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ORIGINAL RESEARCH ARTICLE

A PRE-EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF A STRUCTURED TEACHING PROGRAM FOR THE IMPROVEMENT OF KNOWLEDGE REGARDING HUMAN MILK BANKING AMONG NURSING STUDENTS AT JANAKPURDHAM, NEPAL

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ABSTRACT

Background: Human milk bank or breast milk bank is a service which collects, screens, processes and dispenses by prescription human milk donated by nursing mothers who are not biologically related to the recipient infant. Human milk is equally beneficial for all newborn babies. Nurses are one to be in direct touch with nursing mother in hospital and community. Therefore, this study aimed to assess the knowledge regarding human milk banking among nurses.

Methods: A pre-experimental one group pre-test posttest study was adopted for the study. Convenient sampling techniques were used for sampling technique. Obtained data were analyzed using SPSS version 24 for windows to obtain the descriptive statistics such as frequency, percentage, mean and standard deviation.

Results: The findings revealed that the overall mean pre-test Knowledge score was 11.50 their Standard deviation was 3.83 and the overall post-test knowledge score was 22.62 its standard deviation was 4.19 respectively. The mean post-test knowledge score of nursing students who were exposed to structured teaching programme are significantly higher, than the mean pretest knowledge scores.

Conclusions: The study concluded that the structured teaching Program was an effective teaching strategy, to enhance knowledge of nursing students regarding human milk banking. In addition, nurses play a vital role in raising public awareness regarding the establishment of breast milk banks. It will aid in enhancing neonatal health and helps in lowering infant mortality rate.

INTRODUCTION

Human milk bank or breast milk bank is a service which collects, screens, processes and dispenses by prescription human milk donated by nursing mothers who are not biologically related to the recipient infant.[1] The World Health Organization and the American Academy of Pediatrics recommended the use of donated breast milk as the first alternative when maternal milk is not available.[2]

Nepal's first Human Milk Bank (Amrit kosh) has been established in Kathmandu, with President Bidya Devi Bhandari inaugurating it at the Paropakar Maternity and Women's Hospital.[3] The establishment of a human breast milk bank is crucial to realizing Nepal's Commitment to sustainable Development Goals 2030 by ending preventable deaths of newborns and children under 5years of age.[4]

Every year, around 15 million babies are born preterm around the globe and that number is particularly high in low and middle-income countries like Nepal.[5] Human milk is equally beneficial for all newborn babies, importantly for very low birth weight and extremely low birth weight babies and improve neuro-cognitive development. Human milk fed Very Low Birth weight infants have lesser incidence of infection and sepsis/ meningitis.[6] Feeding formula milk can often lead to a high risk of developing an infection (sepsis) as well as necrotizing enterocolitis, a serious disease that affects the intestines of premature infants.[7]

Nurses are one to be in direct touch with postnatal mothers in maternity, pediatric, NICU PICU and others wards. Poonam kumara et al concluded that there should be need of in service, workshop and seminars to enhance the knowledge of nurses regarding human milk banking.[8] Aparna P conducted study on effectiveness of structured teaching programme on knowledge regarding human milk banking found that posttest knowledge had adequate after structured teaching program.[9] Similarly Ray et al conducted study on nurses in Kathmandu concluded that there should be provision of in service training and symposium at regular interval to keep update knowledge regarding human milk banking.[6]

Nursing is the foundation of the health care delivery system. Final year nursing students are the future staff nurses who can take up this topic seriously and teach mothers.[9] As a vital component of the health care delivery system, he /she must teach mothers on breastfeeding's significance, advantages, storage, donation etc[10]. The nurses working in the obstetric, gynecological and maternity ward must understand how to store breast milk and about banking[11]. The present study was aimed to assess the knowledge regarding human milk banking among nurses.

METHODS

A pre-experimental one group pre-test posttest study was adopted for the study. Study was carried out in the nursing college of Janakpurdham, Nepal. Three nursing colleges were adopted for this study namely Care Medical Center Pvt.Ltd , National Human Resource Development Academy Pvt.Ltd and Mithila Technical Academy of Janakpurdham, Nepal. All the nursing students who were studying in PCL third year in selected nursing colleges involved in the study. Convenient sampling technique was used for the sample. Total 106 PCL third year nursing students were involved in the study.

Prior to data collection, National Health Research Council (NHRC) approval (ref no 84) was obtained. Permission was obtained from three nursing colleges which are enrolled in the study. The questionnaire was valid and reliable to measure the knowledge regarding human milk banking. The written informed consent was obtained from participants before collecting the data. The investigator gave self-introduction, explained the purpose of the study and the subject's willingness to participate in the study was ascertained. The subjects were assured about confidentiality of the information provided by them and written consent was obtained. The researcher herself was provided intervention and following steps were followed: Pretest: firstly, the investigator administered the questionnaire to the PCL third year students who were met the inclusion criteria. The questionnaire consists of 30 questions and 30 minutes duration was given to complete the questionnaire. Second step, Structured teaching program: then in the second step the investigator conducted the structured teaching session with the help of lesson plan and different media and methods on the same day of Pre-test. Structured teaching sessions were conducted by the investigator herself. This session lasted for 45 to 60 minutes for the same participants. Third step, Posttest: lastly Posttest was conducted one week later of a structured teaching session by the using of the same questionnaire and same participants as in the pretest for 30 minutes.

After data collection data were checked for its completeness and stored properly for further analysis. Serial numbers were given to each form. For confidentiality obtained information was used only for the research purpose and was not disclosed with anyone who is not related to this research. To maintain uniformity the data collection tool were printed in the hard copy and each time during data collection same tool was used to gather the required information

Finally, the collected data was entered in a Microsoft Excel sheet and analysis was performed using SPSS version 24. For descriptive statistics frequency, percentage, standard deviation was calculated and presented in tables.

RESULTS

Table 1 represents the baseline demographic variables of the nursing students. The most 75(75%) of the subjects were between the age group of 18-21 years. Among the nursing students the majority of the subjects 106(100%) were female. Distribution of nursing students according to the place of residence shows that 66(66.3%) of nursing students belongs to urban area. Among nursing students according to the source of information shows that 12(11.3%) were mass media,17(16%) from parents, 3(2.8) neighbors and friend and 74(69.8) from health professional.

Table 1: Frequency and percentage distribution of the nursing students according to demographic variables (n=106)

Variables	n (%)
Age in years	
18-21	75(75%
22-25	31(31%)
Mean age =20 year	
Gender	
Female	106(100%)
Area of Residence	
Rural	66(62.3%)
Urban	40(37.7%)
Source of information	
Mass media	12(11.3%)
Parents and relative	17(16.0%)
Neighbours and friends	3(2.8%)
Health professional	74(69.8%)

Table 2 illustrates that the pretest mean score was 11.50 and their Standard deviation was 3.83. Similarly, after the structured teaching programme the mean score of the posttest was 22.62 and its standard deviation was 4.19.

Table 2: Analysis of effectiveness of structured teaching programme for nursing students regarding human milk banking

Knowledge score	Mean	SD
Pretest	11.50	3.83
Post test	22.62	4.19

DISCUSSION

The study evaluated the effectiveness of structured teaching programmes on knowledge regarding human milk banking among PCL third year nursing students in Janakpurdham, Nepal. The study showed that the most of the nursing students 75(75%) were between age group of

18-21 years. Among the nursing students the majority of the subjects 106(100%) were female. The findings of the study were similar to Kumaran et al where the majority of the nursing students were among 20 -21-year-old and the most of nursing students 96.8% were femal.[9] Similarly, study conducted by Kumari P also showed that 88% of nurses were female only.[8] The study showed that nursing students 66(66.3%) nursing students belonged to urban area.

The present study showed most of the nursing students 40(37.7%) had from urban areas. Similarly, study conducted by Joshi V showed 66% of the nursing students were from urban community.[12]

The study revealed that in pretest majority of nursing students 86(81.1%) were having inadequate knowledge. Some of them 14(13.2%) had moderate knowledge and 6(5.7) had adequate knowledge regarding human milk banking. After the structured teaching programme majority of nursing students 67(63.2%) were had moderate knowledge ,34 (32.1%) had adequate knowledge and 5(4.7%) had inadequate knowledge regarding human milk banking. The finding of the study is similar to the finding Aparna P et al, where pretest majority of the subjects 52(86.70%) were having inadequate knowledge followed by 7(11.70%) were having moderate knowledge and 1(1.70%) were having adequate knowledge. After structured teaching program, in post–test majority of the subjects 52(86.70%) were having adequate knowledge and only 18(13%) were having moderate knowledge.[1]

Similarly, study conducted by Rani S et al[13] after structured teaching programme, 89.29% of students had good knowledge and 10.72% have average knowledge regarding human milk banking. Similarly the finding is also similar to Kumaran et al which revealed that 21% (13) of the final year Nursing Students had inadequate knowledge, 44% (28) had moderately adequate knowledge and only 35% (22) had adequate knowledge about human milk banking.[9] Similarly the study conducted by Bhat A showed that 33.3% of students have excellent knowledge, 64.4% possessed average knowledge, and 3.4% possessed weak knowledge.[14] Another study conducted by Kamar et al revealed the knowledge of human milk banking among nursing students at Moradabad, India and found that 2% of pupils have excellent knowledge, 54% possessed moderate knowledge, and 44% possessed inadequate knowledge.[15] Contradictory the present study showed that 93.3% of nurses had adequate knowledge while 13.3% had inadequate knowledge regarding human milk and milk banking.[6]

This study found that the pretest mean score was 11.50 and their Standard deviation was 3.83. After the structured teaching program, the mean score of posttests was 22.62 and its standard deviation was 4.19. This finding was similar to the finding of Rani et al[13] where Pretest mean score was 16.8 and pretest Standard deviation was 3.5061. After structured posttest mean score was 25.857 and posttest Standard deviation was 2.8999. Similarly, the finding of the study is similar to Joshi et al where pre-test mean knowledge score of the nursing students was 11.9(35%) and post-test knowledge mean was 27.5(80.88%).[12]However, the finding of this study contrasts with the findings of study conducted by Kamala et al, where the Pretest mean score was 57.94 and Standard deviation was 7.64 and after structured teaching programme the Post test score was 143.68 and standard deviation was 17.93 respectively.[16]

The findings of the study will help the nursing students to update their knowledge regarding human milk banking which will help to impart the knowledge to the mothers and also prevent the newborn from morbidity and mortality[17]. This will also help to plan for regular workshop and seminars to enrich the knowledge regarding human milk and milk banking[18]. The findings of this study might be used as a reference point for further research in future.

The study also has limitation. The first limitation is the small sample size. The study is limited to PCL nursing students of selected hospital. Setting of the study was chosen due to the research feasibility.

CONCLUSION

The post-test knowledge score was higher than the pretest knowledge score regarding human milk banking among nursing students. The study concluded that the structured teaching Program was an effective teaching strategy, to enhance knowledge of nursing students regarding human milk banking. In addition, nurses play a vital role in raising public awareness regarding the establishment of breast milk banks. It will aid in enhancing neonatal health and helps in lowering infant mortality rate. Consequently, this study tackles the need to improve the human milk banking knowledge among the nursing students. Regular workshops and seminars should be held to expand awareness of human milk and milk banking. The hospital should have clear processes and standards for milk banking. Such research will pave the way for the establishment of a human milk bank that will benefit infants in need. Hospitals should have standard guidelines and protocols on milk banking.

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CONFLICT OF INTEREST: None

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