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Evaluating the Impact of a Structured Teaching Program on Caregivers' Awareness of the Adverse Effects of Bottle Feeding in a Chosen Community Area: A Quasi-Experimental Study in Shri Goindwal Sahib, Tarn-Taran, Punjab

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Abstract

Background of the study*: Breast milk is the recommended nourishment for all infants. All the babies regardless the type of delivery should be given early and exclusive breastfeeding up to 6 months of age. Except breastfeeding, there are many practices followed by caregivers like bottle feeding, cup feeding, paladai feeding, katori and spoon feeding etc. but one of the most common practice is India is bottle feeding which causes various problems in children.* ***Aim****: To evaluate the efficacy of a structured teaching program on caregivers' awareness of the adverse effects of bottle feeding in a chosen community area, a Quantitative research approach was employed. A quasi-experimental research design was implemented, and 60 subjects were selected using the snowball sampling technique. Self structured questionnaire was used to assess the knowledge of subjects.* ***Results****: The findings of pre-test study of experimental group revealed zero excellent knowledge, 40% had average knowledge, 53.33% had good knowledge and 6.67% had below average knowledge regarding ill-effects of bottle feeding and pre -test study of control group revealed that none of them had below average and excellent knowledge, 43.33% had average knowledge and 56.67% had good knowledge. The post test findings of experimental group shows that 0% had below average and average knowledge, 36.67% had good knowledge and 63.33% had excellent knowledge and post test control group had 0% had below average and excellent knowledge, 33.33% had average knowledge and 66.67% had good knowledge. The findings revealed that post-test (experimental) mean score was 1.1 with the standard deviation of 1.40 and post - test (control) mean was 1.37 with standard deviation of 1.59. The value of paired t- test was 8.35.* ***Conclusion****: By providing structured teaching program majority of caregivers has excellent knowledge.*

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INTRODUCTION

Human milk improves the nutritional status of a child. Breast milk contains all the essential nutrients necessary for the growth and development of infants. Also, breast milk has the antibodies that can help the baby to prevent from infection. Except breastfeeding, there are many practices followed by caregivers like bottle feeding, cup feeding, paladai feeding, katori and spoon feeding etc. One of the most common practice is India is bottle feeding which causes various problems in children. The

children who are feed on bottles unable to get required nutrients so they suffer from malnutrition. These children are more susceptible to allergic reaction and various gastrointestinal problem one of which is more common diarrhea. Though, the poor practice by caregivers can lead to ill effects of bottle feeding among children. It could be baby bottle tooth decay, ear infections, speech delay, chronic respiratory infections [Bronchitis, pneumonia], diarrhea, choking, aspiration, low IQ score, sudden infants death syndrome, regurgitation, vomiting, sucking and swallowing difficulties, overfeeding. Hence prolonged use of bottle at months of age associated with increased risk of BMI over 95th percentile at 5.5 years of age. Children who consistently use a bottle at the age of two are at a higher risk of developing obesity [1, 2].

NEED OF THE STUDY

Bottle feeding are the most common preferably method by the caregivers due to lack of time, mothers are more conscious about body image, trend of bottle feeding etc. The use of poor quality of bottles worsening the health of the baby and child are more prone to serious ill effects of bottle feeding. The children who fed on bottle are suffered from malnutrition whereas who fed on breast are more nourished. So, the awareness of caregivers in rural area regarding common ill effects of bottle feeding was less ,with the help of education their knowledge will be improve and they are further aware the various people in community. It was reported that globally, 525,000 children under 5 year die with diarrhea which is most common ill effect of bottle feeding. In World, the highest prevalence of bottle feeding among children younger than 6 years of age is 44% of 5 years of children having diarrhea and tooth decay 51.3%. 47% of children who were bottle fed have more chances of dental carries. The vulnerable group of babies have Baby bottle tooth decay was found 28% The prevalence of ear infections-44% during first episode of otitis media. In India, the prevalence of artificial feeding like bottle feeding is 42.6%. In district Department of community health medicine GMC Amritsar, Punjab, India. A longitudinal study was conducted in the village of Naagkalan, where all infants born between January 2014 and June 2014 were identified with the assistance of ASHA. According to the findings, over half of these infants (55.55%) experienced some form of morbidity in the last six months. Among them, 27 (49.09%) had diarrhea, 18 (32.73%) suffered from acute respiratory infections, and the remaining 10 (18.18%) had other health issues such as ear infections and skin diseases.

OBJECTIVES

- To assess the pre-test knowledge regarding ill-effects of bottle feeding to experimental group and control group among caregivers at selected community area, Shri Goindwal Sahib, Tarn-Taran, Punjab.
- To plan and give structured teaching program regarding ill-effects of bottle feeding to experimental group among caregivers at selected community area, Shri Goindwal Sahib, Tarn-Taran, Punjab.
- To assess the post-test knowledge score regarding ill regarding ill-effects of bottle feeding to experimental group and control group.
- To evaluate the effectiveness of structured teaching program regarding ill-effects of bottle feeding to experimental group and control group among caregivers at community area, Shri Goindwal Sahib, Tarn-Taran, Punjab.

REVIEW OF LITERATURE

Belachew M. Hunde, Ismael K. Sitotaw and Teshome B. Elema (2023) conducted cross sectional study on 692 mothers at Asella Town, Oromia region, Ethiopia. The research findings indicated that the occurrence of bottle feeding practice was recorded as 246. The study concluded that bottle feeding practice was higher in Asella Town [3].

Duraisamy Vinola, Pragasam X Ananda, Vasavaih K Suresh, John B John (2020) conducted a cross sectional study on sample size of 187 in South India. The study revealed Bottle feeding were reported is 21.4% and only 52.4% mothers were aware about caries, 66.2% were aware about malocculusion. The study concluded that mothers awareness about malocculusion is poor [4].

Belay Daniel Gashaneh et.al (2022) conducted a cross sectional study in Ethiopia with sample size 4275 children. This study revealed that women from richest household were AOR- 1.33, women with secondary and above education status were AOR-2.49, multiple birth were AOR-4.30 and rural residence were AOR-0.49 are factors associated with bottle feeding and 13.5% women used bottle feeding among children. This study concluded that the bottle feeding practice is moderate in Ethiopia [5].

Ventura K Alison, et.al (2023) conducted cross sectional study on 197 mothers at United state. The research findings indicated that 41% of the participants were aware or potentially aware of Paced Bottle Feeding (PBF), 23% actively utilized PBF, and 35% occasionally engaged in Paced Bottle Feeding. The study concluded that Paced Bottle Feeding showed an association with the probability of one aspect of pressuring feeding practices, specifically promoting the complete emptying of the infant's bottle [6].

Mrs. G. Prameela, Prof. A. Padmaja (2017) conducted Quasi-Experimental study on 60 mothers at Chandragira, Trupati. The study revealed that in Pre test the mothers had adequate knowledge 30%, moderate knowledge 50%, inadequate knowledge 20%, whereas post test 20% was adequate knowledge, 70% was moderate knowledge and 10% inadequate knowledge. The research findings indicated that the effectiveness of the Structured Teaching Program was evident in enhancing mothers' knowledge [7].

RESEARCH METHODOLOGY

A Quantitative research approach was employed, utilizing a Quasi-experimental research design, and 60 subjects were chosen through the application of the Snowball sampling technique. A self-structured questionnaire was utilized for evaluating the subjects' knowledge.

ANALYSIS

Organization of Data

The analysed data was organized according to the objectives under following sections:

- *Section A:* Socio-demographic variables of study samples.
- *Section B:* Pre-test knowledge score of experimental group regarding ill-effects of bottle feeding.
- *Section C:* Pre-test knowledge score of control group regarding ill-effects of bottle feeding.
- *Section D:* Post-test knowledge score of experimental group regarding ill-effects of bottle feeding
- *Section E:* Post-test knowledge score of control group regarding ill-effects of bottle feeding
- *Section F:* To evaluate the effectiveness of structured teaching program regarding ill- effects of bottle feeding.

Table 1 depicts that in the gender of caregivers, maximum no. of samples were female i.e. 28(93.33%) and 2(66.67%) were males. Maximum number of samples were in the age group of 30-40 years 14(46.67%), 9(30%) were in the age group of 20-30 years,7(23.33%) were in the age group of more than 40 and none of them was in the age group of more than 40 years. The educational status of caregivers, maximum number of samples had studied upto primary education 20 (66.67%), 10(33.33%) had studied upto secondary education and none of them upto graduation and post-graduation. In Occupation most of the samples were non-working 23 (76.67%) and minimum no. of samples were working i.e. (23.33%). 22(73.33%) of samples were from rural area and 8(26.67%) were from urban area. Majority of caregivers were influenced from family i.e. 17(56.67%), 7(23.33%) were influenced from mass media, followed by 6 (20%) were influenced from neighbours and none of them was influenced from friends.

Above Table 2 shows that majority of caregivers had knowledge below average i.e 2 (6.67%), 16 (53.33%) had good knowledge 12 (40%) had average knowledge and none of them had excellent knowledge regarding ill -effects of bottle feeding. **Above Table 3** shows that majority of caregivers had good knowledge i.e. 17 (56.67%), 13 (43.33%) had average knowledge and none of them had below knowledge and excellent knowledge regarding ill- effects of bottle feeding.

Table 1. Frequency and %age distribution of socio-demographic variables of experimental group.

S.N.	Variables	Frequency	Percentage
1	*Gender*		
a)	Male	2	6.67%
b)	Female	28	93.33%
2	*Age of mother (in years)*		
a)	Less than 20	0	0%
b)	20-30	9	30%
c)	30-40	14	46.67%
d)	More than 40	7	23.33%
3	*Educational Status*		
a)	Primary education	20	66.67%
b)	Secondary education	10	33.33%
c)	Graduation	0	0%
d)	Post-graduation and above	0	0%
4	*Occupation*		
a)	Working	7	23.33%
b)	Non-working	23	76.67%
5	*Area/Locality*		
a)	Rural	22	73.33%
b)	Urban	8	26.67%
6	*Who influence you regarding the bottle feeding?*		
a)	Family	17	56.67%
b)	Mass media	7	23.33%
c)	Neighbours	6	20%
d)	Friends	0	0%

Table 2. Frequency and percentage distribution of Pre-test level of knowledge of experimental group regarding ill- effects of bottle feeding.

S.N.	Level of knowledge	Frequency	Percentage (%)
1	Below average	2	6.67%
2	Average	12	40%
3	Good	16	53.33%
4	Excellent	0	0%

Table 3. Frequency and percentage of Pre-test level of knowledge of control group regarding ill-effects of bottle feeding.

S.N.	Level of knowledge	Frequency	Percentage (%)
1	Below average	0	0%
2	Average	13	43.33%
3	Good	17	56.67%
4	Excellent	0	0%

Above Table 4 shows that majority of caregivers had excellent knowledge i.e.19 (63.33%) 11 (36.67%) had good knowledge and none of them had below average and average knowledge regarding ill effects of bottle feeding. **Above Table 5** shows that majority of caregivers i.e 20 (66.67%) had good knowledge, 10 (33.33%) had average knowledge and none of them had below average and excellent knowledge regarding ill effects of bottle feeding.

Table 4. Frequency and percentage of post-test knowledge score of experimental group.

S.N.	Level of knowledge	Frequency	Percentage (%)
1	Below average	0	0%
2	Average	0	0%
3	Good	11	36.67%
4	Excellent	19	63.33%

Table 5. Frequency and percentage of post-test knowledge of control group.

S.N.	Level of knowledge	Frequency	Percentage (%)
1	Below average	0	0%
2	Average	10	33.33%
3	Good	20	66.67%
4	Excellent	0	0%

Table 6. Effectiveness of structured teaching program regarding knowledge of ill effects of bottle feeding.

S.N.	Mean score	Maximum score	Standard deviation (SD)	Paired t-test
Post-test (experimental group)	1.1	16	1.40	**8.35**
Post-test (control group)	1.37	12	1.59	

Table 6 Shows the mean score of post -test experimental group was 1.1 and post test mean score of control group was 1.37. The maximum score of post-test of experimental group regarding the ill-effects of bottle feeding among caregivers was 16 (SD=1.40) and post test score of control group regarding ill-effects of bottle feeding among caregivers was 12 (SD=1.59). The value of paired t-test was "8.35". The calculated t value (8.35) > tabulated value (2.05) at the level of 0.05. The paired t- test value was significant probability at 0.05 level. The post-test score experimental group regarding ill-effects of bottle feeding is (66.67%) more than pre- test score of experimental group regarding ill-effects of bottle feeding i.e. (53.33%) so we reject null hypothesis as there is significant association between the variables i.e. ill-effects of bottle feeding arises due to bottle feeding. Therefore, the research findings indicated the effectiveness of the structured teaching program in enhancing knowledge about the adverse effects of bottle feeding among caregivers.

CONCLUSION

The goal of nursing practice was to improve the knowledge of caregivers regarding ill-effects of bottle feeding. Caregivers will apply this information to safeguard the well-being of their children.

RECOMMENDATIONS

On the basis of study that had been conducted, certain suggestions given for future studies are :

- A comparative study can be undertaken to compare the knowledge of caregivers regarding ill-effects of bottle feeding in urban and rural areas.
- A descriptive study can be undertaken to assess the practices and attitude of bottle feeding.

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