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A Cross-sectional Study to Assess the Associated Factors on Bottle-feeding among Mothers of Infants in Selected Rural Slum Area of District Rohtak

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Abstract

Introduction*: WHO developed recommendations for exclusive breastfeeding up to 6 months, safe complementary foods after that, and avoidance of bottle-feeding. The prevalence of bottle-feeding varies among different nations. There is a lack of data from India regarding the diverse factors contributing to the practice of bottle-feeding. Various reasons for bottle-feeding mentioned by mothers were illness, breast problems, and the perception of insufficient milk. Whatever be the reason for the selection of bottle feeding by the mother, WHO recommends the avoidance of bottle feeding and breastfeeding in all mothers, including HIV-positive mothers. Artificial feeding in any form is harmful for the baby and the mother. According to a study conducted by Chen et al., preterm infants exhibited significantly higher levels of oxygen saturation and body temperature when directly breastfed as opposed to bottle-feeding. Therefore, breastfeeding appears to be a more physiological feeding method for preterm infants, while bottle-feeding may be associated with increased stress. The use of bottles, even among initially breast-fed children, interferes negatively with oral development.* ***Objectives of the study:*** *1. To find out the associated factors of bottle-feeding among the mothers of infants in a selected rural slum area of Rohtak District. 2. To find the association between bottle-feeding and selected demographic variables among the mothers of infants in a selected rural slum area of Rohtak District.* ***Methodology****: For this study, a cross-sectional research design was selected, data collection was from 13.03.2022 to 16.04.2022, and the sample for the study was selected from a selected rural slum area in Rohtak. The researcher employed convenience sampling to select a sample size of 60. A structured checklist was utilized to gather data on risk factors, and the interview method was employed. The collected data was analyzed using both descriptive and inferential statistics.* ***Results:*** *The result showed that: Section-A: Distribution of frequency and percentage of demographic characteristics; Section B: Distribution of frequency and percentage of risk factors; and Section-C: Environmental risk factor on bottle feeding association with selected demographic variables. The findings of the analysis on bottle feeding with selected demographic variables show that there was a significant difference at the 0.05 level of significance.* ***Conclusion:*** *The present study aims to assess the associated risk factor for bottle feeding among mothers of infants in a selected rural slum area in Rohtak. From the findings of the data analysis, it is clear that health and biological risk factors are associated with bottle-feeding.*

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INTRODUCTION

WHO developed recommendations for exclusive breastfeeding up to 6 months, safe complementary foods after that, and the avoidance of bottle-

feeding. The prevalence of bottle-feeding varies across countries, and there is a lack of data in India concerning the diverse factors influencing the practice of bottle-feeding. Various reasons for bottle-feeding mentioned by mothers were illness, breast problems, and the perception of insufficient milk. Whatever the reason for the selection of bottle-feeding by the mothers, WHO recommends the avoidance of bottle-feeding and breastfeeding in all mothers, including HIV-positive mothers [1].

Artificial feeding in any form is harmful for the baby and the mother. Research conducted by Chen et al. indicates that preterm infants exhibit significantly higher levels of oxygen saturation and body temperature when breastfed directly as opposed to bottle-feeding. Therefore, breastfeeding emerges as a more physiological feeding method for preterm infants, suggesting that bottle-feeding may be associated with increased stress. The use of bottles, even among initially breast-fed children, interferes negatively with oral development. Bottles are deleterious to the establishment of breastfeeding not only because they decrease the prolactin response but also because the baby may refuse the breast completely once given a bottle. The mechanisms of suckling at the breast and sucking a bottle are completely different, and babies who are bottle-fed refuse breast-feeding because of nipple confusion. Therefore, this study aimed to know various determinants of bottle-feeding, including child factors, maternal factors, and other social factors, with the hope that this study will help to understand various reasons to start bottle-feeding and better ways to prevent it [2–4].

Ensuring infant survival necessitates proper feeding; the primary feeding methods for infants below 6 months old include breastfeeding and bottle-feeding. Breastfeeding is widely recognized as the optimal choice for both mothers and infants, and global initiatives aim to encourage increased adoption and duration of breastfeeding (World Health Organization (WHO) and United Nations Children's Fund (UNICEF)). Despite the acknowledged importance of breastfeeding, bottle-feeding also plays a crucial role in infant nutrition (National Health and Medical Research Council; World Health Organization (WHO)). Globally, around 59% of infants (World Health Organization (WHO)) and approximately 85% of Australian infants (Australian Institute of Health and Welfare) are fed with either breast milk or formula using bottles by the age of 5 months. Guidelines and recommendations on breastfeeding discuss strategies to assist both the mother and infant in overcoming challenges that may arise during the initiation and maintenance of breastfeeding (National Health and Medical Research Council, 2012). These guidelines cover various topics, including the positioning and attachment of the infant to the breast, the mother's position, milk transfer and production, feeding according to the baby's needs, normal infant behavior, and addressing everyday problems (National Health and Medical Research Council, 2012; World Health Organization (WHO, 2017).

Guidelines and recommendations for bottle-feeding typically emphasize health and safety aspects, focusing on elements such as cleaning and sterilizing feeding equipment, proper formula preparation, and the storage and transportation of formula (National Health and Medical Research Council, 2012; WHO, 1981; United Nations Children's Fund (UNICEF) UK, 2015). While these procedural recommendations are crucial, there seems to be a deficiency in addressing bottle-feeding as a comprehensive system and providing guidance on optimal infant feeding practices when using a bottle [5–9].

MATERIAL AND METHOD

For this study, cross-sectional research design was selected. Data collection was from March 2023 to April 2023. The samples for the study were selected from a selected rural slum area in Rohtak. The sample, comprising 60 individuals, was chosen using the convenience sampling method. The researcher employed a structured checklist to gather information on risk factors and conducted interviews. The collected data underwent analysis utilizing both descriptive and inferential statistical methods.

Data Collection and Procedure

Data collection or research tools are devices or instruments utilized to gather data, ranging from paper questionnaires to computer-assisted interviewing systems. These tools are employed to assess

variables or acquire the necessary information for addressing a research question. We used the Hindi and English versions of structured checklist questionnaires for evaluation. Each question has a set of responses, whose right answer score is 1 and the wrong answer score is 0. Participants have to select the appropriate response from the options given, and the score of each response is added to get the final score.

The selection of the study setting was done conveniently, and the principal investigator actively participated in the data collection process. The subjects were informed that their participation was voluntary, and a participant information sheet was provided before completing the questionnaire. After obtaining ethical approval and permission from the concerned authorities, the participants who were able to read and write in Hindi or English were contacted for inclusion in the study. The participation information sheet with the details of the study, informed consent forms, and structured interview questionnaire forms was distributed to all the subjects. Participants were urged to independently complete the forms, and any challenges in form completion or understanding specific questions were addressed by the principal investigator.

Statistical Analysis

Statistical analysis was performed using the IBM Statistical Package for the Social Sciences (SPSS) software, version 20.0 for Windows. A significance level of 0.05 ($p<0.05$) was maintained throughout the study. Mean and standard deviation were used to report continuous variables, and frequencies along with percentages were employed for the presentation of categorical variables. Pearson's correlation coefficient was computed to assess the relationships between the parameters.

RESULTS

The data presented indicate that the majority of mothers (54%) were in the age group of 20–25 years, and 30 percent of mothers were in the age group of 26–30. Around 13 percent were in the age group of 31–35 years, and 3 percent were in the age group above 35 years. In terms of mothers' education, the majority (70%) of mothers had a primary education, 30% were illiterate, 0% had a secondary education, and 0% graduated. In terms of occupation, the majority of mothers (58%) worked in the private sector, 42% of mothers were homemakers, with 0% working for the government and 0% working for themselves. In terms of mother's religion, the majority of mothers (74%) were Hindu, and 20% mothers were Muslim. Around 0% of mothers were Sikhs, and 6% of mothers were of another religion. In terms of types of families, the majority (43%) of mothers were from joint families, 23 percent were from extended families, 20 percent were from nuclear families, and 13 percent were single-parent families. In terms of family income, the majority (58%) incomes were 10,000/-, and 28%) incomes were 10,001–15,000/-. About 10% family income was 15,000–20,000/-, and 3% family income was 20,000/-. In terms of age, the majority of children (46%) were 7–9 months old, 23% were 4–6 months old, 20% were between 10 and 12 months old, and 10% were 0–3 months of age. In terms of gender of child, the majority of children (67%) were male, and 43% were female.

In terms of biological factors, the majority of mothers (62%) were not producing enough milk to feed their children; 20% of mothers had birth space between children; 15% of children had breast-holding and sucking issues; and 3% of mothers had twin or triplet babies. In terms of psychological factors, the majority of mothers (36.5%) were not aware of the adverse effects of bottle-feeding; 36.5% mothers were feeling uncomfortable breastfeeding their child in public places; 20% mothers were concerned about their body image; 7% mothers had adopted children; and 0% mothers had psychotic disease. According to social factors, the majority of mothers (30.5%) were having communicable disease, 25.5% were bottle-feeding their children for weight gain, 21.5% were working mothers, and 21.5% were not available at the time of feeding their child. In terms of environmental factors, the majority of infants (56%) were taking bottles during nap time or prior to sleep, 23.3% of mothers were given additional supplements to bottle-feed their child, and 20 percent of children

stayed away from their mothers for a long period of time. In terms of health factors, the majority of mother (93.3%) had a breast problem; 3.3% of the mothers were taking an anti-cancer drug; 3.3% of the children had congenital anomalies; 0% had a history of long stays in the hospital; and 0% had medical indications about bottle-feeding.

Findings of the analysis of the of the type of risk factor on bottle-feeding with selected demographic variables show that there was a significant association between environmental risk factors and the type of family, which was found to be significantly associated at the 0.05 level of significance.

Section A: Distribution of Frequency and Percentage Demographic Characteristics

The present study identified that the distribution of frequency and percentage demographic characteristics were not significantly associated as depicted in Table 1.

Table 1. Frequency and percentage distribution of demographic characteristics of the sample.

S.N.	Sample characteristics	Frequency	Percentage
1.	**Age of mothers (in years)**		
	(a) 20–25	32	54%
	(b) 26–30	18	30%
	(c) 31–35	08	13%
	(d) Above 35	02	3%
2.	**Religion**		
	(a) Hindu	44	74%
	(b) Muslim	12	20%
	(c) Sikh	00	0
	(d) Other	04	6%
3.	**Educational status of mothers**		
	(a) Illiterate	18	30%
	(b) Primary education	42	70%
	(c) Secondary education	00	0
	(d) Graduate	00	0
4.	**Occupation of mothers**		
	(a) Govt. job	00	0
	(b) Homemaker	25	42%
	(c) Self-employed	00	0
	(d) Private job	35	58%
5.	**Type of family**		
	(a) Nuclear family	12	20%
	(b) Joint family	26	43%
	(c) Extended family	14	23%
	(d) Single parent family	08	13%
6.	**Family monthly income (in ₹)**		
	(a) 10, 000 /	35	58%
	(b) 10, 001–15,000/	17	28%
	(c) 15, 001–20,000/	06	10%
	(d) More than 20,000/	02	3%
7.	**Age of child (in months)**		
	(a) 0–3	06	10%
	(b) 3–6	14	23%
	(c) 6–9	28	46%
	(d) 9–12	12	20%
8.	**Gender of child**		
	(a) Male	37	62%
	(b) Female	23	38%

Section B: Distribution of Frequency and Percentage of Risk Factor

The present study identified that the distribution of frequency and percentage of risk factors were not significantly associated as depicted in Table 2.

Table 2. Distribution of frequency and percentage of risk factors.

S.N.	Risk	Response	Frequency	Percentage
1.	***Biological factor***			
	Are you not producing enough milk to feed your child?	Yes	37	62%
	Do you have any birth space between your children?	Yes	12	20%
	Do you have twin or triplet baby?	Yes	02	3%
	Have your child breast holding or sucking issue?	Yes	09 60	15% 100%
2.	***Psychological factor***			
	Are you aware of the adverse effects of bottle-feeding?	Yes	22	36.5%
	Are you concerned about your body image?	Yes	12	20%
	Do you have any psychotic disease?	Yes	0	0%
	Do you have any adopted baby?	Yes	04	7%
	Are you feeling uncomfortable breastfeeding your child in a public place?	Yes	22	36.5%
3.	***Social factor***			
	Do you have any communicable disease?	Yes	19	30.5%
	Are you not available at the time of feeding your child?	Yes	13	21.5%
	Are you bottle-feeding your child for weight gain?	Yes	15	25.5%
	Are you a working mother?	Yes	13	21.5%
4.	***Environmental factor***			
	Does your infant take the bottle during nap time or prior to sleep?	Yes	34	56.7%
	Do you give the additional supplement with bottle-feeding?	Yes	14	23.3%
	Does your child stay away from you for a long period of time?	Yes	12	20%
5.	***Health factor***			
	Does your child having congenital anomalies?	Yes	02	3.3%
	Do you have history of long stay in hospital?	Yes	00	0%
	Are you taking anti-cancer drug?	Yes	02	3.3%
	Do you have any breast problem?	Yes	56	93.3%
	Do you have any medical indication about bottle-feeding?	Yes	00	0%

Section C: The Environmental Risk Factors on Bottle-feeding Association with Selected Demographic Variables

The chi-square test was employed to assess the correlation between risk factors influencing bottle feeding and specific demographic variables, including the mother's age, educational status,

occupation, religion, family type, income, as well as the age and gender of children. The study's objective was deemed statistically significant (p-value < 0.05). However, no statistically significant associations were observed in the mother's age, educational status, occupation, religion, family type, income, age, and gender of children (p-value > 0.05). Hence, the present study identified the risk factor on bottle-feeding with selected demographic variables were not significantly associated as depicted in Table 3.

Table 3. Association of biological factors with demographic variables.

S.N.	Demographic variable	F/P	Biological factor	F/P	Chi square value	DF	P value
1.	Age group (in years) A. 20–25 B. 26–30 C. 31–35 D. Above 35	 32 (54%) 18 (30%) 08 (13%) 02 (3%)	1. Are you not producing enough milk to feed your child?	37 (62%)	11.337	12	.500
2.	Educational status of mothers A. Illiterate B. Primary education C. Secondary education D. Graduate	 16 (30%) 42 (70%) 00 (%) 00 (0%)	2. Do you have birth space between your children?	12 (20%)	2.678	4	.613
3.	Occupation of mothers A. Govt. job B. Homemaker C. Self-employed D. Private job	 00 (0%) 25 (42%) 00 (0%) 35 (58%)	3. Do you have twin or triplet baby?	2 (3%)	7.336	4	.572
					14.900	8	.501
4.	Religion A. Hindu B. Muslim C. Sikh D. Other	 44 (74%) 12 (20%) 00 (0%) 04 (6%)	4. Does your child have breast holding or sucking issue?	9 (15%)	22.164	12	.247
5.	Type of family A. Nuclear family B. Joint family C. Extended family D. Single parent family	 12 (20%) 26 (43%) 14 (23%) 08 (13%)					
6.	Family income (in ₹) A. 10,000/- B. 10,001–15,000/- C. 15,000–20,000/- D. >20,000/-	 35 (58%) 17 (28%) 06 (10%) 02 (3%)			22.164	12	.036
7.	Age of children (in months) A. 0–3 B. 4–6 C. 7–9 D. 10–12	 06 (10%) 14 (23%) 28 (46%) 12 (20%)			16.020	12	.190
					3.621	4	.460
8.	Gender of children A. Male B. Female	37 (62%) 23 (38%)					

The chi-square test was employed to examine the connection between risk factors influencing

bottle-feeding and specific demographic variables, including the mother's age, educational status, occupation, religion, family type, income, as well as the age and gender of children. The study's objective was determined to be statistically significant (p-value < 0.05). However, no statistically significant associations were identified in terms of the mother's age, educational status, occupation, religion, family type, income, age, and gender of children (p-value > 0.05). Hence, the present study identified the risk factor on bottle-feeding with selected demographic variables were not significantly associated as depicted in Table 4.

Table 4. Association of psychological risk factor with demographic variables.

S.N.	Demographic variable	F/P	Psychological factor	F/P	Chi square value	DF	P value
1.	Age group (in years) A. 20–25 B. 26–30 C. 31–35 D. Above 35	 32 (54%) 18 (30%) 08 (13%) 02 (3%)	1. Are you aware of the adverse effects of bottle-feeding?	22 (36.5%)	10.796	9	.290
2.	Educational status of mothers A. Illiterate B. Primary education C. Secondary education D. Graduate	 16 (30%) 42 (70%) 00 (%) 00 (0%)	2. Are you concerned about your body image?	12 (20%)	3.333	6	.766
3.	Occupation of mothers A. Govt. job B. Homemaker C. Self-employed D. Private job	 00 (0%) 25 (42%) 00 (0%) 35 (58%)	3. Do you have any psychotic disease?	0 (0%)	2.255	3	.521
4.	Religion A. Hindu B. Muslim C. Sikh D. Other	 44 (74%) 12 (20%) 00 (0%) 04 (6%)	4. Do you have any adopted baby?	4 (7%)	5.421	3	.143
5.	Type of family A. Nuclear family B. Joint family C. Extended family D. Single parent family	 12 (20%) 26 (43%) 14 (23%) 08 (13%)	5. Do you feeling uncomfortable for breastfeeding your child in public place?	22 (36%)	8.324	9	.502
6.	Family income (in ₹) A. 10,000/- B. 10,001–15,000/- C. 15,000–20,000/- D. >20,000/-	 35 (58%) 17 (28%) 06 (10%) 02 (3%)			21.167	9	.012
7.	Age of children (in months) A. 0–3 B. 4–6 C. 7–9 D. 10–12	 06 (10%) 14 (23%) 28 (46%) 12 (20%)			7.548	9	.580
8.	Gender of children A. Male B. Female	 37 (62%) 23 (38%)			3.108	3	.375

The chi-square test was employed to assess how risk factors are linked to bottle-feeding concerning specific demographic variables such as the mother's age, educational status, occupation, religion, family type, income, as well as the age and gender of children. The study's primary aim was

determined to have statistical significance (p-value < 0.05). However, no statistically significant associations were identified in terms of the mother's age, educational status, occupation, religion, family type, income, age, and gender of children (p-value > 0.05). Hence, the present study identified the risk factor on bottle-feeding with selected demographic variables were not significantly associated as depicted in Table 5.

Table 5. Association of social factors with demographic variables.

NO.	Demographic Variable	F/P	Social factor	F/P	Chi square value	DF	P value
1.	Age group (in years) A. 20–25 B. 26–30 C. 31–35 D. Above 35	32 (54%) 18 (30%) 08 (13%) 02 (3%)	1. Do you have any communicable disease?	19 (31.5%)	4.536	6	.605
2.	Education status of mothers A. Illiterate B. Primary education C. Secondary education D. Graduate	16 (30%) 42 (70%) 00 (%) 00 (0%)	2. Are you a working mother?	13 (21.5%)	1.960	2	.396
3.	Occupation of mothers A. Govt. job B. Homemaker C. Self-employed D. Private job	00 (0%) 25 (42%) 00 (0%) 35 (58%)	3. Are you not available at the time of feeding your child?	15 (25.5%)	4.075	2	.885
4.	Religion A. Hindu B. Muslim C. Sikh D. Other	44 (74%) 12 (20%) 00 (0%) 04 (6%)	4. Do you give bottle-feeding to your child for weight gain?	13 (21.5%)	4.075	4	.396
5.	Type of family A. Nuclear family B. Joint family C. Extended family D. Single parent family	12 (20%) 26 (43%) 14 (23%) 08 (13%)			3.489	6	.745
6.	Family income (in ₹) A. 10,000/- B. 10,001–15,000/- C. 15,000–20,000/- D. >20,000/-	35 (58%) 17 (28%) 06 (10%) 02 (3%)		22 (36%)	8.345	6	.214
7.	Age of children (in months) A. 0–3 B. 4–6 C. 7–9 D. 10–12	06 (10%) 14 (23%) 28 (46%) 12 (20%)			2.485	6	.870
8.	Gender of children A. Male B. Female	37 (62%) 23 (38%)			2.224	2	.329

The chi-square test was utilized to investigate the correlation between risk factors and bottle-feeding concerning specific demographic variables, including the mother's age, educational status, occupation, religion, family type, family income, age of children, and gender of children. The study's objective was determined to be statistically significant (p-value < 0.05). However, there were no statistically significant associations observed in terms of the mother's age, educational status, occupation, religion, family type, family income, age of children, and gender of children (p-value > 0.05). Hence, the present study identified the risk factor for bottle-feeding with selected demographic

variables. The type of family is significantly associated with environmental factors, and other demographic variables are not significantly associated as depicted in Table 6.

Table 6. Association of environmental factors with demographic variables.

S.N.	Demographic variable	F/P	Environmental factor	F/P	Chi square value	DF	P value
1.	Age group (in years) A. 20–25 B. 26–30 C. 31–35 D. Above 35	 32 (54%) 18 (30%) 08 (13%) 02 (3%)	1. Does your child stay away from you for long period of time?	34 (56.7%)	11.648	12	.474
2.	Educational status of mothers A. Illiterate B. Primary education C. Secondary education D. Graduate	 16 (30%) 42 (70%) 00 (%) 00 (0%)			2.608	3	.456
3.	Occupation of mothers A. Govt. job B. Homemaker C. Self-employed D. Private job	 00 (0%) 25 (42%) 00 (0%) 35 (58%)	2. Does your infants take the bottle during nap time or prior to sleep?	14 (23.3%)	4.023	6	.674
4.	Religion A. Hindu B. Muslim C. Sikh D. Other	 44 (74%) 12 (20%) 00 (0%) 04 (6%)			6.765	6	.343
5.	Type of family A. Nuclear family B. Joint family C. Extended family D. Single parent family	 12 (20%) 26 (43%) 14 (23%) 08 (13%)	3. Do you give the additional supplements with bottle-feeding?	12 (20%)	30.427	9	.000
6.	Family income(in ₹) A. 10,000/- B. 10,001–15,000/- C. 15,000–20,000/- D. >20,000/-	 35 (58%) 17 (28%) 06 (10%) 02 (3%)			18.790	9	.027
7.	Age of children (in months) A. 0–3 B. 4–6 C. 7–9 D. 10–12	 06 (10%) 14 (23%) 28 (46%) 12 (20%)			4.387	9	.884
					5.282	6	.508
8.	Gender of children A. Male B. Female	37 (62%) 23 (38%)					

The chi-square test was applied to examine the relationship between risk factors and bottle-feeding in relation to specific demographic variables, encompassing the mother's age, educational status, occupation, religion, family type, family income, age of children, and gender of children. The study's objective was determined to have statistical significance (p-value < 0.05). However, there were no statistically significant associations identified in terms of the mother's age, educational status, occupation, religion, family type, family income, age of children, and gender of children (p-value > 0.05). Hence, the present study identified the risk factor on bottle-feeding with selected demographic variables were not significantly associated as depicted in Table 7.

DISCUSSION

This study involved 418 participants, yielding a response rate of 99.1%. Mothers had an average age of 29.3 years, accompanied by a standard deviation of ±6.5, while the infants/children had a mean

age of 10.6 months with a standard deviation of ±6.1. Approximately 51.9% of the infants/children were female. A majority of the mothers (54.8%) identified as Orthodox Christians in terms of religion, and Oromo ethnicity was predominant (64.8%). About 46.4% of the mothers had received formal education. In terms of occupation, 55.7% of the mothers were housewives, and a significant portion of husbands (94.9%) had attained formal education. Among the participants, 93.3% had a history of antenatal follow-up, and 82.1% had postnatal follow-up.

Table 7. Association of health factors with demographic variables.

S.N.	Demographic variable	F/P	Health factor	F/P	Chi square value	DF	P value
1.	Age group (in years) A. 20–25 B. 26–30 C. 31–35 D. Above 35	 32 (54%) 18 (30%) 08 (13%) 02 (3%)	1. Do your child having congenital anomalies?	2 (3.3%)	3.535	6	.739
2.	Education status of mothers A. Illiterate B. Primary education C. Secondary education D. Graduate	 16 (30%) 42 (70%) 00 (%) 00 (0%)	2. Are you taking anti-cancer drug?	0 (0%)	.948	3	.613
3.	Occupation of mothers A. Govt. job B. Homemaker C. Self-employed D. Private job	 00 (0%) 25 (42%) 00 (0%) 35 (58%)	3. Do you have history of long stay in hospital?	2 (3.3%)	.761 3.531	2 4	.683 .473
4.	Religion A. Hindu B. Muslim C. Sikh D. Other	 44 (74%) 12 (20%) 00 (0%) 04 (6%)	4. Do you have any breast problem?	56 (93.3%)	17.850	6	.007
5.	Type of family A. Nuclear family B. Joint family C. Extended family D. Single parent family	 12 (20%) 26 (43%) 14 (23%) 08 (13%)	5. Do you have any medical indication about bottle-feeding?	0 (0%)			
6.	Family income (in ₹) A. 10,000/- B. 10,001–15,000/- C. 15,000–20,000/- D. >20,000/-	 35 (58%) 17 (28%) 06 (10%) 02 (3%)			7.329	6	.292
7.	Age of children (in months) A. 0–3 B. 4–6 C. 7–9 D. 10–12	 06 (10%) 14 (23%) 28 (46%) 12 (20%)			5.424	6	.491
8.	Gender of children A. Male B. Female	 37 (62%) 23 (38%)			1.348	2	.510

A significant proportion (62.7%) delivered their babies at healthcare facilities, and a substantial number (96.2%) received guidance on feeding infants and young children. Of those who received advice, 55% stated that they were informed during counseling that bottle-feeding is not recommended in infant and young child feeding practices. The data presented indicate that the majority of mothers (54%) were in the age group of 20–25 years, and 30 percent were in the age group of 26–30. About 13 percent were in the age group of 31–35 years, and 3 percent were in the age group above 35 years. In terms of mothers' education, the majority (70%) of mothers had a primary education, 30% were

illiterate, 0% had a secondary education, and 0% graduated. In terms of occupation, the majority of mothers (58%) worked in the private sector. About 42% of mothers were homemakers, with 0% working for the government and 0% working for themselves. In terms of mothers' religion, the majority of mothers (74%) were Hindu, and 20% were Muslim. About 0% of mothers were Sikh, and 6% of mothers were of another religion. In terms of types of families, the majority (43%) were joint families. About 23 percent were extended families, 20 percent were nuclear families, and 13 percent were single-parent families. In terms of family income, the majority (58%) of incomes were 10,000/-, and 28% incomes were in the range of 10,001–15,000/-. About 10% family income was 15,000–20,000/-, and 3% family income was 20,000/-. In terms of age of the child, the majority (46%) were 7–9 months of age, about 23% children were 4–6 months of age, 20% children were 10–12 months of age, and 10% children were 0–3 months of age. In terms of gender, the majority of children (67%) were male and 43% were female.

In terms of biological factors, the majority of mothers (62%) were not producing enough milk to feed their children; 20% of mothers had birth space between children; 15% children had breast-holding and sucking issues; and 3% of mothers had twin or triplet babies. In terms of psychological factors, majority (36.5%) of mothers were not aware of the adverse effects of bottle-feeding; 36.5% of mothers were feeling uncomfortable breastfeeding their child in public places; 20% of mothers were concerned about their body image; 7% of mothers had adopted children; and (0%) had psychotic diseases. Regarding social factors, the majority (30.5%) was having communicable disease, 25.5% were bottle-feeding their children for weight gain, 21.5% were working mothers, and 21.5% were not available at the time of feeding their child. In terms of environmental factors, the majority (56%) was taking bottles during nap time or prior to sleep, 23.3% mothers were given additional supplements with bottles to feed their children, and 20% children stayed away from their mothers for a long period of time. In terms of health factors, the majority (93.3%) was having breast problems; 3.3% mothers were taking anti-cancer drugs; 3.3% children had congenital anomalies; 0% had a history of long stays in hospitals; and 0% had medical indications about bottle-feeding. Findings of the analysis of the type of risk factor on bottle-feeding with selected demographic variables show that there was a significant association between environmental risk factors and the type of family, which was found to be significantly associated at the 0.05 level of significance [10].

Limitations of the Study

The study will be limited to:

- Mothers of infants who exclusively bottle-feed their infants
- Mothers who are willing to participate in the study.

CONCLUSION

Based on the findings of the study, the following conclusions were drawn:

- The study revealed an elevated health risk associated with bottle-feeding.
- A notable correlation was observed between the demographic variable of family types and environmental risk factors.

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