

## Original Research

### Knowledge of the teething process and assessment of the relieving practices amongst mothers in Riyadh, Saudi Arabia

Haneen Alshukairi<sup>1</sup>, Farah Al Otaibi<sup>2</sup>, Raghad Al Garni<sup>3</sup>, Kholoud Al Rushidan<sup>4</sup>, Njoud Al Ameri<sup>5</sup>, Memonah Al Arajah<sup>6</sup>, Malak Al Ajmai<sup>7</sup>, Rawan AlKhalid<sup>8</sup>

<sup>1</sup>BDS, MSc, Preventive Dentistry Department, College of Dentistry, Riyadh Elm University, Riyadh, Kingdom of Saudi Arabia;

<sup>2,3,4,5,6,7,8</sup>General dentist, College of Dentistry, Riyadh Elm University, Riyadh, Kingdom of Saudi Arabia

#### ABSTRACT:

**Background:** Teething is the eruption of primary teeth from the intraosseous position in the jaws into the soft tissues of the oral cavity. It's a major life event that is concerning for caregivers around the world. This research is conducted to evaluate teething knowledge and relieving practices amongst mothers. **Methodology:** A randomized cross-sectional survey was distributed amongst 500 mothers in Riyadh, Saudi Arabia. The survey is designed to evaluate the knowledge of teething and the associated relieving practices. Collection of data took 3 months from January of 2019 to March 2019. **Results:** Majority of the participants agree that the first teeth to erupt in the mouth are the lower centrals (87%). Three quarter of the participants agree that first tooth to erupt is around 6 – 7 months of age (74.6%) and 61.8% agree that the eruption of teeth is completed approximately at 2 years of age. The majority agree they give fluids to prevent dehydration (88.4%). Three quarter allowed child to bite on cool objects (75.8%) and 73% applied topical analgesics on gums. Under two third allowed bottle nursing at night (64.6%) and over half used systemic analgesics (56%). **Conclusion:** According to our findings there needs to be better public dental health education that focuses on the teething process and the relieving remedies practiced.

**Key words:** teething, relieving practice, mothers, knowledge.

Received: 12 March, 2020

Accepted: 28 April, 2020

**Corresponding Author:** Dr. Haneen AlShukairi, BDS, MSc, Preventive Dentistry Department, College of Dentistry, Riyadh Elm University, Riyadh, Kingdom of Saudi Arabia

**This article may be cited as:** Alshukairi H, Otaibi FA, Garni RA, Rushidan KA, Ameri NA, Arajah MA, Ajmai MA, Khalid RA. Knowledge of the teething process and assessment of the relieving practices amongst mothers in Riyadh, Saudi Arabia. *J Adv Med Dent Scie Res* 2020;8(6):62-65.

#### INTRODUCTION:

The tooth eruption process, where the primary teeth move from their intraosseous position within the jaws into the oral cavity is also known as teething.<sup>1</sup> The first teeth to erupt would be the lower central incisors at about 6 – 7 months of age, and the eruption process is completed when the child is approximately 3 years old.<sup>2</sup> Parents have been concerned about the teething process of their children for decades strong. The eruption process and its relation to a child's general health has been a topic of controversy for more than 5000 years.<sup>3</sup> Historically; Hippocrates, Homer, Celsus and Aristotle have linked teething with severe illnesses. Hippocrates

associated teething with various systematic symptoms such as; fever, diarrhea and convulsions. In the 16<sup>th</sup> – 19<sup>th</sup> centuries teething has been regarded as the cause of weight loss, neuralgia, meningitis, tetanus, insanity and even death.<sup>4</sup> In France, for example, in the *Registrar General's Report* of 1842 teething was stated as the cause of death for 12% of the total deaths in children younger than 4 years old.<sup>5</sup> Historical management of teething includes blistering, placing leaches on gums, and applying cauter to the back of the head.<sup>6</sup> Systemic medicaments containing opiates, lead acetate and bromide have also been used to relief pain.<sup>7</sup> From a contemporary perspective teething remains a mystery.

In 2003, a study conducted by Shapira et al, examination of the gingival crevicular fluid (GCF) of teething children showed that the cytokines in the GCF are related to fever, sleep disturbances, and appetite loss.<sup>8</sup>

In another study conducted by Macknin et al, they found that congestion, stool looseness, cough, non-facial rashes, fever and vomiting are associated signs and symptoms of teething.<sup>4</sup> However, in 1975 the *British Medical Journal* editorial did not attribute fever, diarrhea, rashes and bronchitis to be associated with teething, and related those symptoms to other serious disorders.<sup>9</sup> Also, wake et al, could not relate most of teething symptoms to the tooth eruption process.<sup>10</sup> Finally, Tighe and Roe concluded that there is not enough evidence in the literature that supports teething to be the cause of any systemic symptoms.<sup>11</sup> Popular prevalent non-pharmacological remedies to relief pain include Chewing on chilled objects like teething rings and cool hard vegetables.<sup>12</sup> When local measures fail to provide, care givers usually seek pharmacological management using analgesics and antibiotic syrups. However, the use of pharmacological treatment should be limited to certain cases with careful monitoring.<sup>13</sup> Our objective of this study is to assess mother’s knowledge of the teething process and analyze the pain-relieving practices used.

**METHODOLOGY:**

A randomized cross-sectional survey questioner was distributed amongst 500 mothers in Riyadh, Saudi Arabia using a modified version of Nishana’s Knowledge, Beliefs and Practices Associated with Teething Survey Questionnaire.<sup>14</sup> The survey is designed to evaluate the knowledge of teething process and the associated relieving practice. Collection of data took 3 months from January of 2019 to march 2019. Inclusion criteria included 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. The research was approved by the Ethical Review Committee of REU and has received the Institutional Review Board.

**RESULTS:**

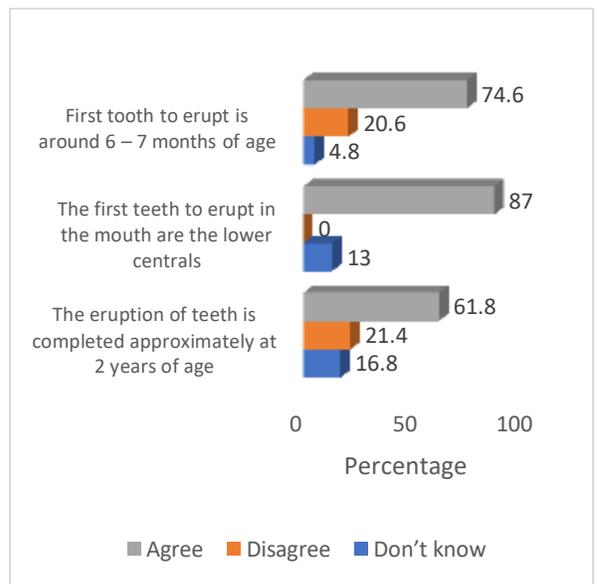
Of the total 500 participants, the majority were Saudi national (97%). One third (33.4%) were between 38 – 47 years old. Approximately two thirds (65.6%) reported university level education. Just over half (54.6%) reported that the age of their youngest child was >24 months. (See table 1). Personal variables were not significantly related to teething knowledge or practices.

**Table 1. Personal data of the participants**

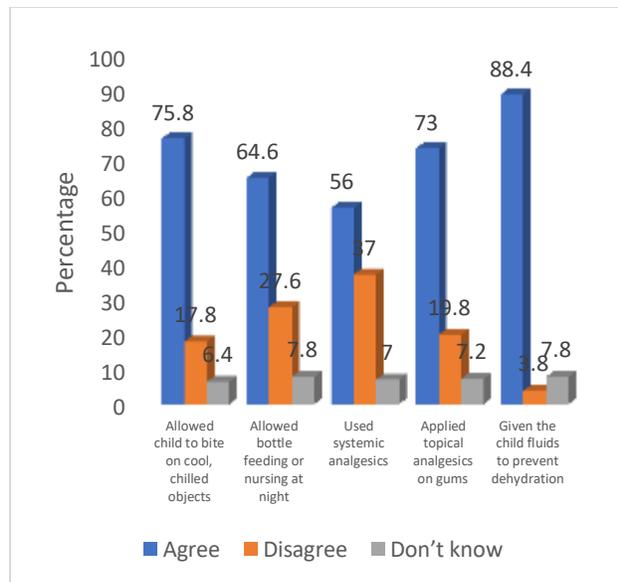
		Frequency	Percent
Nationality	Saudi	485	97.0
	Non-Saudi	15	3.0
Age (Years)	18 – 27	68	13.6
	28 – 37	145	29.0
	38 – 47	167	33.4
	> 47	120	24.0
Education	Primary	10	2.0
	Secondary	20	4.0
	Intermediate	142	28.4
	University	328	65.6
Number of children	1 – 3	220	44.0
	4 – 6	207	41.4
	> 6	73	14.6
Age of youngest child (Months)	< 6	71	14.2
	6 – 12	90	18.0
	13 – 24	66	13.2
	> 24	273	54.6

Almost (74.6%) of mothers know that the tooth eruption process starts at 6 – 7 months of age. Around (87%) of mother’s report that the first teeth to erupt in the oral cavity are the lower centrals, while (61.8%) agree that the teething process is completed at around 2 years of age. (See figure 1).

**Figure 1. Mother’s knowledge of teething process**



Approximately (75.8%) of mothers allow their child to bite on cool chilled objects. Almost (64.6%) permit bottle feeding or nursing at night. More than two thirds (73%) applied topical analgesics on gums and (56%) used systemic analgesics to relief pain, and finally, (88.4%) have given their child fluids to prevent dehydration. (See figure 2)



**Figure 2. Preventive practices undertaken by mothers to relieve symptoms**

**DISCUSSION:**

The present study is intended to evaluate the knowledge of the teething process, and analyzing the relieving pain practices undertaken by mothers. We chose mothers as they are largely involved in their child’s oral health care than fathers, according to a study conducted in Saudi Arabia.<sup>15</sup>

We find that almost three quarters of the participants agreed that eruption begins at around six to seven months. This finding falls relatively short comparing to a similar study conducted in Jazan, Saudi Arabia.<sup>16</sup>

When asked which teeth are the first to erupt in the oral cavity, the majority of the participants agreed that the first teeth to erupt in the mouth are the lower centrals. However, only 61.8% agreed that the process is completed at approximately two years of age, this result is low comparing to a study conducted in Mangalore Taluk, South India.<sup>14</sup>

Regarding the relieving practices, we find that (56%) of mothers gave their child systemic analgesics, in a study reported by Wake *et al.* it showed that 76% of parents used some form of medication, most commonly paracetamol (60%) to relief teething symptoms.<sup>17</sup> However, it is recommended that administration of paracetamol should be under a doctor’s prescription to avoid under doses of paracetamol as it is ineffective for a teething child, or overdosing which may lead to severe hepatocellular necrosis and renal tubular necrosis.<sup>18</sup>

We also find that approximately three quarter (75.8%) of mothers are allowing the child to bite on cool chilled object to manage pain. This does work as a temporary remedy as the cold temperature of the object causes localized vasoconstriction, which reduces inflammation.

Parents are advised to use clean none-harmful methods such as frozen fresh fruits and vegetables.<sup>3</sup>

Although the use of topical anesthetics is discouraged by AAPD<sup>19</sup>, we find that (73%) of mother’s use teething gels to relief pain. This topic has always been controversial. In (1979) Paynter and Alexander reported an unfortunate case of an infant’s overdose where the mother willingly applied 3 tubes (2,610 mg) of a salicylate-containing teething gel, thinking that she could go no wrong by just using a gel.<sup>20</sup>

It is alarming to find that (64.6%) allowed bottle feeding or nursing at night time. Mothers should be advised to avoid this practice as allowing bottle feeding or nursing at night time has no pain-relieving effect and is associated with early childhood caries.<sup>21,22</sup>

**CONCLUSION:**

These finding are discouraging when evaluating the knowledge of the teething process and the associated relieving practices amongst mothers in Riyadh. However, the results of the current study cannot be generalized to the whole population. We highly encourage thorough educational interventions and better public health care programs to increase awareness directed towards caregivers in the area.

**REFERENCES:**

1. Cunha RF, Pugliesi DM, Garcia LD, Murata SS. Systemic and local teething disturbances: prevalence in a clinic for infants. *J Dent Child (Chic)* 71: 24-26, 2004.
2. Jones M. Teething in children and the alleviation of symptoms. *J Fam Health care* 2002; 12 (1): 12- 13
3. McIntyre GT, McIntyre GM. Teething troubles? *Br Dent J.* 2002 Mar 9;192(5):251-5.
4. Macknin M L, Piedmonte M, Jacobs J, Skibinski C. Symptoms associated with infant teething: A prospective study. *Pediatrics* 2000; 105: 747-752.
5. King D L. Teething revisited. *Pediatr Dent* 1994; 16: 179-182.
6. Scultet J. *L’Arçenal de Chirurgie.* p11. Paris, 1675.
7. Seward M H. The treatment of teething in infants: A review. *Br Dent J* 1972; 132: 33-36.
8. Shapira J, Berenstein – Ajzman G, Engelhard D, Cahan S, Kalickman I, Barak V. Cytokine levels in gingival crevicular uid of erupting primary teeth correlated with systemic disturbances accompanying teething. *Pediatr Dent* 25: 44- 448, 2003.
9. Editorial. Teething myths. *Br Med J* 1975; 4: 604.
10. Wake M, Hesketh K, Lucas J. Teething and tooth eruption in infants: A cohort study. *Pediatrics* 2000; 106: 1374-1379.
11. Tighe M, Roe MF. Does a teething child need serious illnesses excluding ? *Arch Dis Child* 92:266-268,2007.
12. Ashley MP. It’s only teething...a report of the myths and mod- ern approaches to teething. *Br Dent J.* 2001 Jul 14;191(1):4-8.
13. Wilson PH, Mason C. The trouble with teething— misdiagnosis and misuse of a topical medicament. *Int J Peadiatr Dent.* 2002 May; 12(3):215-8.

14. Nishana E, Sham S Bhat, Sundeep K Hegde, Ajay Rao H T and Vidya S Bhat. (2018). Knowledge, Beliefs and Practices Associated with Teething Among Mothers in Mangalore Taluk, South India. *Annals of Oral Health and Dental Research*, 2(2), A21-A27. DOI: 10.21276/AOHDR.1872
15. Pani SC, Badea L, Mirza S, Elbaage N. Differences in perceptions of early childhood oral health-related quality of life between fathers and mothers in Saudi Arabia. *Int J Paediatr Dent* 22: 244-249, 2012.
16. Kumar S, Tadakamadla J, Idris A, et al. Knowledge of Teething and Prevalence of Teething Myths in Mothers of Saudi Arabia. *J Clin Pediatr Dent*. 2016;40(1):44-8.
17. Wake M, Hesketh K, Allen M. Parent beliefs about infant teething: a survey of Australian parents. *J Paediatr Child Health*. 1999 Oct;35(5):446-9.
18. Dental Practitioners' Formulary 2000-2002. British Dental Association, London.
19. American Academy of Pediatric Dentistry. Clinical Affairs Committee--Infant Oral Health Subcommittee. Guideline on infant oral health care. *Pediatr Dent* 34: 148-152, 2012.
20. Paynter A S, Alexander F W. Salicylate intoxication caused by teething ointment. *Lancet* 1979; 2: 1132.
21. Azevedo TD, Bezerra AC, de Toledo OA. Feeding habits and severe early childhood caries in Brazilian preschool children. *Pediatr Dent* 27: 28-33, 2005.
22. Mohebbi SZ, Virtanen JI, Vahid-Golpayegani M, Vehkalahti MM. Feeding habits as determinants of early childhood caries in a population where prolonged breastfeeding is the norm. *Community Dent Oral Epidemiol* 36: 363-369, 2008.