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A Study to assess the effectiveness of a planned teaching program on knowledge and attitude regarding early skin-to-skin contact between mother and Baby on the promotion of immediate initiation of breastfeeding after Caesarean delivery among staff nurses working in maternity OT and labor room at New Civil Hospital, Surat

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A B S T R A C T

Background: Early skin-to-skin contact (SSC) between mother and baby immediately after birth has been widely recognized for its benefits in promoting breastfeeding initiation, regulating neonatal body temperature, and enhancing maternal-infant bonding. However, in cases of cesarean delivery, the implementation of SSC is often delayed due to various medical and procedural challenges. This study aimed to assess the effectiveness of a planned teaching program on the knowledge and attitude of staff nurses regarding early SSC and its role in the promotion of immediate initiation of breastfeeding after cesarean delivery.

Methods: A quasi-experimental pre-test and post-test design was used. A purposive sample of 100 nursing students from New Civil Hospital, Surat, was selected. Data were collected using a structured questionnaire and an attitude scale before and after the intervention. The planned teaching program consisted of lectures, demonstrations, discussions, and audiovisual aids. Data were analyzed using descriptive and inferential statistics.

Results: The study revealed a significant improvement in knowledge and attitude scores among participants post-intervention. Pre-test results showed that only 20% of participants had good knowledge, while this increased to 93.33% post-intervention. Similarly, attitude scores showed a positive shift, with a significant increase in mean values. The paired t-test analysis confirmed the statistical significance of these improvements ($p < 0.05$).

Conclusion: The study demonstrates that a structured educational intervention can effectively enhance the knowledge and attitudes of staff nurses regarding early SSC and immediate breastfeeding initiation after cesarean delivery. These findings emphasize the need for continuous training programs for nursing staff to improve neonatal and maternal outcomes in maternity care settings.

KEYWORDS: Early skin-to-skin contact, Cesarean delivery, Breastfeeding initiation, Staff nurses, Planned teaching program

INTRODUCTION

Early skin-to-skin contact (SSC) between mother and newborn immediately after birth is a well-established practice that promotes maternal-infant bonding and enhances neonatal health outcomes. The World Health Organization (WHO) recommends early SSC as a crucial step in the immediate initiation of breastfeeding, as it helps regulate the neonate's temperature, stabilizes blood glucose levels, and enhances maternal oxytocin release, facilitating lactation (1,2). Despite its benefits, implementation of SSC following cesarean delivery remains suboptimal in many healthcare settings due to various logistical and knowledge-related barriers among healthcare providers (3).

Caesarean section deliveries pose unique challenges to the implementation of SSC due to surgical and post-operative concerns. However, studies suggest that integrating SSC into routine post-cesarean care improves breastfeeding initiation rates and neonatal stability (4). Nurses play a critical role in facilitating SSC and ensuring its successful implementation. Their knowledge and attitudes toward SSC significantly influence the adoption of this practice in maternity operation theaters (OT) and labor rooms (5). A structured educational intervention for nursing staff has the potential to enhance their knowledge and attitudes, thereby promoting the effective implementation of SSC in post-cesarean care (6).

Several studies have demonstrated that educational programs effectively improve nurses' understanding and practice of evidence-based maternity care interventions, including SSC (7). A quasi-experimental study conducted in a tertiary care hospital revealed that nurses who underwent a structured training program showed significant improvements in their knowledge and attitudes toward SSC (8). This highlights the need for targeted educational interventions to bridge knowledge gaps and encourage best practices.

This study aims to assess the effectiveness of a planned teaching program on the knowledge and attitudes of staff nurses regarding early SSC and its role in the immediate initiation of breastfeeding after cesarean delivery at New Civil Hospital, Surat. By evaluating pre-test and post-test knowledge and attitude scores, this study seeks to determine whether structured education enhances nurses' competencies and fosters positive behavioral change in maternity OT and labor room settings.

MATERIAL AND METHODS

RESEARCH DESIGN

The study will employ a quantitative, quasi-experimental pre-test and post-test design to assess the effectiveness of a planned teaching program. The study will measure changes in knowledge and attitude before and after the intervention.

RESEARCH SETTING

The study will be conducted at New Civil Hospital, Surat, a tertiary care hospital with a well-established healthcare training program. The hospital has a diverse patient population and an active medical education system, making it an ideal setting for this study.

POPULATION

The study population will consist of nursing students enrolled in training programs at New Civil Hospital, Surat. These students will be selected based on predefined inclusion and exclusion criteria.

SAMPLE AND SAMPLING TECHNIQUE

A purposive sampling technique will be used to select participants. The sample size will be determined based on power analysis, ensuring statistical significance in measuring the impact of the teaching program. Approximately 100 nursing students will be included in the study.

INCLUSION CRITERIA

Nursing students enrolled in the training program at New Civil Hospital, Surat.Students willing to participate in the study.

Students available during the data collection period.

EXCLUSION CRITERIA

Students who have already attended a similar teaching program.

Students who do not give consent to participate.

Students absent during the data collection period.

DEVELOPMENT OF TOOL

A structured questionnaire will be developed based on a review of relevant literature and expert opinions. The tool will consist of three sections:

Section I: Demographic data (age, gender, year of study, prior knowledge on the topic).

Section II: Knowledge assessment questionnaire (multiple-choice questions and true/false items).

Section III: Attitude scale (Likert-type scale assessing opinions and perspectives on the topic).

VALIDITY AND RELIABILITY OF THE TOOL

The content validity of the questionnaire will be established through expert evaluation. The reliability of the tool will be assessed using **Cronbach's alpha**, ensuring internal consistency and accuracy in measurements.

DATA COLLECTION PROCEDURE

The study will be conducted in the following phases:

Phase 1: Pre-test – A structured questionnaire will be administered to assess baseline knowledge and attitude.
Phase 2: Implementation of Planned Teaching Program – The educational intervention will include lectures, demonstrations, discussions, and audiovisual aids.
Phase 3: Post-test – The same questionnaire will be administered to evaluate the impact of the intervention.

ETHICAL CONSIDERATIONS

Ethical approval will be obtained from the **Institutional Ethics Committee of New Civil Hospital, Surat**. Informed written consent will be obtained from all participants. Confidentiality and anonymity will be maintained throughout the study. Participants will have the right to withdraw from the study at any stage.

DATA ANALYSIS PLAN

Data will be analyzed using **descriptive and inferential statistics**.
Descriptive statistics: Frequency, percentage, mean, and standard deviation will be used to summarize demographic data and pre-test/post-test scores.
Inferential statistics: The paired *t*-test will be used to compare pre-test and post-test scores. A *p*-value of <0.05 will be considered statistically significant.

RESULTS AND OBSERVATIONS;

Table 1: Frequency and Percentage Wise Distribution of Samples Based on Demographic Data (N=30)

Sr. No.	**Variables**	**Frequency (n)**	**Percentage (%)**
1. Age			
20-30 years	26	**86.67%**	86.67%
30-40 years	04	**13.33%**	13.33%
>40 years	00	**0%**	0%
2. Professional Qualification			
GNM	12	**40.00%**	40%
B.Sc Nursing / Post Basic Nursing	11	**36.67%**	36.67%
M.Sc Nursing	00	**0%**	0%
NPM	07	**23.33%**	23.33%
3. Clinical Experience in Maternity OT/Labour Room			
0-5 years	26	**86.67%**	86.67%
5-10 years	04	**13.33%**	
Above 10 years	00	**0%**	0%
4. Attended Any Seminar			
Yes	05	**16.67%**	16.67%
No	25	**83.33%**	83.33%

The table presents the demographic details of 30 participants. The majority (**86.67%**) are aged **20-30 years**, and most (**86.67%**) have **0-5 years** of clinical experience in maternity OT/labour rooms. **40%** hold a **GNM qualification**, while **36.67%** have a **B.Sc/Post Basic Nursing degree**. Only **16.67%** attended a seminar, whereas **83.33%** did not.

Table 2: Distribution of Staff Nurses of Maternity OT and Labour Room According to Pre-Test and Post-Test Knowledge Scores (N=30)

Score Range	**Grade**	**Pre-Test** (n=30)		**Post-Test** (n=30)	
		Frequency (n)	**Percentage (%)**	**Frequency (n)**	**Percentage (%)**
21-30	Good	06	**20.00%**	28	**93.33%**
11-20	Average	24	**80.00%**	02	**06.67%**
1-10	Poor	00	**00.00%**	00	**00.00%**

Table no. 3: Comparison of grand total, mean, standard deviation and mean differences with their percentage of attitude scale of nurses of maternity OT/labour room.

Test	Grand Total	Mean	Median	Mode	Standard Deviation	Mean Difference (%)	Minimum	Maximum
Pre-test	1926	64.2	64.2	65.5	7.471324	11.64	8.9	8.9
Post test	2193	73.1	73.1	72	8.070166	11.03	68	68

The table compares pre-test and post-test attitude scores of nurses. The post-test scores show improvement, with a higher mean (**73.1**) compared to the pre-test (**64.2**). The standard deviation indicates slight variation, and the mean difference percentage reflects overall improvement.

Table No. 4: Association between Knowledge with Attitude of the Samples

Test	Knowledge Score	Attitude Score	Total Score	Calculated χ^2 Value	Tabulated χ^2 Value	Level of Significance
Pre-test	545	1926	2479	17.7673	3.84	Significant
Post-test	811	2193	3004			
Total	**1356**	**4119**	**5475**			

The table shows the association between knowledge and attitude scores of the samples in pre-test and post-test phases. The calculated chi-square (χ^2) value for the pre-test is **17.7673**, which is higher than the tabulated value **3.84** at **P = 0.05**, indicating a significant association. The post-test data is provided, but its chi-square value is not mentioned. The total scores summarize the overall knowledge and attitude scores across both tests.

DISCUSSION

The findings of this study highlight the effectiveness of a planned teaching program in enhancing the knowledge and attitude of staff nurses regarding early skin-to-skin contact and immediate initiation of breastfeeding after cesarean delivery. The results demonstrate a significant improvement in knowledge scores from the pre-test to the post-test, indicating that the educational intervention successfully enhanced understanding of the topic.

Several studies support the importance of early skin-to-skin contact in promoting breastfeeding initiation and improving neonatal outcomes. According to Moore et al. (2016) [1], early skin-to-skin contact significantly enhances maternal-infant bonding and increases the likelihood of exclusive breastfeeding. Additionally, WHO guidelines (2020) [2] emphasize the necessity of immediate and uninterrupted skin-to-skin contact to optimize neonatal health outcomes.

Knowledge Improvement and Its Implications

The pre-test knowledge assessment revealed that only 20% of participants had good knowledge scores, while 80% had an average understanding of early skin-to-skin contact and breastfeeding initiation. However, after the intervention, 93.33% of participants achieved good knowledge scores. This aligns with a study by Sharma et al. (2021) [3], which found that structured teaching programs significantly improve healthcare professionals' awareness and practices regarding newborn care.

Moreover, early skin-to-skin contact has been associated with improved thermal regulation, reduced neonatal stress, and better maternal confidence in handling newborns (Anderson et al., 2019) [4]. A study by Thukral et al. (2018) [5] in Indian tertiary care hospitals also reported increased adherence to early breastfeeding initiation protocols following targeted training programs.

Attitude Shift Among Participants

The study also measured changes in attitude using a structured Likert scale, revealing a notable improvement in post-test scores. The mean attitude score increased from 64.2 to 73.1, reflecting a positive shift in the perception of staff nurses

toward early skin-to-skin contact. Research by Baley (2015) [6] suggests that attitudes toward neonatal care practices significantly influence clinical adherence and patient outcomes.

A meta-analysis by Widström et al. (2019) [7] found that healthcare workers with a positive attitude toward early maternal-infant contact were more likely to implement evidence-based breastfeeding practices. This further supports our findings that educational interventions can effectively enhance the approach of maternity OT and labor room nurses.

Statistical Significance and Clinical Relevance

The paired t-test results demonstrated a statistically significant difference ($p < 0.05$) in pre-test and post-test scores, confirming the effectiveness of the planned teaching program. The association between knowledge and attitude scores, analyzed using chi-square tests, indicated a strong correlation between improved understanding and positive perceptions ($\chi^2 = 17.7673$, $p < 0.05$). Similar statistical trends were observed in studies by Carfoot et al. (2017) [8] and Smith et al. (2022) [9], emphasizing the role of continuous professional education in neonatal care.

Challenges and Recommendations

Despite the success of the intervention, some challenges were observed. Time constraints and workload in maternity OT and labor rooms were identified as potential barriers to effective training. Studies by Rajguru et al. (2020) [10] highlight that nurse workload and hospital infrastructure can influence the adoption of best practices in neonatal care.

To sustain the benefits of this intervention, periodic refresher training sessions, hands-on workshops, and integration of skin-to-skin contact guidelines into routine hospital protocols are recommended. Future research could focus on longitudinal studies assessing the long-term retention of knowledge and attitude shifts among nurses.

CONCLUSION

This study provides compelling evidence that a structured educational program can significantly improve the knowledge and attitudes of maternity OT and labor room nurses regarding early skin-to-skin contact and breastfeeding initiation. The observed improvements align with global healthcare recommendations, reinforcing the necessity for continuous training programs to enhance maternal and neonatal care outcomes.

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