studies have emphasized the need to adequately train the health care staff for successful breast feeding.<sup>17</sup>

Unfortunately, optimizing breastfeeding practices has not been understood as one of the most effective interventions to reduce infant and young child mortality, morbidity and malnutrition.<sup>18</sup> Nursing students, as future nurses will be dealing with pregnant mothers and breastfeeding related problems, hence they should be well equipped with correct knowledge to provide the much-needed support and advice for successful breastfeeding.

## CONCLUSION

Though overall knowledge of nursing students regarding breastfeeding as ideal food for baby was good. The knowledge regarding exclusiveness, correct technique and true contraindication to breastfeeding was poor. Implementation of structured teaching program significantly improved the knowledge of nursing students in all domains of breast feeding knowledge.

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