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Original Research Article

Effectiveness of structured teaching program on knowledge regarding impact of bottle feeding among mothers of 6 months to 2 years children at Vivekananda polyclinic and institute of medical sciences, Lucknow

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ABSTRACT

Background: Breastfeeding is the key to a child's survival, health, growth and development. WHO has stipulated that the feeding bottle with a nipple should not be used at any age, in order to achieve optimal growth, development and health of infants. Despite this, bottle feeding to infants is still practiced across our country due to various socio-cultural reasons. And it was seen that in bottle-fed children, the frequency of diarrhoea was 26.08%
Methods: Quasi-experimental one group pre-test post-test research design was adopted and 60 mothers of children (between 6 months to 2 years of age) whose children were admitted in paediatric ward were selected as samples of the study. Self-structured questionnaire was used to assess the pretest and post-test knowledge.
Results: In Pre-test, 93.3% of the samples had average knowledge and 6.7% of the samples had good knowledge, while in the post-test 16.7% had average knowledge and 83.3% of the samples had good knowledge. The t-statistic for this test was 12.061, with 59 degrees of freedom. Therefore, the results are statistically significant, demonstrating that the educational intervention had a significant positive impact on the mothers of 6 months to 2 years' children' knowledge of the Impact of bottle feeding.
Conclusions: It was concluded that structured teaching program was highly effective in improving the knowledge level of the mothers regarding bottle feeding and it should be regularly put into practice in health care settings.

Keywords: Bottle feeding, Knowledge, Structured teaching program

INTRODUCTION

"Children, the budding flowers of our society, deserve gentle care and nurturing, as they will blossom into the responsible citizens who shape our nation's future.". According to the World Health Organization (WHO), breastfeeding plays a vital role in ensuring a child's survival, growth, health and overall development.[1] WHO emphasizes that feeding bottles with nipples should be avoided at all ages to promote optimal infant growth and wellbeing. Nevertheless, the practice of bottle feeding continues to be prevalent in many parts of the country, influenced by diverse socio-cultural factors. Among bottle-fed infants, the incidence of diarrhoea has been reported to be 26.08%.[2] Over the past few decades, developing countries have witnessed a rise in the use of feeding bottles with nipples for infants. This practice has been found to negatively affect breastfeeding and is associated with increased risks of child morbidity and mortality.[3]

Factors contributing to these risks include loss of immunological benefits, contamination of breast milk substitutes and inadequate nutritional content.[4] It is estimated that optimal breastfeeding for all children aged 0–23 months could prevent more than 820,000 deaths annually among those under five years of age. Breastfeeding has been shown to enhance intelligence, improve school performance and contribute to higher earnings in adulthood.[5] Globally, in 2022, approximately

149 million children under five were classified as stunted (low height for age), 45 million as wasted (low weight for height) and 37 million as overweight or obese.[6] Promoting breastfeeding contributes significantly to improved child development and reduced healthcare expenses, leading to economic benefits for families and the nation as a whole. Despite these advantages, there has been a noticeable decline in both the prevalence and duration of breastfeeding over recent decades.[7] According to Lawrence et al spokesperson for the American Academy of Pediatrics, infant mortality rates are lower and infection rates fewer among breastfed babies compared to those who are formula-fed.[8] It is estimated that 3,000-4,000 infants die each day from diarrhoea and acute respiratory infections due to inadequate breastfeeding.[9] The World Health Organization (WHO) and UNICEF recommend exclusive breastfeeding for the first six months of life, followed by continued breastfeeding along with complementary feeding up to two years of age or beyond.[10]

The present research study was conducted with the main objective to assess the pre-test knowledge scores regarding impact of bottle feeding among mothers of 6 months to 2 years of children and also to evaluate the effectiveness of structured teaching program on impact of bottle feeding and even to associate the pre-test knowledge scores of mothers with their selected demographic variables.

METHODS

In this present research study, quantitative research approach with a quasi-experimental one group pre-test post-test research design was used to full-fill the objectives of the study. The study was carried out in paediatric ward of Vivekananda Polyclinic and Institute of Medical Sciences, Lucknow with a total of 60 samples in the month of April 2023-June 2023. Mothers (of 6 months to 2 years children) whose children were admitted at paediatric ward were selected as samples using purposive sampling technique. Sample size was selected using the formula:

Sample size = Z2×p(1-p)/e2

Where, Z=Z score P=Standard deviation e=margin of error N=population size

Inclusion criteria

Mothers of children (aged between 6 months to 2 years) whose children were admitted in pediatric ward and were willing to participate in the study were included in the study.

Exclusion criteria

Mothers of children above 2 years of age were excluded from the study.

Data collection instrument

The data was collected was collected after taking ethical clearance from the institute. After a thorough review of literature and validation by the subject experts the tool for data collection was divided into two sections: socio-demographic variables (which included items such as age, religion, type of family, area of residence, educational status of the mother, occupational status of the mother, family income per month, sources of information they got, method of cleaning bottle and self-structured questionnaire to assess knowledge regarding bottle feeding.

Data collection procedure

Before collection of the data, informed consent was obtained from the participants. On day 1 of the data collection, pre-test knowledge was assessed through Self Structured knowledge questionnaire thereafter Structured teaching Programme was administered in their regional language to the samples by using effective A.V aids. On the 3rd day, the post-test knowledge was assessed using the same Self Structured knowledge questionnaire.

Data analysis

The data will be analysed by Descriptive and Inferential statistic on the basis of objectives and hypothesis of the study. Further, chi-square test was used to compute the association between pretest knowledge score and the demographic variable while t-test was used to compute the effectiveness of structured teaching programme.

RESULTS

Demographic characteristics

The sample characteristics were described in terms of Age of mother, Education status of mother, occupational status of Mother, Family income per month, Type of family, Area of residence, number of children, previous knowledge. Table 1 depicts the frequency percentage distribution of the samples according to their demographic characteristics.

Knowledge score

In Pre-test, 93.3% of the samples had average knowledge and 6.7% of the samples had good knowledge, while in the post-test 16.7% had average knowledge and 83.3% of the samples had good knowledge.

Table 2 depicts the findings related to assessment of pre-test knowledge regarding Impact of bottle feeding among mothers of 6 months to 2 years' children. Table 3 depicts the depicts the findings related to the post test knowledge regarding Impact of bottle feeding among mothers of 6 months to 2 years' children.

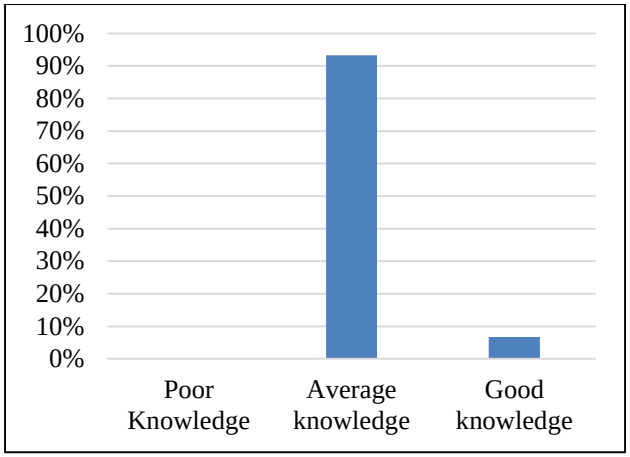

Figure 1: Graph depicting pre-test knowledge score.

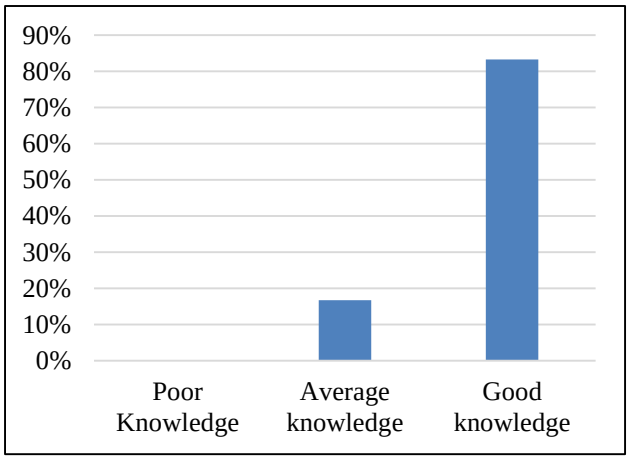

Figure 2: Graph depicting post-test knowledge score.

The t-test was applied to test for the effectiveness of the structured teaching programme on the level of knowledge, which is clearly depicted through table 4. The 95% confidence interval for the difference ranged from 5.074 to 12.061, The t-statistic for this test was 12.061, with 59 degrees of freedom.

This high t-value indicates a significant difference between pre-test and post-test knowledge scores. The p-value associated with this t-test was 0.001, which is less than the conventional alpha level of 0.05. Therefore, the results are statistically significant, demonstrating that the educational intervention had a significant positive impact on the mothers of 6 months to 2 years' children' knowledge of the Impact of bottle feeding.

Association of pre-test knowledge score and demographic variables

A chi-square test was conducted to explore the association between the pre-test knowledge levels regarding the impact of bottle feeding among mothers with children aged 6 months to 2 years' and selected demographic variables.

The finding of the chi-square test results (at p value significant at 0.05 level of significance) indicates that there was no statistically significant association between pre-test knowledge levels regarding the impact of bottle feeding and the selected demographic variables, including age, educational status of mothers, occupational status of mothers, family income, type of family, area of residence, number of children and prior knowledge of bottle feeding.

Table 1: Frequency and percentage distribution of the socio-demographic variable.

S. no.	Socio-demographic variables		Frequency	%
1	Age (in years)	21-25	12	20.0
		26-30	21	35.0
		31-35	18	30.0
		Above 35	9	15.0
2	Education	Primary education	6	10
		High school education	26	43.3
		Higher secondary education	15	25
		Degree and above	13	21.7
3	Occupation	Private employee	8	13.3
		Government employee	4	6.7
		Self-business	9	15.0
		Housewife/homemaker	39	65.0
4	Family income per month	<10000	4	6.7
		10001-15000	21	35.0
		15001-20000	24	40.0
		Above 20000	11	18.3
5	Type of family	Nuclear family	27	45.0
		Joint family	33	55.0
		Single parent	0	0.0
6	Residential area	Rural	8	13.3

Continued.

S. no.	Socio-demographic variables		Frequency	%
		Urban	52	86.7
7	No. of child	1	23	38.3
		2	28	46.7
		3	8	13.3
		More than 3	1	1.7
8	Previous knowledge	Yes	29	48.3
		No	31	51.7
9	If yes source of knowledge	Family members and relatives	11	37.9
		Newspaper and social media	5	17.2
		Health Professional	11	37.9
		Friends	2	6.9

Table 2: Pre-test level of knowledge regarding bottle feeding (n=60).

Level of pre-test knowledge	Frequency	%
Poor knowledge	0	0
Average knowledge	56	93.3
Good knowledge	4	6.7

Table 3: Post-test level of knowledge regarding bottle feeding (n=60).

Level of pre-test knowledge	Frequency	%
Poor knowledge	0	0
Average knowledge	10	16.7
Good knowledge	50	83.3

Table 4: Depicts the comparative data showing the effectiveness of structured teaching programme.

Category	Mean	SD	Mean difference	SE	95% CI		Tabulated t value	df	Sig.(2-tailed)
					Lower	Upper			
Pre-test	17.133	2.339	6.083	0.504	7.092	5.074	12.061	59	0.001
Post-test	23.21	2.90							

DISCUSSION

Recognizing the importance of early childhood nutrition, particularly in the context of bottle feeding, is crucial for promoting optimal child health. The lack of comprehensive awareness among mothers in this specific age group poses potential risks to child development. Consequently, there is a pressing need for interventions to address this knowledge gap and empower mothers with accurate information on the consequences of bottle feeding during this critical developmental stage.

The hypothesis (H1) states that the post-test knowledge score will be significantly higher than the pre-test knowledge score. This hypothesis anticipates a positive impact resulting from the structured teaching program, leading to an increase in knowledge among the participating mothers. Jaiswal et al conducted a study to assess the impact of STP on knowledge regarding common bottle-feeding problems in infants among mothers.[11] The most significant finding was that 25.0% of Mothers were having average knowledge regarding common bottle-feeding problems whereas 75.0% had good knowledge after post-test. It was suggested that nurses must educate mothers regarding common bottle-feeding problems

Shemsi et al conducted a study on the utilization of bottle-feeding practices and associated factors among mothers who have infants less than 12 months of age.[12] The study revealed that prevalence of bottle feeding was 207 (93.2%) and mothers returning to work was the main reason for the initiation of bottle feeding. There was a significant association between the bottle-feeding practices and mother educational status, occupational statis, place of delivery and family monthly income.

A study conducted by Telang et al to identify the influencing factors for the use of bottle feeding among the mothers of under five children.[13] Total of 38 factors were identified which were related to mother and children as well which influenced the use of bottle feeding The current research study was conducted in Vivekananda Polyclinic hence making the generalizability of results limited. Some other limitations of the study were the study's duration and scope which may limit the depth of

insights into long- term knowledge retention. External factors such as socio-economic changes during the study might also influence participants' responses.

CONCLUSION

The study revealed that a significant increase in post-test knowledge scores, indicates the positive impact of the educational intervention. The majority of participants achieved a "Good Knowledge" level post-intervention, highlighting the success of the structured teaching program. Thus, suggesting the implications for nursing education, services and practice, emphasizing the role of healthcare professionals, particularly nurses, in promoting informed child care practices. The results contribute valuable insights to nursing research, advocating for the integration of structured teaching programs in healthcare settings to enhance maternal and child health outcomes. Overall, the study supports the importance of targeted educational interventions in empowering mothers with the knowledge needed for optimal child feeding practices.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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