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To Assess the Knowledge, Attitude and Practice Regarding Baby Bottle Tooth Decay Among Mothers of Admitted Children (1–3 Years of Age) in a Selected Hospital, New Delhi

Thongbam Rebika[1]; Srishty Solanki[2]; Anushka[3]; Deepika Negi[3]; Mahima Abraham[3]; Mamata[3]; Nikita Toppo[3]; Sakshi Singh[3]; Tenzin Tsetan[3]

[1]Assistant Professor, Holy Family College of Nursing, New Delhi.
[2]Tutor, Holy Family College of Nursing, New Delhi.
[3]B.Sc. Nursing (Post Basic), Holy Family College of Nursing, New Delhi.

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Abstract: Background: Baby Bottle Tooth Decay (BBTD) is a common yet preventable condition that primarily affects infants and toddlers due to prolonged bottle feeding with sugary liquids. Parental awareness, particularly of mothers, is critical in early oral health prevention. Objectives: This study aimed to assess the knowledge, attitude, and practices (KAP) regarding BBTD among mothers of admitted children aged 1–3 years. It also sought to find associations between KAP and selected demographic variables, and to examine the correlation between knowledge and practice. Methods: A descriptive, non-experimental quantitative research design was adopted. The study included 40 mothers selected through purposive sampling from a selected hospital in New Delhi. Data was collected using a structured knowledge questionnaire, a 5-point Likert scale for attitude, and a practice checklist. Descriptive and inferential statistics were used for analysis. Results: 67.5% of mothers had average knowledge, 27.5% had poor knowledge, and only 5% had good knowledge. Attitudes were mostly neutral (67.5%), with 20% negative and 12.5% positive. Practice scores indicated that 60% had poor practice, 37.5% had fair, and only 2.5% had good practice. A weak negative correlation was observed between knowledge and practice ($r = -0.0778$, $p < 0.05$). Significant associations were found between KAP and demographic variables such as age, religion, number of children, education level, and information sources. Conclusion: Most mothers had average knowledge, neutral attitudes, and poor practices regarding BBTD. Structured awareness programs are necessary to improve preventive practices.

Keywords: *Baby Bottle Tooth Decay, Knowledge, Attitude, Practice, Mothers, Oral Health.*

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I. INTRODUCTION

Baby Bottle Tooth Decay (BBTD) is a common form of caries that affects the maxillary incisors and, in many cases, the molars. It begins before the age of two and is a developing issue. BBTD is a nutritional ailment that leads to carious teeth. Treatment entails significant and costly tooth restoration or extraction in a hospital setting, which may include physical constraint, sedation, or general anesthesia. This review of numerous aspects of BBTD covers description, etiology and pathophysiology, prevalence, background factors, treatment, timing for intervention, existing methods, and research potential. The condition is important to nutritionists since it is completely preventable and develops at an age when many children have seen a nutritionist (for example, in a WIC program) but may not have seen a dentist.[1]

The frequency of ECC among preschool children was 27.5%, with a mean deft of 0.854. The ECC grew dramatically with age. Children whose moms did not attend school and who came from low-income families had a higher prevalence of dental caries. Caries prevalence increased significantly in children who were habituated to on-demand breast feeding and bottle feeding at night. Caries increased considerably when snacks were eaten in between

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meals. However, increased tooth brushing frequency, parental supervision, the use of a baby toothbrush, and fluoridated toothpaste dramatically reduced caries prevalence. [2]

Dental caries afflicts people of all ages and are difficult to remove due to their complex etiology.1,2 Young children face distinct hurdles when it comes to dental caries. It is the most common chronic paediatric condition, with five times the frequency of asthma and seven times that of hay fever. Infants with early childhood caries (ECC) may be underweight, have iron deficiency, and grow at a slower rate due to discomfort when eating.[3]

A. Problem Statement

A study to assess the knowledge, attitude and practices regarding Baby Bottle Tooth Decay among mothers of admitted children (1–3 years of age) in a selected hospital, New Delhi.

B. Objectives of the Study

- To assess the knowledge, attitude, and practice regarding Baby Bottle Tooth Decay among mothers of admitted children (1–3 years).
- To find the association between knowledge, attitude, and practice with selected demographic variables.
- To determine the correlation between knowledge and practice scores.

II. METHODOLOGY

- Research Approach: Quantitative Research Approach
- Research Design: Descriptive Survey Design
- Setting and Study Population: Holy Family Hospital, New Delhi; mothers of admitted children aged 1–3 years
- Sample Size: 40 mothers
- Sampling Technique: Non-probability purposive sampling
- Tools:
  - Tool 1: demographic variables
  - Tool 2: Structured knowledge questionnaire
  - Tool 3: 5-point Likert scale for attitude
  - Tool 4: Checklist for expressed practices
- Tool Validation: Tool validated by 9 subject experts
- Ethical Clearance: Obtained from Ethical committee of HFH, New Delhi.
- Procedure for Data Collection: permission to conduct the study was taken from Holy Family hospital and Principal of Holy Family College of Nursing, New Delhi. The data collection was from 6th March to 11th March 2025 and written consent was obtained from each participant. The total number of participants were 40 and the confidentiality and anonymity of the samples were maintained. 25 to 30 minutes were taken by each participant to fill the tool administered to them includes structured questionnaire, Likert scale and expressed practice checklist regarding baby bottle tooth decay. All the samples were cooperatives during data collection.

III. MAJOR FINDINGS OF THE STUDY

A. Section A: Demographic Variables of Samples

- The majority of the sample (21, 52.5%) is above 30 years old.
- The majority of the sample (22, 55%) identified as Hindu.
- The majority of the sample, 26 (65%), were joint families.
- The majority of the sample, 36 (90%), lived in urban areas.
- The majority of the sample, 18 (45%), consisted of two children.
- The majority of the sample (23, 57.5%) have a graduate education.
- 18 (45%) of the sample had monthly incomes ranging from Rs. 30,001-50,000.
- Out of the sample, 22 (55%) were unaware of Baby Bottle Tooth Decay.

B. Section B: The Finding Related to the Assessment of Knowledge Regarding Baby Bottle Tooth Decay.

- The majority of the sample (67.5%) had average knowledge, 27.5% had bad knowledge, and 5% had strong knowledge about Baby Bottle Tooth Decay.
- The mean level of knowledge is 11.42, with a median of 7, a maximum of 17, and a standard deviation of 2.7.

C. Section C: The Finding Related to the Assessment of Attitude Regarding Baby Bottle Tooth Decay.

- The majority of the sample (67.5%) was neutral, 12.5% had a positive attitude, and 20% had a negative attitude.
- The average attitude level is 24.45, with a median of 27 and a maximum of 36. The standard deviation is 42.1.

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D. Section D: The Finding Related to the Assessment of Practice Regarding Baby Bottle Tooth Decay.

- The majority of the sample (60%) had bad practice, 37.5% had acceptable practice, and 2.5% had good practice.
- The mean level of practice is 4.25, with a median of 15, a maximum of 8, and a standard deviation of 1.59.

E. Section E: Findings Related to Association Between Level of Knowledge, Attitude and Practice with Selected Demographic Variables Among Mothers of Admitted Children (1-3 Years of Age) Regarding Baby Bottle Tooth Decay.

- There was a significant association between knowledge and selected demographic variables, including age (chi square = (4.843), p value = (0.0278)), religion (chi square = (13.7924), p value = (0.0002)), number of children (chi square = (6.83), p value = (0.0090)], mother's educational qualification (chi square = (3.986), p value = (0.0459)), and source of information (chi square = (7.268), p value = (0.0070)] at $p < 0.05$ level of significance. As a result, the research hypothesis is accepted, while the null hypothesis is only partially accepted.
- The study found an association with attitude and some demographic variables, including religion (chi square = 4.8698, p value = 0.0273) and number of children (chi square = 7.548, p value = 0.0060). Regarding the source of information on Baby Bottle Tooth Decay, [(chi square = (6.277), p value = (0.0122)] at $p < 0.05$ level of significance. As a result, the research hypothesis is accepted, whereas the null hypothesis is rejected.
- There was a significant association between practice and selected demographic variables, including religion (chi square = 4.195, p = 0.0405), number of children (chi square = 4.805, p = 0.0284), education qualification (chi square = 5.102, p = 0.0239), and source of information (chi square = 9.285, p = 0.0023) at $p < 0.05$ level of significance. As a result, the research hypothesis is accepted, whereas the null hypothesis is rejected.

F. Section F: Findings Related to the Correlation Between the Knowledge and Practice Scores of Mothers of Admitted Children (1-3 Years of Age) in a Selected Hospital on Baby Bottle Tooth Decay.

- There is a negative correlation between the level of knowledge and practice of the mothers of admitted children in a hospital related to Baby Bottle Tooth Decay.
- Mean difference of mean values of the level of knowledge and attitude of the mother of admitted children is 7.17. The “r” value is -0.0778.

IV. SUMMARY

The present study was concluded with the aim to evaluate the knowledge, attitude, practice and co-relation of mothers of (1-3 years) regarding baby bottle tooth decay in a selected hospital of Delhi. Research approach used for present study was quantitative research approach and the design was descriptive survey design. A total of 40 samples were selected through purposive sampling technique. Tools used for the study were demographic variables of the sample, structure knowledge questionnaire to assess the knowledge, 5 points Likert scale for the assessment of attitude and checklist to assessed the expressed practice of mothers regarding baby bottle tooth decay. 7 days were taken to collect the data. 25-30 minutes were taken be each participant to fill the tool administered to them. Mothers generally had average knowledge, indifferent attitudes, and poor practices addressing BBTD. Structured awareness activities are required to strengthen preventive measures.

V. IMPLICATIONS

The findings of the study leave several implications of nursing practice, nursing education, nursing administration ad nursing research.

A. Nursing Administration

- Implement policies in hospitals and healthcare settings to promote oral health education and prevent baby bottle tooth decay in young children.

B. Nursing Education

- Educate mothers about the causes, prevention and impact of BBTD and encourage optimal practices for newborn oral hygiene.
- Nursing students should be educated on their role in promoting health and preventing disease to contribute to reaching the aim of universal health coverage.

C. Nursing Practice

- By interacting directly with moms and children, nurses can actively reduce baby bottle tooth decay. In clinical settings, they are able to screen hospitalized youngster for early tooth decay symptoms
- Providing tailored guidance on appropriate bottle-feeding techniques, dietary decisions, and the significance of routine dental checkups

D. Nursing Research

The study can inform future research on Baby Bottle Tooth Decay by examining its prevalence, identifying knowledge gaps, and assessing the effectiveness of current preventative methods for mothers. This could include gathering information on maternal education, socioeconomic position, and healthcare accessibility.

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RECOMMENDATIONS

- Larger sample sizes allow for similar studies
- Comparative studies between rural and urban populations can be conducted.
- Interventional studies can be evaluating the effect of health education on BBTD awareness.
- Encourage pediatric units to hold regular oral health check-up camps.

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