

# Evaluation of the Knowledge and Belief of Expectant Mothers in Their Last Trimester about Importance of Primary Teeth and Their Care

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## ABSTRACT

**Objective:** "An ounce of prevention is worth a pound of cure" can be applied in pediatric dentistry to reduce the risk of early childhood caries (ECC). Prevention can bring revolutionary change in field of ECC, especially by creating awareness among expectant mothers who play a role of primary caregivers in infant's oral health. The aim of this study is to evaluate the knowledge and belief of expectant mothers in third trimester about importance of primary teeth and their care.

**Materials and methods:** A total of 500 expectant mothers were randomly selected and questionnaire was prepared regarding their approach toward infant oral health care and role of primary teeth in their child's life.

**Results:** The results of the study indicated that expectant mothers had minimal knowledge about primary teeth and also the role of teeth. In spite of this poor knowledge, the results also revealed that most expectant mothers were also eager to know information regarding children's teeth.

**Conclusion:** Implementing educational awareness about primary teeth and their importance can bring change in mindset of expectant mothers, thus decreasing risk for ECC.

**Keywords:** Early childhood caries, Expectant mother, Infant oral health, Primary teeth.

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## INTRODUCTION

A child should be seen by a pediatric dentist, no matter how young that child is, if the parent thinks there could be a dental problem. No child is too young for good dental health.

—Dr Ross Wezmar

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Dental caries is the most prevalent infectious disease in children as reported by the Centers for Disease Control and Prevention.<sup>1</sup> More than 40% of children have nursing bottle caries by the time they reach kindergarten.<sup>2</sup> This disease affects the general population, but is 32 times more likely to occur in infants who are of low socioeconomic status, who consume a diet high in sugar, and whose mothers have a low education level.<sup>3,4</sup> Caries in deciduous teeth can affect children's growth and development, thereby slowly deteriorating the quality of life.

Mothers are a primary source of early education in children with regard to good hygiene and healthy nutritional practices.<sup>5</sup> Unfortunately, pregnant women, parents, and caregivers of infants often do not receive timely and accurate education about preventive oral and dental health care.<sup>6</sup> Thus, pediatric oral health care should begin ideally with prenatal oral health counselling for parents, especially mothers who usually spend more time with the children. Expecting mothers in their third trimester are more anxious and have concern for their infants; they are in right stage of understanding how her health would affect their infant's oral health. Vertical transmission of mutans streptococci (MS) from mother to infant is well documented.<sup>7-9</sup> Along with salivary levels of MS, mother's oral hygiene, periodontal disease, snack frequency, and socioeconomic status also are associated with infant colonization.<sup>10</sup> A revolutionary change in prevention of ECC can be seen if care providers, i.e., dentists, counsel expectant mothers about vertical transmission of microbes, development of baby bottle tooth decay, risk factors, and various other associated determinants.

In this study, we have aimed our target at third trimester expectant mothers to assess their knowledge and belief regarding importance of primary teeth and their care which was compared among rural and urban population. And the objective of this study was to enhance their knowledge about primary teeth and their care.

## MATERIALS AND METHODS

The study was conducted in accordance with Department of Gynaecology, Mahatma Gandhi Medical College and Hospital after taking ethical clearance from department

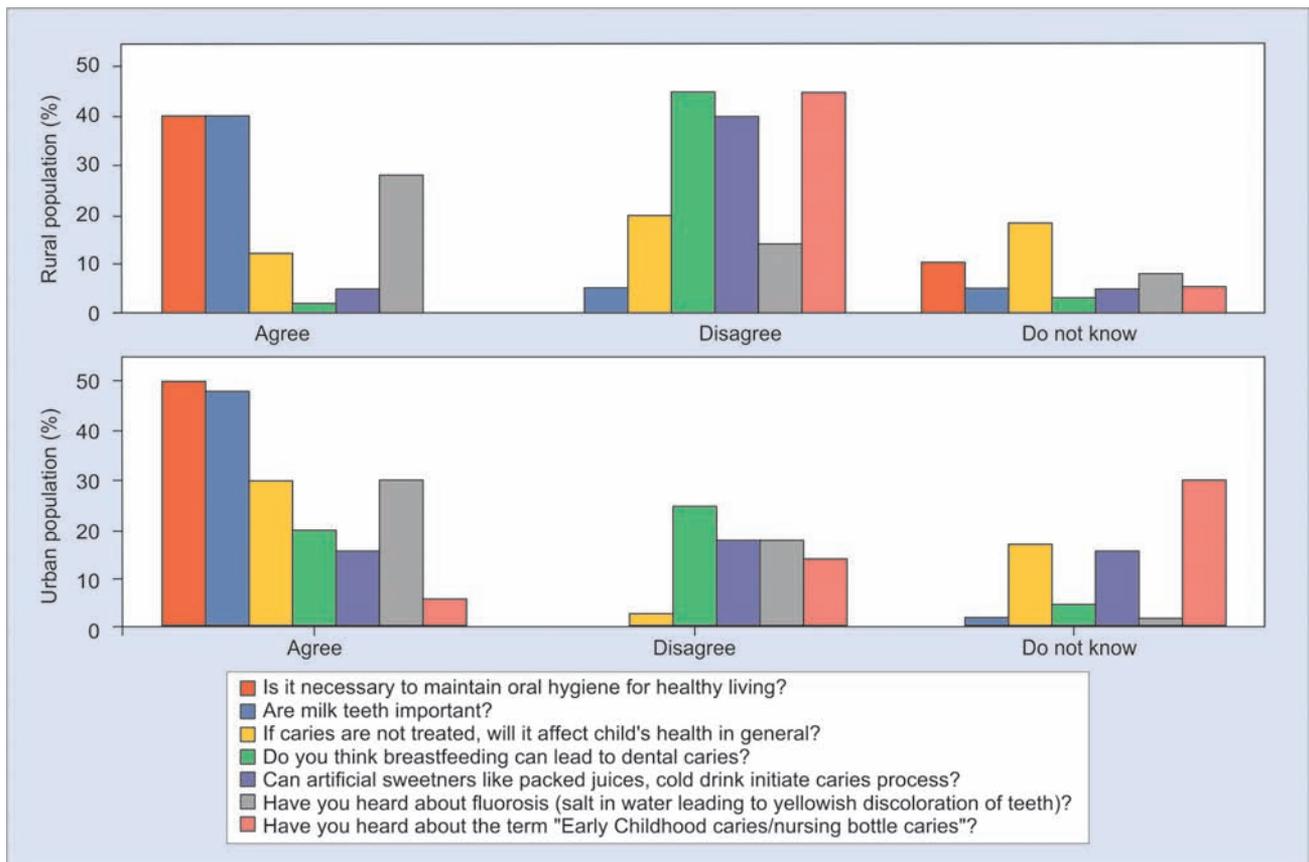
as well as the involved participants. Almost 500 expectant mothers in their last trimester were randomly selected for this study as part of one of inclusion criteria. Other inclusion criteria were age group between 20 and 35 years and willingness to participate. An anonymous structured questionnaire with oral instructions was given to participants and one of the investigators was present near them while they marked their answers. The participants were requested to return the questionnaire once they completed the survey.

The questionnaire was prepared keeping in mind to include the knowledge, attitude, and practice (KAP) scores and assess expectant mothers' belief and outlook on significance of primary teeth and their care (Table 1). The participants were divided into rural and urban based on their sociodemographic data. The questions were prepared in accordance with the literature.<sup>11,12</sup> Demographic data about age and residential area were evaluated. Then, questionnaire which was given was divided into three sections, i.e., assessment of KAP which contained 7, 6, and 5 questions respectively. The questions were available bilingually, i.e., in English and Hindi. Each participant was given oral hygiene instructions to be followed. The scores were calculated based on Likert rating scale, i.e., Agree (yes), Disagree (no), and Undecided (do not know). The data were analyzed using chi-square test.

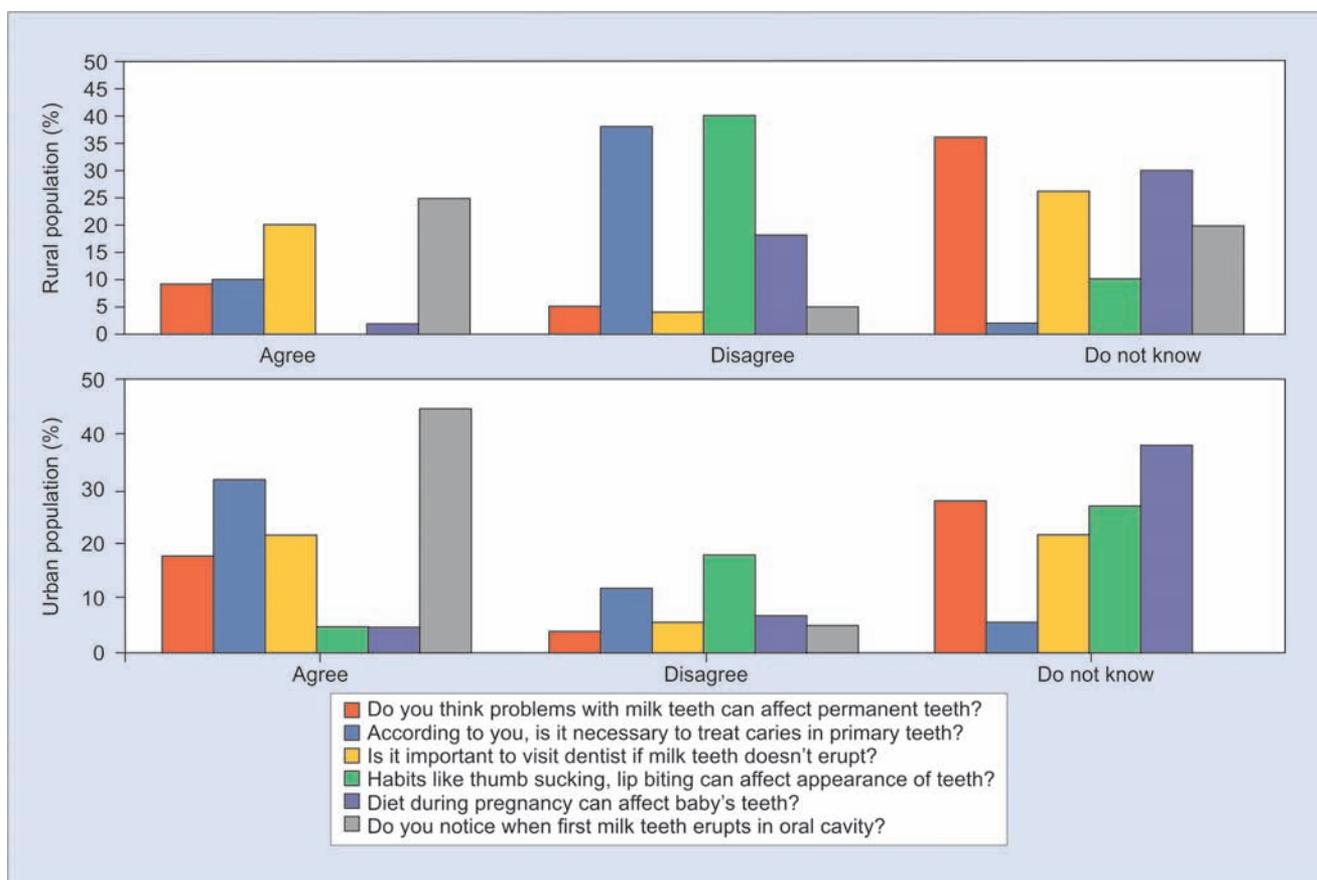
## RESULTS

The data were coded and entered into Microsoft Excel spreadsheet. Analysis was done using Statistical Package for the Social Sciences version 20 (IBM SPSS Statistics Inc., Chicago, Illinois, USA) Windows software program. Descriptive statistics included computation of percentages, means, and standard deviations. Level of significance was set at  $p \leq 0.05$ .

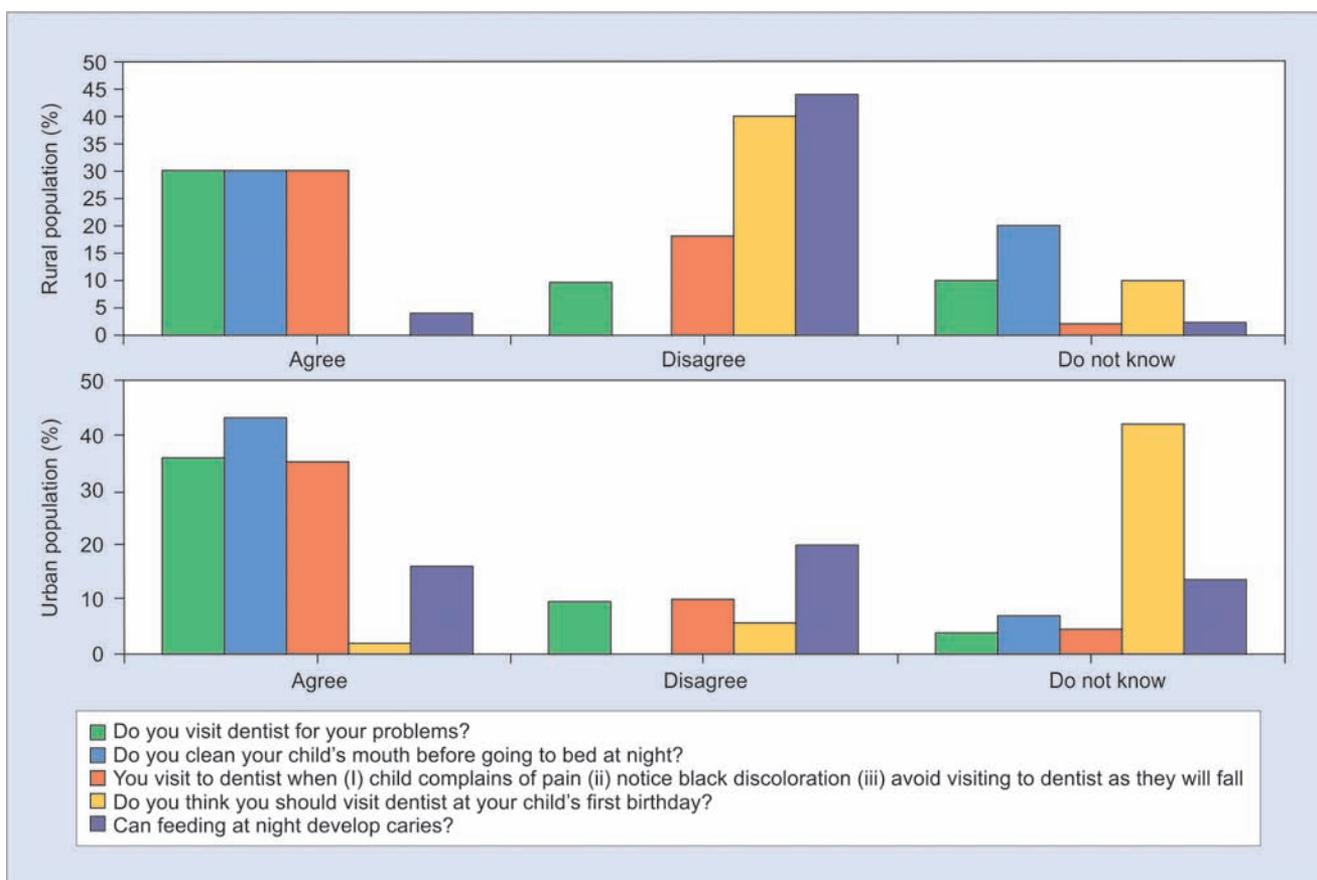
Majority of expectant mothers were young and were expecting their first child. Their willingness to accept the change about feeding practices and infant oral health care was more. Expectant mothers of both groups (95%) corresponded to the vital ingredient that oral hygiene was important for healthy living. However, rural expectant mothers believed that primary teeth were of scant significance (45%). They themselves feel hesitant to visit dentists for their own problems. Less than 10% mothers of rural area had idea about problems with primary teeth that can affect permanent teeth. Mothers of rural region believed that treatment of carious permanent teeth is less important than their counterpart (30%). Expectant mothers believed that oral hygiene practices are not so necessary in infants. They practiced feeding at night not realizing the fact that this can develop into ECC. More than 40% disagreed about caries developed because of feeding practices at night (Graphs 1 to 3).



Graph 1: Comparison of knowledge among rural and urban population



Graph 2: Comparison of attitude among rural and urban population



Graph 3: Comparison of practice among rural and urban population

**Table 1:** Knowledge, attitude, and practice of third trimester expectant mothers

Questionnaire	Agree	Disagree	Do not know
Is it necessary to maintain oral hygiene for healthy living?			
Are milk teeth important?			
If caries are not treated, will it affect child's health in general?			
Do you think breastfeeding can lead to dental caries?			
Can artificial sweeteners like packed juices, cold drink initiate caries process?			
Have you heard about fluorosis (salt in water leading to yellowish discoloration of teeth)?			
Have you heard about the term "Early Childhood Caries/Nursing bottle Caries"?			
Do you think problems with milk teeth can affect permanent teeth?			
According to you, is it necessary to treat caries in primary teeth?			
Is it important to visit a dentist if milk teeth does not erupt?			
Habits like thumb sucking, lip biting can affect appearance of teeth?			
Diet during pregnancy can affect baby's teeth?			
Do you notice when first milk teeth erupts in oral cavity?			
Do you visit dentist for your problems?			
Do you clean your child's mouth before going to bed at night?			
You visit dentist when			
a. child complains of pain			
b. notice black discoloration			
c. avoid visiting dentist as they will fall			
Do you think you should visit dentist at your child's first birthday?			
Can feeding at night develop caries?			

Questionnaire with individual response and percentage is given in the table along with the graphs.

## DISCUSSION

The present study was undertaken to assess the KAP followed by expectant mothers for their newborn infants. Tooth decay does not discriminate; it crosses all ethnic and cultural groupings, but is generally concentrated among disadvantaged population. Since parents and toddlers are not in control of their oral health, parental role is of utmost importance. Evidence gathered from both global and Indian studies shows that both pregnant mothers and parents/caregivers of infants have inadequate KAP regarding infant feeding, weaning, and bottle feeding practices and cleaning of the mouth.<sup>13</sup>

Our result was in accordance with studies done in past which quotes that lower socioeconomic status was correlated to a low dental KAP.<sup>14</sup> The study conducted by Thomas et al<sup>15</sup> revealed that 47.6% of the expectant mothers had poor knowledge and attitude toward infant's oral health and also followed poor oral hygiene practices. Although knowledge among urban mothers was more than that of rural mothers, they lacked in attitude and practice. Rural expectant mothers had poor KAP which can be attributed to reduced prevalence of electronic media, advertisement, books, and internet, etc. Feeding infant at night and transfer of bacteria from mother to infant while kissing and sharing cause harm to infant's teeth; this was a new concept for expectant mothers

in both populations. That dietary habits followed by pregnant mothers affect the microbial colonization of their infants was a surprising fact to them. The parents of children with ECC are frequently aware of the dietary practices associated with the development of the disease, but they may not implement changes in feeding behaviors.<sup>16</sup> Similarly, knowledge was evident in our study in urban population, but minimal steps for initiation and prevention were followed.

According to Mohebbi et al,<sup>17</sup> dental plaque was observed in 65 to 76% of children and clean teeth were found in children of mothers who themselves had higher toothbrushing frequency. They concluded that in order to improve oral hygiene, more emphasis should be placed on mothers' toothbrushing habits and their skills in their children's oral cleaning.

Women should be advised to optimize nutrition during the third trimester and the infant's first year, when enamel is undergoing maturation. Prevention of cariogenic feeding behaviors is one approach to preventing ECC.<sup>18</sup> The data obtained by this study displayed the urgent need to take measures in rural population and guiding them right from the beginning of their motherhood. Anticipatory guidance is necessary to start with to bring change.

## CONCLUSION

In-depth education about etiology and risk determinants of ECC would more likely bring about behavior change

in parents. The need to do this study was to assess the mindset of primary caregivers. We talk of advancement in various approaches to treat dental caries, but pay less attention to prevention. But with one little step forward, i.e., by creating awareness, imparting knowledge, and counseling of primary caregivers, the scenario of ECC can be reshaped and positive attitude can be instilled in expectant mothers.

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