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Research Article

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An experimental study to assess the usefulness of structured teaching program on knowledge regarding exclusive breast-feeding among post-natal mothers at Government Rajaji Hospital, Madurai.

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ABSTRACT

Background: Childbirth and breastfeeding are integral to the continuity of generations and the well-being of both mothers and infants. Despite its critical importance, many mothers lack sufficient knowledge about exclusive breastfeeding and its associated benefits. **Aim of the Study:** This study aimed to evaluate the effectiveness of the intervention in enhancing this knowledge. **Methodology:** A pre-experimental design was employed in this study, conducted at Government Rajaji Hospital, Madurai. Sixty postnatal mothers, aged 18 to 45 years, were selected using non-probability purposive sampling. **Results:** The study showed a significant improvement in knowledge regarding exclusive breastfeeding after the intervention. The mean knowledge score increased from 9.98 (pretest) to 19.87 (posttest), an increase of 39.52% ($P \leq 0.001$). Before the intervention, 86.7% of participants had inadequate knowledge, while after the intervention, all participants achieved adequate knowledge. **Conclusion:** The study concluded that the structured teaching program significantly improved the knowledge of postnatal mothers about exclusive breastfeeding. The intervention was effective across all sociodemographic groups, underscoring the importance of educational programs in supporting optimal breastfeeding practices.

Keywords: Breastfeeding, postnatal mothers, knowledge.

INTRODUCTION

The ability of women to bear children is a divine design that ensures the continuity of generations. Childbirth, while a natural and joyous event, carries risks for both the mother and the child. A woman's reproductive years span from menarche to menopause, typically between the ages of 13 and 45. Reproduction begins with conception—the joining of sperm and egg—usually occurring in the fallopian tube, although assisted reproduction like in vitro fertilization is also an option.

The Safe Motherhood Initiative, launched in 1987, aimed to reduce maternal mortality by 50% over ten years. The transition from pregnancy to motherhood brings significant physical and physiological changes for the mother. Breastfeeding is the most natural form of nourishment for infants, offering not just nutrition but also emotional and psychological benefits. Colostrum, the early milk, provides essential nutrients to the newborn and supports their brain and body growth.

For mothers, breastfeeding reduces risks of bleeding, cancer, and bone density loss, while promoting emotional bonding with the infant. It also has social and economic benefits, such as the ease of feeding and lower healthcare costs due to fewer illnesses. For infants, breast milk is nutritionally ideal, supporting their immune system and reducing risks of asthma, allergies, infections, and even sudden infant death syndrome (SIDS). Exclusive breastfeeding, free from additional food or drink, is crucial for optimal infant growth and development. It also improves nervous system development and intelligence.

The process of childbirth and breastfeeding is deeply tied to a woman's identity. The initiation of breastfeeding is seen as the fulfillment of motherhood, and it plays a vital role in both maternal and child health. Studies confirm that breastfeeding during the first months of life significantly impacts infant growth and development. As breast milk remains the most complete and irreplaceable form of nutrition for infants, it is important for both health care providers and society to support and encourage breastfeeding.

World Breastfeeding Week 2023, for example, emphasized the importance of peer counseling to sustain breastfeeding practices, ensuring that mothers receive the support they need to continue breastfeeding beyond the initial weeks. In summary, childbirth and breastfeeding are essential components of motherhood. These processes not only ensure the health and survival of the child but also bring numerous benefits to the mother, both physically and emotionally, highlighting the importance of supporting mothers in these vital roles.

NEED FOR THE STUDY

Globally, in 2012, the World Health Assembly aimed to increase exclusive breastfeeding rates by 2025. By 2022, neonatal deaths within the first 28 days reached 2.3 million, nearly half of all under-five deaths, mostly occurring in the first week due to causes such as milk aspiration, birth complications, infections, and difficulties related to bottle feeding. Despite reductions, neonatal mortality has declined slower than post-neonatal mortality since 1990, putting 64 countries at risk of missing the 2030 Sustainable Development Goal for neonatal survival without immediate intervention (WHO, 2000).

In Uttar Pradesh, 270,000 infants die in the first month, with many deaths attributed to formula milk-induced diarrheal diseases. In Jammu and Kashmir, formula milk feeding leads to the highest percentage of infant deaths due to infections like diarrhea, contributing to a significant proportion of preventable deaths (Times of India, 2012). A report by POSHAN in 2021 showed improvements in EBF practices in India, with a rise from 46.4% to 54.9% in the last decade, though some states showed a decline. Studies show that non-exclusive breastfeeding increases the risk of gastrointestinal infections and obesity in children (UNICEF). It has been estimated that exclusive breastfeeding could prevent 13.9% of infant deaths in Latin America due to its protective effects against diarrheal diseases and respiratory infections.

In India, nearly 40% of infants are not exclusively breastfed, which has been linked to higher healthcare costs and infant mortality (TN Data Entry Portal, 2021). In Government Rajaji Hospital, Madurai, over 14,000 deliveries occur annually, with approximately 1,100-1,200 deliveries each month. Given the importance of exclusive breastfeeding, raising awareness and educating healthcare providers about its benefits is critical. As such, this study aims to assess the knowledge regarding exclusive breastfeeding among postnatal mothers at Rajaji Hospital, Madurai, in an effort to improve maternal and child health through better breastfeeding practices.

MATERIALS AND METHODS

Study Design and Participants

This study follows a pre-experimental design. The study was conducted in Government Rajaji Hospital, Madurai. Sixty postnatal mothers were selected using a non-probability purposive sampling technique.

Inclusion Criteria

The study included postnatal mothers aged between 18 to 45 years, who were willing to participate, able to speak Tamil, and available during the time of data collection.

Exclusion Criteria

Mothers with psychiatric or neurological disorders, those who were hearing or visually impaired, or those with severe health issues were excluded from the study.

Tools

A self-structured, self-administered questionnaire was developed for data collection. The tool included socio-demographic details, clinical variables, and 30 multiple-choice questions assessing knowledge about exclusive breastfeeding. Knowledge levels were categorized as inadequate, moderately adequate, or adequate based on the scores.

Data Collection Procedure

Data collection spanned 4 to 6 weeks. Initially, participants' knowledge was evaluated using a structured questionnaire. This was followed by an intervention consisting of a structured teaching program on exclusive breastfeeding. After the intervention, the same questionnaire was administered again to assess changes in knowledge.

Data Analysis

Data were analyzed using descriptive statistics to summarize socio-demographic characteristics and knowledge scores. A paired t-test assessed the significance of pretest–posttest differences and associations with socio-demographic variables.

RESULTS

Socio-Demographic Variables

This table presents the socio-demographic characteristics of the post-natal mothers participating in the study. The majority of the mothers were aged between 20-25 years (61.6%) and lived in rural areas (71.7%). A significant portion of the mothers were school-educated (50%), and most had graduated (45%). Regarding family structure, 53.3% lived in joint families, while 46.7% had nuclear families. Most mothers were home makers (95%), while 83.3% of fathers were employed in miscellaneous jobs. Regarding family income, the majority (55%) earned between Rs.6294–18858, and 100% of the mothers followed a mixed diet. For sources of information, the majority (76.1%) relied on parents, followed by health workers (20%).

Table 2: Clinical Variables

This table describes the clinical variables of the post-natal mothers. Most mothers were primiparous (Para1) (60%), with a gestational period of 39-40 weeks (63.4%). In terms of NICU admission, 66.7% had no NICU admission, while others had varying levels of NICU care. Regarding breast issues, the majority (75%) had no breast problems, though 13.3% had other issues, and 1.7% had breast abscess and engorgement. Most mothers had a normal delivery (95%), with a small percentage undergoing forceps (1.7%) or vacuum delivery (3.3%).

Table 3: Level of Knowledge

This table illustrates the knowledge levels regarding exclusive breastfeeding in the pre-test and post-test.

In the pre-test, 91.7% of mothers had inadequate knowledge, and 8.3% had moderately adequate knowledge, while none of the mothers had adequate knowledge. After the intervention, in the post-test, 100% of the mothers achieved adequate knowledge.

Table 4: Comparison of Knowledge score

The paired t-test results showed a marked improvement in knowledge scores after the intervention. The pre-test mean was 10.55 (SD 3.25), rising to 29.13 (SD 1.08) in the post-test, with a mean difference of 18.58, t=47.83, and $p < 0.001$, demonstrating a statistically significant gain in knowledge about exclusive breastfeeding.

Table 1 Demographic variables of post natal mothers. (N=60)

S.No	Demographic Variables	Category	f	(%)
1.	Age	Less than 20 years	7	11.7
		20–25 years	37	61.6
		26–30 years	15	25
		More than 30 years	1	1.7
2.	Age at Marriage	Less than 20 years	27	45
		20–25 years	31	51.6
		26–30 years	1	1.7
		More than 30 years	1	1.7
3.	Education	Graduate	27	45
		Schooling	30	50
		Others	3	5
4.	Place of Residence	Urban	17	28.3
		Rural	43	71.7
5.	Family type	Joint family	32	53.3
		Nuclear family	28	46.7
6.	Mother's Occupation	Home maker	57	95
		Private employee	3	5
7.	Father's Occupation	Miscellaneous	50	83.3
		Private employee	10	16.7
8.	Monthly Family Income	< Rs.6293	1	1.7
		Rs.6294–18858	33	55
		Rs.18859-31435	7	11.6
		> Rs.31436-47034	19	31.7
9.	Diet Pattern	Mixed	60	100
10.	Source of Information	Parents	46	76.1
		Health workers	12	20

		Books	1	1.7
		Social media	1	1.7

Table 2: Clinical variables of post natal mothers. **N=60**

S.No	Clinical variables	Category	f	Percentage %
1.	**Parity**	$Para_1$	36	60
		$Para_2$	18	30
		$Para_3$	5	8.3
		>3	1	1.7
2.	**Period of Gestation**	<36 weeks	5	8.3
		36–38 weeks	15	25
		39–40 weeks	38	63.4
		>40 weeks	2	3.3
3.	**NICU Admission**	None	40	66.7
		Level I	8	13.3
		Level II	6	10
		Level III	6	10
4.	**Breast Problems**	None	45	75
		Others	8	13.3
		Inverted nipple	5	8.3
		Breast abscess	1	1.7
		Engorgement	1	1.7
5.	**Mode of Delivery**	Normal	57	95
		Forceps	1	1.7
		Vacuum	2	3.3

Table 3: Level of Knowledge among post natal mothers.

KNOWLEDGE LEVEL	PRE-TEST		POST-TEST	
	f	%	f	%
Inadequate	55	91.7	0	0
Moderately adequate	5	8.3	0	0
Adequate	0	0	60	100

Table 4: Comparison of mean score.

Measure	Pre-test	Post-Test	Mean Difference	"t" value	*P value*
Mean	10.55	29.13	18.58	47.83	0.000 (HS)
Standard Deviation	3.25	1.08	3.01		

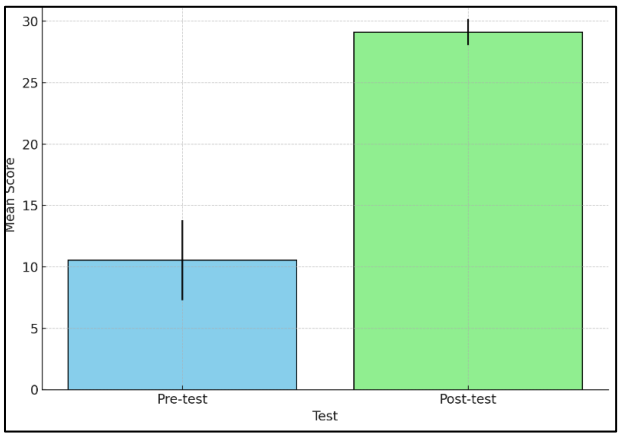

Figure 1: Pree-test and post-test score of knowledge mean score

DISCUSSION:

The study revealed that patients with Transient Ischemic Attack (TIA) initially possessed limited knowledge about preventing recurrent strokes. The overall pre-test knowledge score was 39.92%, with 86.7% of participants demonstrating inadequate knowledge, 13.3% showing a moderate level, and none achieving adequate understanding. After the implementation of the structured teaching program (STP) with the post-test score increasing by 39.52%. The mean knowledge score rose from 9.98 to 19.87, indicating a significant enhancement in awareness related to stroke prevention ($P \leq 0.001$). These results are consistent with findings from Krassen Nedeltchev's 2007 study, which reported similar gaps in knowledge on stroke prevention.

CONCLUSION:

The study highlights that the structured teaching program in enhancing maternal knowledge on exclusive breastfeeding, with all participants demonstrating adequate knowledge after the intervention. Sociodemographic and clinical factors did not significantly influence knowledge outcomes, indicating the

intervention's broad applicability across different groups. The statistical analysis confirmed a substantial increase in knowledge scores, further supporting the success of the intervention. These findings suggest that the educational program is universally effective, regardless of sociodemographic or clinical differences.

RECOMMENDATION:

Future studies should replicate this research with a larger sample and diverse baseline characteristics. Additionally, assessing knowledge, attitude, and practice regularly would enhance the effectiveness of the intervention.

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