

# Knowledge, Beliefs and Practices Associated with Teething Among Mothers in Mangalore Taluk, South India.

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## ABSTRACT

**Background:** To assess mother's knowledge and beliefs about teething signs and symptoms, to evaluate their experience during the teething of their youngest child and to assess the practices undertaken by mothers to relieve the teething symptoms.

**Methods:** Random number of anganwadis, 5 from the rural and 5 from the urban areas of Mangalore were selected. A cross sectional survey was conducted using a self administered questionnaire. The questionnaire form included three sections eliciting demographic characteristics and assessing parent's knowledge, and beliefs regarding teething of their youngest child.

**Result:** The majority of the respondents were in the age group of 28 – 37 years of age and had only primary level of education. Almost about 93% of the mothers knew that the tooth eruption starts around 6 – 7 months of age and the first tooth to erupt is the lower central incisors. About 85 % of the mothers said that the primary tooth eruption gets completed by 2 years of age. Almost 90 % parents attributed fever and diarrhea to teething. Almost 55 % of the parents consulted a doctor for fever and diarrhea.

There is no statistically significant difference between the rural and urban mothers about teething knowledge and its associated symptoms.

**Conclusion:** This study identified mother's conceptions about teething signs and symptoms. Health care providers must review and dispel long held cultural myths and beliefs about teething, acknowledge and share the evidence that tooth eruption is not strongly associated with significant symptoms.

**Keywords:** Teething, Mothers, Knowledge, Mangalore, South India

## Introduction

Teething is a physiological phenomenon which involves eruption of teeth in the oral cavity from its intra osseous position in the jaw<sup>1</sup>. Hippocrates proposed that children who have gone through painful teething period are likely to overcome other childhood diseases<sup>2</sup>. The relationship between the eruption of deciduous teeth and infants general health has been documented for more than 5000 years. A variety of physical disturbances have historically been attributed to teething; these includes pain, inflammation of the mucous membrane overlying the tooth, irritability, disturbed sleep, facial flushing, drooling, gum irritation, bowel upset, loss of appetite, and ear rubbing on the side of the erupting teeth<sup>3</sup>.

Tighe and Roe reported many systemic symptoms occurring concurrently with teething but concluded that evidence from the literature is not enough to state that teething is the potential cause of systemic symptoms<sup>4</sup>. However, Shapira et al, examined the gingival crevicular fluid (GCF) of children with teething and observed those cytokines in GCF that are related to fever, sleep disturbances gastro - intestinal disturbances and appetite disturbances. In

addition, tooth eruption can lead to intermittent localized discomfort in the area of erupting primary teeth, irritability, and excessive salivation<sup>5</sup>. Two studies that relied on the data from objective clinical examination observed teething to be associated with systemic symptoms like drooling, diarrhea, and fever in most of the children and these systemic manifestations were more prevalent during eruption of deciduous incisors<sup>6,7</sup>. Sood and Sood in their review have elucidated that systemic illnesses in children during teething occurs as the time frame for eruption of deciduous teeth corresponds to reduction in maternal humoral immunity<sup>8</sup>.

Historically, caregivers had a variety of approaches to the systemic relief of discomfort associated with which included teething, including blistering, placing leeches on the gums, applying cautery to the back of head and administering systemic medicaments, including many opiates and poisons such as lead acetate, mercury and bromide<sup>9</sup>. Rubbing substances onto the gums and allowing the infant to chew on hard objects have become popular practices. Chewing on clean, hard, cool objects, such as chilled teething rings, and rattles, cold wet washcloths and

chilled hard vegetables may provide relief from soreness<sup>2</sup>. When a child experiences extreme difficulty, the additional use of topical analgesics containing choline salicylate or lidocaine hydrochloride or powders containing benzocaine and paracetamol, may be helpful<sup>10</sup>.

Beliefs about the effect of teething on systemic health prevail in all communities, so much so that; teething has been listed frequently as a cause of death in Utah records<sup>11</sup>. Parents false beliefs about signs and symptoms associated with teething may interfere with prompt diagnosis and management of serious illnesses. Thus, there is a need to distinguish between facts and false beliefs associated with teething<sup>12</sup>. The present study intended to assess the knowledge about teething, evaluate experiences of the mothers during teething of their youngest child and practices undertaken by them to relieve teething symptoms.

### Objectives of the study

1. To assess mothers knowledge and beliefs about teething signs and symptoms.
2. To evaluate the experience of the mothers during the teething of their youngest child.
3. To assess the practices undertaken by mothers to relieve teething symptoms.

### Methodology

Sample size: 120 was fixed with a prevalence of 0.75 and the effect size of 0.1, power 80% and level of significance 5% and determined using software G \* power 3.1.1.

#### Inclusion criteria

1. Mothers who sent their child to anganwadis.
2. Mothers who are willing to fill the questionnaire form and participate in the study.

#### Exclusion criteria:

Mothers who are not willing to participate in the study.

Ethical clearance for the study was obtained from Yenepoya University Ethics Committee.

Random number of anganwadis, 5 from the rural and 5 from the urban areas of Mangalore was selected. A cross sectional survey was conducted using a self administered questionnaire (Questionnaire form: part 1, 2, 3) which was distributed to 120 mothers who were available on the day when the investigation was carried out. Informed consent was obtained from mothers who were willing to participate in the study. The questionnaire form included three sections eliciting demographic characteristics and assessing mother's knowledge, and beliefs regarding teething of their youngest child and the practices which they have undertaken to relieve the symptoms associated with teething.

### Results

The majority of the respondents were in the age group of 28 – 37 years of age (51.8 % rural and 48.1 % urban). Majority of the mothers (66.7 % rural and 33. 3 % urban) had only primary level of education (Table 1).

Almost about 93% of the mothers (48.2 % rural and 51.7 % urban) know that the tooth eruption starts around 6 – 7 months of age and the first tooth to erupt is the lower central incisors. About 85 % of the mothers (49.4 % rural and 50.5 % urban) said that the primary tooth eruption gets completed by 2 years of age. About 95 % (52.6% rural and 47.3 % urban) of the mothers know that the first teeth to appear in the mouth are the lower central incisors. There is no statistically significant difference between the rural and urban mothers about teething knowledge and their beliefs about the teething symptoms were almost same (Table 2, Figure 1 and 2).

Almost 90 % mothers (50.4 % rural and 49.5 % urban) attributed fever and diarrhea to teething and almost all mothers believed that delay in tooth eruption is not associated with any kind of systemic illness. Only 2 % mothers from the rural area believed that their child had running nose as the teething symptom (Table 3, Figure 3).

Almost 55 % (45.4 % rural and 54.5% urban) of the mothers consulted a doctor for fever and diarrhea and 49.5 % rural and 50.4 % urban mothers had given extra fluids to prevent from dehydration.

Only 3 % mothers from urban areas had applied topical analgesics to relieve pain and 5 % mothers from urban areas had given chilled object to bite to relieve symptoms (Table 4, Figure 4).

Sampling method: categorical variables were expressed in terms of counts (or percentages) and continuous variables were expressed in terms of mean or standard deviations. Chi square test was used to assess the relationship between the mother's age, education and family income with teething related knowledge, symptoms and pain relieving practices.

### Discussion

This study investigated about the local and systemic signs and symptoms associated with primary tooth eruption and also to assess whether there is any difference in knowledge and attributions about teething signs and symptoms among rural and urban mothers.

Both rural and urban mothers thought that teething was preceded by some symptoms; the most common being fever and diarrhea.

**Table 1: Demographic data.**

		Rural	Urban	N	%
Age group	18 - 27 years	15	16	31	25.83%
	28 - 37 years	28	26	54	45%
	38 - 47 years	23	12	35	29.17%
Education	Primary	72	36	108	90%
	Intermediate	2	6	8	6.67%
	University	0	4	4	3.33%
Number of Children	1 – 3	76	37	113	94.17%
	4 – 6	7	0	7	5.83%
Age of the youngest child	> 2 years	52	53	105	87.5%
	13 – 24 months	9	6	15	12.5%

**Table 2: Mothers knowledge of teething and symptoms experiences by their youngest child:**

	Agree		Disagree		Don't Know	
	Rural	Urban	Rural	Urban	Rural	Urban
'Baby teeth ' start to erupt around 6- 7 months of age	54	58	4	3	0	2
	112(93.33%)		7(5.83%)		2(1.67%)	
The first teeth to appear in the mouth are the lower central incisors	50	45	11	14	0	0
	95(79.17%)		25(20.83%)		0	
The eruption of teeth is complete at approximately 2 years of age	42	43	6	9	7	3
	85(70.83%)		15(12.50)		10(8.33%)	

**Table 3: Signs and symptoms:**

	N (%)		
	Rural	Urban	Total
Fever, desire to bite and diarrhea	58	57	115(95.83%)
Loss of appetite	2	1	3(2.50%)
Running nose	2	0	2(1.67%)

**Table 4:-Preventive practices undertaken by mothers to relieve teething problems:**

	Agree			Disagree			Don't Know		
	Rural	Urban	N %	Rural	Urban	N %	Rural	Urban	N %
Bite on chilled object	0	5	5(4.17%)	42	43	85(70.83%)	14	16	30(25%)
Bottle feeding at night	3	7	10(8.33%)	55	35	90(75.00%)	10	10	20(16.67%)
Given fluids	57	58	115(95.83%)	2	3	5(4.17%)	0	0	0
Consult doctor	25	30	55(45.83%)	35	20	55(45.83%)	6	4	10(8.33%)
Apply topical analgesics	0	3	3(2.50%)	53	52	105(87.50%)	5	7	12(10.00%)

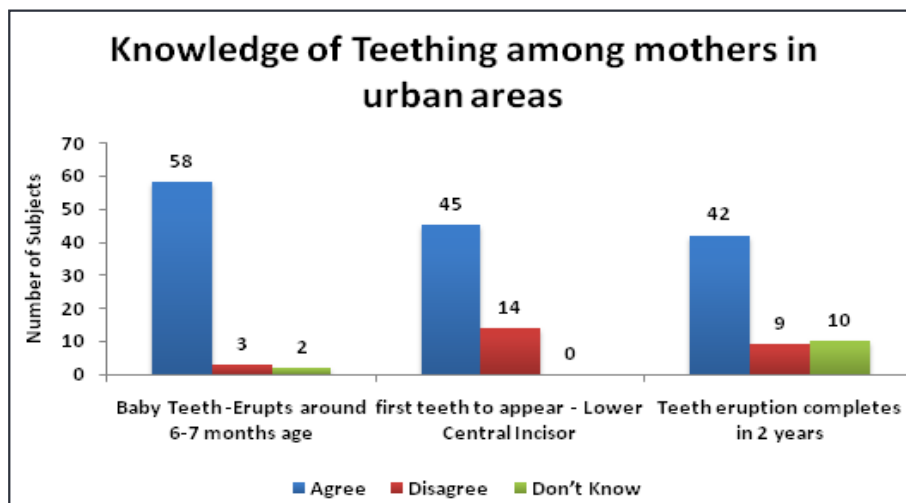


Fig. 1: knowledge of teething among mothers in urban areas.

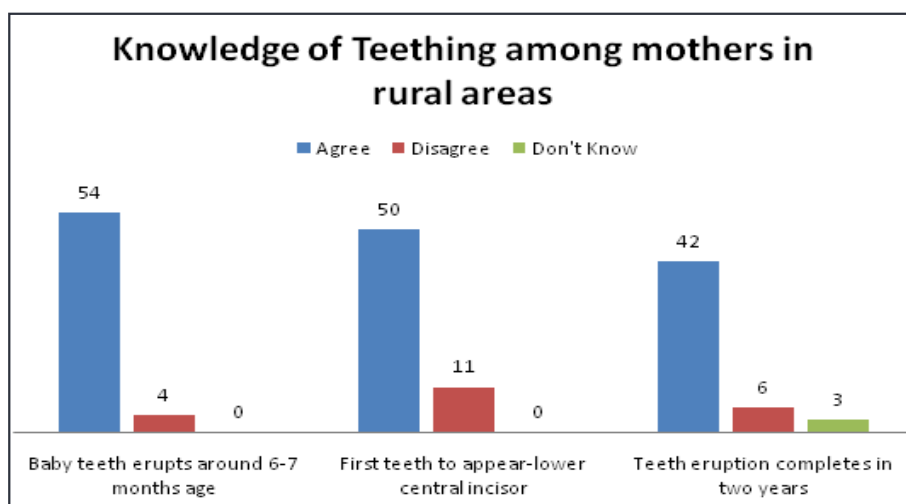


Fig. 2: Knowledge about teething among mothers in rural areas.

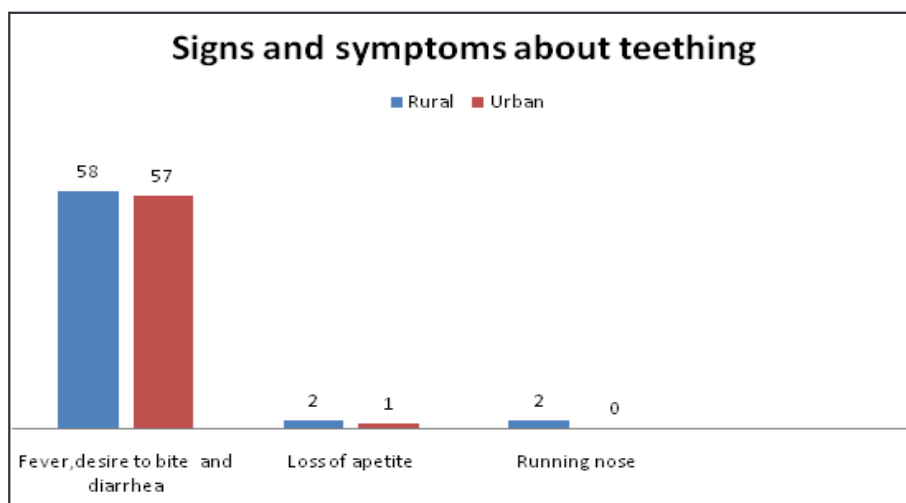


Fig. 3: Signs and symptoms about teething.

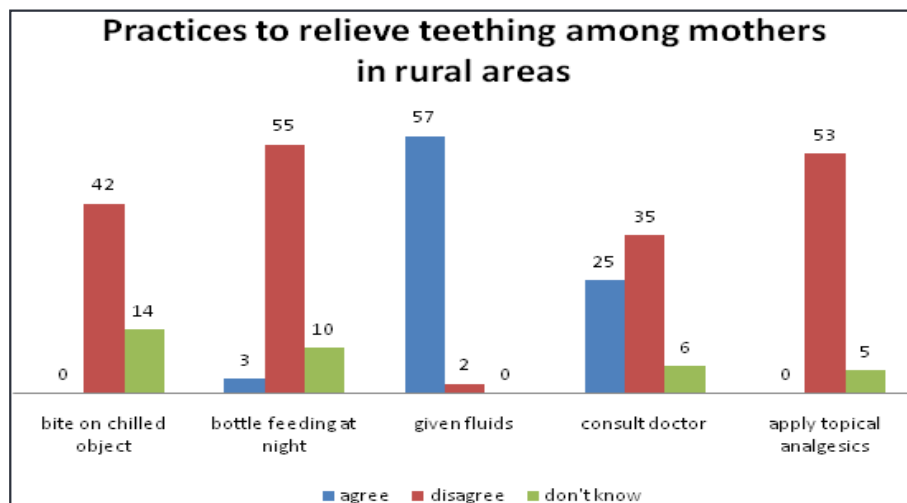
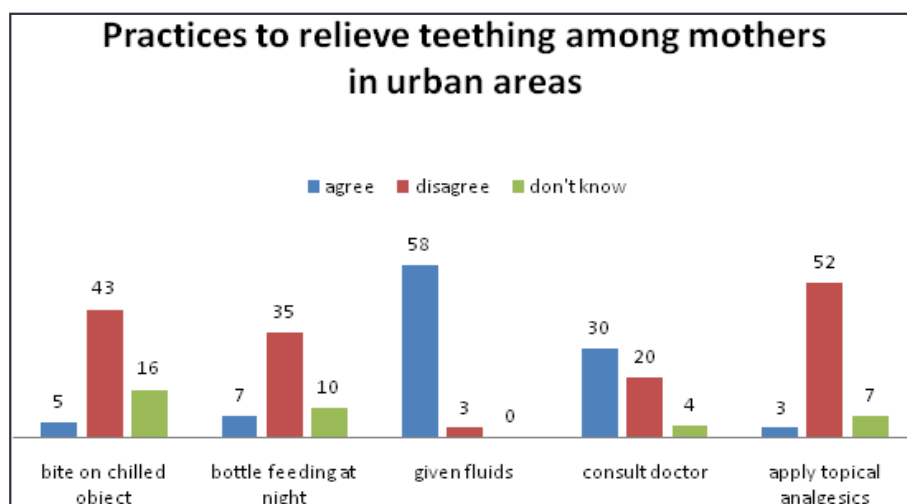


Fig. 4 : Practices undertaken by mothers to relieve symptoms associated with teething



The eruption of primary teeth has been thought to be associated with many behavioral and systemic symptoms. The period of time that tooth eruption occurs can be very frustrating and stressful for parents, especially when it happens to their first offspring<sup>13</sup>. Many parents do not know how to identify the signs of tooth eruption in their children and, therefore, do not feel confident to relieve the discomfort of the child<sup>14, 15</sup>.

Regarding the local signs and symptoms, the most common signs and symptoms noted were fever, desire to bite, running nose, loss of appetite and diarrhea. The timing of eruption of the primary teeth (6 months onward) coincides with the age when infants start to explore the environment. In this phase, the introduction of the hands and objects into the mouth is normal; this, in turn, can bring harmful microorganisms and cause infection<sup>16</sup>.

Despite the fact that there was an agreement about the presence of symptoms during the eruption of primary teeth, some authors totally objected to a cause-effect association between them<sup>17</sup>. It should be remembered that coincidentally, primary tooth eruption begins when infants lose maternal antibody protection against bacteria and viruses; making the baby more vulnerable to general threatening conditions as the newly pierced gingiva around an erupting tooth offers a convenient viral infection site<sup>18</sup>.

Multiple tooth eruptions may establish a stress condition, during which the resistance against infections is reduced and incidence of infectious diseases is increased. Bennet and Brudno suggest that fever during the process of primary tooth eruption is caused by the human teething virus (HT virus), which, at the beginning of life, is responsible for a primary infection that becomes subclinical. The HT

virus remains in a latent state in the alveolar crypt until its stimulation through eruptive movements, provoking fever as well as local signs and symptoms such as gingival inflammation, hemorrhage, and pain<sup>19</sup>.

The study was limited by the study sample; further research is needed on larger populations. On the basis of the results of this study, we arrived at the following conclusions: all mothers thought that there is an association between general objective signs (fever, and diarrhea) and the eruption of primary teeth with fever being the most prevalent sign. Health care professionals must take this in concern and should try to motivate and eradicate all the misconceptions prevailing about teething signs and symptoms.

## Conclusion

This study identified mothers conceptions about teething signs and symptoms. Health care providers must review and dispel long held cultural myths and beliefs about teething, acknowledge and share the evidence that tooth eruption is not strongly associated with significant symptoms, and begin to manage the issues of late infancy and toddlerhood more effectively.

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## Questionnaire form

{Kindly tick the most appropriate answer}

### Part (1): Demographic data:

#### -Age:

- 8-27 years ☐
- 28-37 years ☐
- 38-47 years ☐

#### -Education:

- Never been to school ☐
- Primary ☐
- Secondary ☐
- Intermediate ☐
- University ☐

#### -Number of children:

- 1-3 children ☐
- 4-6 children ☐
- >6 children ☐

#### -Age of the youngest child:

- Less than 6 months ☐
- 6 – 12 months ☐
- 13 – 24 months ☐
- >24 months ☐

**Part (2): Mother's knowledge of teething and symptoms experiences by their youngest child:**

- 'Baby teeth' start to erupt around 6-7 months of age:

Agree ☐  
 disagree ☐  
 don't know ☐

- The first teeth to appear in the mouth are the lower central incisors

Agree ☐  
 disagree ☐  
 don't know ☐

- The eruption of teeth is complete at approximately 2 years of age

Agree ☐  
 disagree ☐  
 don't know ☐

**Signs and symptoms believed by parents, to be caused by teething:**

-Fever ☐  
 -Diarrhea ☐  
 -Sleep disturbance ☐  
 -Loss of appetite ☐  
 -Gum irritation ☐  
 -Desire to bite ☐  
 -Increased salivation ☐  
 -Running nose ☐  
 -Vomiting ☐  
 -Ear problems ☐  
 -Increased susceptibility to other diseases ☐

**Part (3): Preventive practices undertaken by mothers to relieve teething problems:**

- Allowed the child to bite on a chilled object :

Agree ☐  
 disagree ☐  
 don't know ☐

- Allowed bottle feeding or nursing at night :

Agree ☐  
 disagree ☐  
 don't know ☐

- Used systemic analgesics :

Agree ☐  
 disagree ☐  
 don't know ☐

- Applied topical analgesics to rub the gums:

Agree ☐  
 disagree ☐  
 don't know ☐

- Given the child fluids to prevent dehydration:

Agree ☐  
 disagree ☐  
 don't know ☐

- Consulted the doctor:

Agree ☐  
 disagree ☐  
 don't know ☐

- Other practices:

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