

# “The Effectiveness of Informational Booklet on Knowledge & Attitude Towards Human Milk Bank Among Postnatal Mothers in Selected Hospital”

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## ABSTRACT

Human milk banks play an important role in providing safe and nutritious breast milk to infants who are unable to receive milk directly from their mothers, especially premature and sick newborns. Adequate knowledge and a positive attitude among postnatal mothers are essential for the acceptance and utilization of human milk banking services. **The present study was conducted to assess the effectiveness of an informational booklet on knowledge and attitude towards human milk banks among postnatal mothers in a selected hospital.**

**METHODOLOGY:** A quantitative research approach with a pre-experimental one-group pre- test–post-test design was adopted for the study. The study was conducted among 60 postnatal mothers selected through a non-probability convenient sampling technique from the postnatal ward of a selected hospital. The independent variable of the study was the informational booklet, and the dependent variables were the knowledge and attitude of postnatal mothers towards human milk banks. **Data were collected using a structured knowledge questionnaire and a Likert attitude scale.** **Results :** The findings of the study revealed that in the pre- test, 48.33% of postnatal mothers had poor knowledge and 35% had average knowledge regarding human milk banks. After the intervention, the post-test results showed significant improvement, with 63.33% of mothers demonstrating excellent knowledge and 36.67% showing good knowledge. The mean knowledge score increased from 6.87 to 15.87. Similarly, the attitude of mothers improved significantly from a pre-test mean score of 24.97 to a post- test mean score of 37.05, indicating a highly favourable attitude after receiving the informational booklet. **Statistical analysis using the paired t-test showed highly significant results ( $p < 0.0001$ ) for both knowledge and attitude.** **Conclusion:** The study concluded that the informational booklet was highly effective in improving the knowledge and attitude of postnatal mothers towards human milk banks. Educational interventions such as informational booklets can be an effective strategy to increase awareness and promote acceptance of human milk banking, ultimately contributing to improved neonatal health outcomes.

**Keywords:** Human Milk Bank, Postnatal Mothers, Knowledge, Attitude, Informational Booklet, Breast Milk Donation, Neonatal Care.

## INTRODUCTION

A human milk bank, breast milk bank or lactarium is a service that collects, screens, processes, pasteurizes, and dispenses by prescription human milk donated by nursing mothers who are not biologically related to the recipient infant. The optimum nutrition for newborn infants is breast milk for at least the first 6 months of life. For women who are unable to breast feed or produce enough milk, pasteurized donor breast milk may be an effective approach to feeding. Breast milk supplied by a woman other than the baby's mother that is not pasteurized and informal breast milk sharing is associated with a risk of transmitting bacteria and viruses from the donor mother to the baby and is not considered a safe alternative.

The primary and by far the largest group of consumers of human breast milk are premature babies. Infants with gastrointestinal disorders or metabolic disorders may also consume this form of milk as well.

The World Health Organization (WHO) recommends donor human milk for low- and very- low-birthweight infants, as well as small and sick newborns who cannot be fed their mother's own milk. Human milk banks organize the collection, processing and distribution of donor human milk, acting as a bridge between donors and recipients, and aiming to ensure the quality and safety of this biological product. These services should be integrated components of care for small and sick newborns and a core mechanism for supporting lactation and breastfeeding.

### **Need of the study**

Human milk banks are found in over 700 locations worldwide, with a higher concentration in Europe, North America, and parts of Latin America and Asia. However, the prevalence is lower in low- and middle-income countries, where the establishment of milk banks is still in progress. According to the World Health Organization (WHO), the establishment of milk banks is a crucial intervention to improve neonatal care globally. In the United States, about 30–40 human milk banks exist, many of which are connected to neonatal intensive care units (NICUs) to provide milk for preterm and sick infants.

India has seen a significant rise in the number of human milk banks, especially in large urban hospitals. By 2020, there were over 60 human milk banks in operation in India. This increase is attributed to rising awareness about the importance of human milk for infant health and support from organizations like the Indian Academy of Pediatrics.

Ambika (2022) conducted a study on Knowledge and Attitude Regarding Human Milk Banking among Postnatal Mother in Selected Hospitals of Himachal Pradesh. The major finding showed that the majority of 48(48%) having poor knowledge regarding human milk banking, 35(35%) postnatal mothers having average knowledge on human milk banking and 17(17%) of postnatal mothers having poor knowledge on human milk banking. majority of 40% postnatal mothers are showed unfavourable attitude. The analysis of the association between various demographic factors and knowledge about human milk banks showed that none of the factors had a statistically significant impact.

Therefore, the researcher felt the need to provide an informational booklet to improve knowledge and develop a positive attitude towards human milk bank among postnatal mothers. This will help in promoting its acceptance and utilization in clinical settings. The study also aims to enhance awareness and support better infant health outcomes through simple and cost-effective education.

## **MATERIALS AND METHODS**

A quantitative research approach with a pre-experimental one group pre-test and post-test research design was adopted, involving assessment before and after the intervention. The sample consisted of 60 postnatal mothers selected using a non-probability purposive sampling technique. Data were collected using a demographic data sheet, a self-structured questionnaire to assess knowledge, and a 3-point Likert scale to assess attitude towards human milk bank. The informational booklet was administered to the participants as an intervention, followed by post-test assessment.

Reliability of the tools was established using Karl Pearson's correlation coefficient, with values of 0.9250 for knowledge and 0.8194 for attitude, indicating high reliability. A pilot study was conducted on 10% of the sample, confirming the feasibility of the study and demonstrating the effectiveness of the informational booklet in improving knowledge and attitude among postnatal mothers.

## **RESULTS AND DISCUSSION**

### **Section-I**

This section deals with the demographic data of postnatal mothers. The data is presented in the form of frequency and percentage.

The demographic data indicate that most participants were aged 18–25 years [39 (65.0%)]. Majority had higher secondary education [31 (51.67%)]. Most participants were homemakers [42 (70.0%)] and primipara [39 (65.0%)]. A large proportion belonged to Hindu religion [29 (48.33%)] and had two children [28 (46.67%)].

Most participants had previous knowledge regarding human milk bank [52 (86.67%)], with video being the most common source of information [30 (50.0%)]. Majority belonged to rural areas [39 (65.0%)] and most had family income between 31,000–40,000 [28 (46.67%)]. Overall, the sample showed predominance of young, homemaker, rural postnatal mothers with prior awareness of human milk bank.

## Section II

This section deals with the assessment of knowledge and attitude towards human milk bank among postnatal mothers. Assessment was done using a self-structured knowledge questionnaire and a 3-point Likert scale for attitude.

**Table 1 - Assessment of Knowledge Regarding Human Milk Bank among Postnatal Mothers. N = 60**

| LEVEL OF KNOWLEDGE | PRE TEST |       |      |      | POST TEST |       |       |     |
|--------------------|----------|-------|------|------|-----------|-------|-------|-----|
|                    | F        | %     | Mean | SD   | F         | %     | Mean  | SD  |
| POOR (0 - 5)       | 29       | 48.33 | 6.87 | 2.85 | 0         | 0     | 15.87 | 1.7 |
| AVERAGE (6-10)     | 21       | 35    |      |      | 0         | 0     |       |     |
| GOOD (11-15)       | 10       | 16.67 |      |      | 22        | 36.67 |       |     |
| EXCELLENT (16-20)  | 0        | 0     |      |      | 38        | 63.33 |       |     |

Table 1 depicts the assessment of knowledge regarding human milk bank among postnatal mothers, showing improvement in knowledge after the intervention. In the pre-test, most participants 29 (48.33%) had poor knowledge, 21 (35.0%) had average knowledge, and 10 (16.67%) had good knowledge, with none in the excellent category. In the post-test, no participants remained in poor or average categories, while 22 (36.67%) had good knowledge and the majority 38 (63.33%) achieved excellent knowledge. Overall, these findings indicate that the informational booklet was effective in improving the knowledge of postnatal mothers regarding human milk bank.

**Table 2 - Assessment of Attitude Regarding Human Milk Bank among Postnatal Mothers. n = 60**

| LEVEL OF ATTITUDE      | PRE TEST |       |       |      | POST TEST |       |       |      |
|------------------------|----------|-------|-------|------|-----------|-------|-------|------|
|                        | F        | %     | Mean  | SD   | F         | %     | Mean  | SD   |
| STRONGLY AGREE (36-45) | 0        | 0     | 24.97 | 3.11 | 38        | 63.33 | 37.05 | 3.06 |
| AGREE (26-35)          | 19       | 31.67 |       |      | 22        | 36.67 |       |      |
| DISAGREE (15-25)       | 41       | 68.33 |       |      | 0         | 0     |       |      |

Table 2 depicts the assessment of attitude regarding human milk bank among postnatal mothers, showing improvement in attitude after the intervention. In the pre-test, most participants 41 (68.33%) had a negative attitude (disagree) and 19 (31.67%) had a moderately positive attitude (agree), with none in the strongly agree category. In the post-test, none of the participants remained in the disagree category, while 22 (36.67%) showed agree and the majority 38 (63.33%) showed strongly agree attitude. Overall, these findings indicate that the informational booklet was effective in improving the attitude of postnatal mothers towards human milk bank.

## Section III

This section deals with the effectiveness of Informational booklet on knowledge and attitude towards human milk bank among postnatal mothers. It consists of two parts-

**Table No.3 - Effectiveness of Informational booklet on knowledge towards human milk bank among postnatal mothers. n = 60**

| EFFECTIVENESS OF INFORMATION BOOKLET ON KNOWLEDGE | Mean | SD   | DF | T test calculated value | P Value | Remark |
|---------------------------------------------------|------|------|----|-------------------------|---------|--------|
| Pre test                                          | 6.87 | 2.85 | 59 | 22.19                   | <.0001  | S      |
| Post test                                         | 15.9 | 1.73 | 59 |                         |         |        |

Table No. 3 shows the effectiveness of the informational booklet on knowledge regarding human milk bank among postnatal mothers by comparing pre-test and post-test scores. The mean knowledge score increased from 6.87 in the pre-test to 15.9 in the post-test, with standard deviations of 2.85 and 1.73 respectively. The calculated t-test value was 22.19 with 59 degrees of freedom, and the p-value was <0.0001, indicating a statistically significant difference. Overall, these findings indicate that the informational booklet was highly effective in improving the knowledge of postnatal mothers regarding human milk bank.

**Table No. 4 - Effectiveness of Informational booklet on Attitude towards human milk bank among postnatal mothers. n =60**

| EFFECTIVENESS OF INFORMATION BOOKLET ON ATTITUDE | Mean  | SD   | DF | T test calculated value | P value | Remark |
|--------------------------------------------------|-------|------|----|-------------------------|---------|--------|
| Pre test                                         | 24.97 | 3.11 | 59 | 24.01                   | <.0001  | S      |
| Post test                                        | 37.1  | 3.06 | 59 |                         |         |        |

Table No. 4 shows the effectiveness of the informational booklet on attitude towards human milk bank among postnatal mothers by comparing pre-test and post-test scores. The mean attitude score increased from 24.97 in the pre-test to 37.1 in the post-test, with standard deviations of 3.11 and 3.06 respectively. The calculated t-test value was 24.01 with 59 degrees of freedom, and the p-value was <0.0001, indicating a statistically significant difference. Overall, these findings indicate that the informational booklet was highly effective in improving the attitude of postnatal mothers towards human milk bank.

## Section IV

This section deals with the Finding Related to correlate the knowledge with attitude towards human milk bank among postnatal mothers.

**Table No.5 - Correlate the knowledge with attitude towards human milk bank among postnatal mothers. n = 60**

| EFFECTIVENESS OF INFORMATION BOOKLET ON KNOWLEDGE AND ATTITUDE | Mean | SD   | DF | R test calculated value | PValue | Remark |
|----------------------------------------------------------------|------|------|----|-------------------------|--------|--------|
| Pre test Knowledge                                             | 6.87 | 2.85 | 59 | 0.9250                  | 0.33   | NS     |
| Pre test Attitude                                              | 25.0 | 3.11 | 59 | 0.8194                  |        |        |

Table no.5 analyzes the correlation between knowledge and attitude scores using Karl Pearson's correlation coefficient. The findings showed that the mean knowledge score was 6.87 and mean attitude score was 25.0 in the pre-test, with standard deviations of 2.85 and 3.11 respectively. The calculated r-values were 0.9250 for knowledge and 0.8194 for attitude, with a p-value of 0.33, which is greater than 0.05 and hence not statistically significant. Thus, there was no significant correlation between knowledge and attitude towards human milk bank among postnatal mothers.

## **Section V**

This section deals with analysis and interpretation of data in order to find out association of knowledge and attitude towards human milk bank with selected demographic variables using chi-square test. For knowledge scores, variables such as age, education, occupation, parity, religion, number of children, previous knowledge, source of information, living area, and family income showed no statistically significant association ( $p > 0.05$ ). Similarly, for attitude scores, none of the demographic variables showed a statistically significant association ( $p > 0.05$ ). Thus, no selected demographic variable significantly influences knowledge and attitude towards human milk bank among postnatal mothers.

## **DISCUSSION**

The present study on the effectiveness of an informational booklet among postnatal mothers can be compared with Roshani & Mahadalkar's (2020) study on knowledge and attitude regarding human milk donation. Both studies revealed poor to average baseline knowledge and mixed attitudes among mothers, with mean knowledge scores of 6.87 (SD 2.85) and 8.89 (SD 3.06), and mean attitude scores of 24.97 (SD 3.11) and 28.56 (SD 9.62) respectively.

While Roshani & Mahadalkar's descriptive study showed no improvement in knowledge or attitude, the present study demonstrated that an informational booklet significantly enhanced both knowledge (post-test mean 15.9) and attitude (post-test mean 37.1), proving the effectiveness of structured interventions. Both studies also found no significant association with socio-demographic variables, indicating that lack of awareness is widespread. This suggests that continuous health education is essential to improve acceptance of human milk donation.

Both the present study and Ambika Chauhan's (2022) study found that postnatal mothers had poor to average knowledge and largely unfavorable attitudes towards human milk banking. In Chauhan's study, 48% of mothers had poor knowledge and 40% showed unfavorable attitudes, while in the present study, the pre-test means knowledge (6.87, SD 2.85) and attitude (24.97, SD 3.11) scores also reflected low awareness.

The major difference is that Chauhan's study was descriptive with no intervention, whereas the present study introduced an informational booklet, which significantly improved both knowledge (15.9, SD 1.73) and attitude (37.1, SD 3.06) with statistical significance ( $p < 0.0001$ ). Additionally, Chauhan reported associations of knowledge with age and religion, and attitude with education, while the present study found no significant association with socio-demographic variables. Thus, both studies confirm low baseline awareness, but the present study highlights the effectiveness of structured teaching in improving knowledge and attitude.

## **Implications Of Study**

### **Nursing Education**

Nursing educators can incorporate informational booklets into teaching plans for maternal and child health nursing. Students can be encouraged to create and use similar educational aids during clinical postings, which helps develop their skills in health teaching, communication, and counseling. This practical experience builds confidence in addressing sensitive issues related to breastfeeding and milk donation.

## Nursing Administration

Nursing administrators can play a vital role by integrating human milk bank education into routine postnatal care protocols. Informational booklets can be made widely available in postnatal wards, neonatal intensive care units (NICU), and outpatient departments, ensuring accessibility for all mothers.

## Nursing Service

Nurses play a pivotal role in educating postnatal mothers about human milk banks. Using informational booklets during hospital stays and follow-up visits, they can clarify doubts and misconceptions regarding the safety, collection, storage, and usage of donor human milk.

## Nursing Research

This study highlights opportunities for future research in nursing, such as evaluating the comparative effectiveness of different teaching methods, including booklets, videos, digital media, and counseling sessions.

## CONCLUSION

The present study concludes that the informational booklet was highly effective in improving the knowledge and attitude towards human milk bank among postnatal mothers. The findings revealed a statistically significant improvement in knowledge scores from pre-test (mean 6.87) to post-test (mean 15.9) and in attitude scores from pre-test (mean 24.97) to post-test (mean 37.1) at  $p < 0.0001$ .

The study also found that there was no significant association between knowledge and attitude with selected socio-demographic variables, indicating that awareness regarding human milk bank is uniformly low across different groups.

Thus, the study emphasizes that structured educational interventions such as informational booklets are effective, simple, and cost-efficient methods to enhance awareness and promote positive attitudes towards human milk banking, ultimately contributing to improved neonatal health outcomes.

## Declaration By Authors

**Ethical Approval:** The study was approved by the institutional ethics committee of St. Andrews College of Nursing, Pune. The study participants were briefed about the purpose and nature of the study and written informed consent was obtained before data collection.

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**Conflict of Interest:** The authors declare no conflict of interest.

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