

Prevalence, Awareness and Informative Study Regarding Teething and Teether Among Parents

¹Dr. Tarasha Gupta, Department of Pediatric and Preventive Dentistry, Manav Rachna Dental College, FDS, MRIIRS, Faridabad, Haryana, Delhi NCR, India

²Dr. Shreya Gupta, Department of Pediatric and Preventive Dentistry, Manav Rachna Dental College, FDS, MRIIRS, Faridabad, Haryana, Delhi NCR, India

³Dr. Tanya Garg, Department of Pediatric and Preventive Dentistry, Manav Rachna Dental College, FDS, MRIIRS, Faridabad, Haryana, Delhi NCR, India

⁴Dr. Naresh Sharma, Professor, Department of Pediatric and Preventive Dentistry, Santosh Dental College, Ghaziabad, Uttar Pradesh, Delhi NCR, India

⁵Dr Sangeeta Sharma, Senior Consultant, Obstetrics & Gynaecology, Felix Hospital, Noida, Delhi NCR, India

Corresponding Author: Dr. Naresh Sharma, Professor, Department of Pediatric and Preventive Dentistry, Santosh Dental College, Ghaziabad, Uttar Pradesh, Delhi NCR, India

Citation of this Article: Dr. Tarasha Gupta, Dr. Shreya Gupta, Dr. Tanya Garg, Dr. Naresh Sharma, Dr Sangeeta Sharma, “Prevalence, Awareness and Informative Study Regarding Teething and Teether Among Parents”, IJDSIR- July - 2023, Volume – 6, Issue - 4, P. No. 109 – 117.

Copyright: © 2023, Dr. Naresh Sharma, et al. This is an open access journal and article distributed under the terms of the creative common’s attribution non-commercial License. Which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given, and the new creations are licensed under the identical terms.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Introduction

Teething is the process when milk teeth move & breakthrough the baby’s gums. The appearance of an infant’s first tooth is considered by parents as one of the series of significant developmental landmarks. Anecdotally, however, this period of teething process in infant can be difficult & distressing for both parents & child.

The paradox of teething is, atleast, in part historical even though many unexplained teething myths continue to prevail. Throughout history, teething has been held accountable for wide range & variety of childhood illnesses.

There are many references to teething issues & difficulties in the Homeric hymns from around 1200BC and in prayers of early Indian literature around 1000 BC. In the fourth century BC, Hippocrates wrote a short disquisition, “On Dentition”, ‘Teething children suffer from itching of the gums, fevers, convulsions and diarrhea, especially when they cut their eye, teeth and when they are very corpulent and costive’. (25th Aphorism, 3rd book.) He also noticed that more challenging the teething period was for the child, the better the child would come through it eventually. This might have been in relation to the theory of the survival of the fittest in which if child strong enough to survive

the pain of teething process and all the symptoms & change in occurring at that age, along with dietary changes, was more likely to overcome the normal traumas of childhood.^A

In medieval times, animal products & substances were still being recommended & use to rub on the gums and teething infants were prompted to chew on hard things like roots. In 1429, Von Louffenberg, a German priest, explained the care of a teething baby saying that, during teething process, gums should be rubbed with chicken's fat, brain from hare. In 1545, Thomas Phaire, an English physician, advised an ointment consisting of 'oil of roses and juice of nightshade'. His recommended charm was, 'The fyrst cast tooth of a colt set in silver and bone, or red coralle Ilyke manner hanged about the neck, whereupon the chylde should oftentimes labour his gums'.^B

Ambriose Pare (1517–1592), the French army surgeon, began to advocate a new elucidation to the age old problem of 'breeding teeth': which was cutting the gums with a lancet. He discovered this method in 1575, upon the examination of a dead child.

The therapies of Eighteenth and nineteenth century varied and were dependent on local superstition, myths as well as the beliefs of the attending physician. Various doses of mercury salts, opiates, purgatives and emetics were advocated, even if the child was experiencing diarrhea or vomiting previously. With modern knowledge and understanding of diseases, it is more likely that dehydration was mainly responsible for many of the signs, symptoms and deaths that were associated with teething. Leeches were also recommended to be applied to the mastoid area or directly to the gums. However, leeching was not as popular as other methods like lancing.

In 1668, Francois Mauriceau, a French male midwife, advocated that the procedure, 'Be done with a lancet rather than a knife, although a thin groat [a small coin] is as good or better than either'. Mauriceau questioned the effectiveness of charms, albeit he believed that the silver coral stick was effective only because of its hard smoothness that soothed the child's gums.^B

In 1742, Hurlock wrote his treatise 'Upon Dentition'. He stated that many more children died due to teething than was generally believed. According to his view, many of the deaths were from convulsions that were also a result of teething. Hurlock encouraged the lancing of gums to prevent these deaths. Hunter stated 'would lance a baby's gums up to ten times'. He recommended gum lancing for every childhood disease or ailment, irrespective of whether the tooth was present or not.^A

The belief in lancing the gums was predominantly and widely held by both the medical profession as well as the public. In 1850, Condie, in his book Diseases of Children, reported: 'A curious case is related by M. Robert, in his treatise on the Principal Objects of Medicine, of one of the effects of difficult dentition, as of the division of the gum. A child, having suffered greatly from difficult dentition, apparently died and was laid out for internment. M. Lemonnier was desirous of ascertaining the condition of the alveola. He accordingly made a free incision through the gums but on preparing to pursue further his examination, he perceived the child to open his eyes and give other indications of life. He immediately called for assistance; the shroud was removed from the body and by careful and persevering attention, the child's life was saved. In due time the teeth made their appearance and the child's health was fully restored.'^B

It was believed that the hardships & challenges experienced by an erupting tooth whilst penetrating

gingival tissue affected trigeminal nerve endings. A 'reflex stimulation' of other nerves ensued, causing 'functional derangements' and diseases in other systems of body. Lancing over an erupting tooth was preferred to allow bleeding which lead to release of tissue pressure that was causing reflex stimulation of the trigeminal nerve. This theory of reflex stimulation was recapitulated as late as 1954.

in 1896, Dr S. W. Foster, also in Dental Cosmos, explained, 'The teething child becomes wakeful, restless and fretful, refuses nourishment; the alimentary canal becomes more active, diarrhea follows and if relief is not given, relaxation of the vital forces follows and we have nausea, vomiting, convulsions, paralysis and not infrequently, death'.^B He observed that more deaths occur during teething period than in any similar period during the human lifespan and concluded that teething may be the leading cause of death in population.

Over the centuries, an extensive folklore has been built up around teething & its complication. In 1900, Dr. W. C. Barrett addressed the First District Dental Society of New York. His paper was called The Slaughter of the Innocents and attacked the hypocrisy of his colleagues. "The child is teething", is the vague explanation given to many an anxious mother by practitioners who are either incompetent to form a complete diagnosis, or too indolent and careless to seek for the hidden springs of disease... "Only teething". To how many promising young existences in which were centered the hopes, the ambitions, the heart affections of a family circle, have these words sounded the knell. "Only teething", and the fond parents looked with but little alarm upon the symptoms of the gravest character.^A

With increasing understanding and exploration of medicine and diseases, there came a gradual but recognizable change in the belief and values of public as

well as practice of the dental profession. As seen nowadays, parents as well dentists are more aware of their role in teething period of infant and actively participate in it to ensure the health and safety of the infant.

Signs and Symptoms of Teething

It is now generally known & accepted that eruption of primary tooth is accompanied by some relatively minor & rarely major signs & symptoms. They can be systemic as well as local signs & symptoms.

Macknin et al, identified several symptoms to be associated with teething like general irritability, diarrhea, disturbed sleep, gum inflammation, loss of appetite, drooling, intraoral ulcers, fever, gum rubbing, wakefulness, sucking, circumoral rash & ear rubbing.^E

Epidemiological studies have reported different prevalence of disturbances during primary tooth eruption, ranging from 68% according to Noor-Mohammd & Basha to 95% according to Cunha et al.

Although teething may cause issue for infants, there is controversy regarding the direct relationship between tooth eruption & systemic symptoms. Some studies have failed to find any kind of casual relationship between teething & symptoms such as fever, diarrhea, rashes & infection; while other research reported that parents & health care personnel do conclude some association.

Carpenter found that in 120 subjects, during eruption of anterior teeth, only 39% show one of the various symptoms (fever, vomiting, diarrhea, drooling, irritability, facial rashes, etc.) & 78% showed the symptoms in case of eruption of posterior teeth. He also observed that the signs & symptoms disappeared on either the day of or day after eruption of the tooth.^B

Signs and Symptoms of Teething^B

- Pain
- Inflammation of mucous membrane overlying the tooth (possibly with small hemorrhages)
- General irritability/ malaise
- Disturbed sleep/ wakefulness
- Facial flushing/ circumoral rash
- Drooling/ sialorrhea
- Gum rubbing/ biting/ suckling
- Bowel upset (ranging from constipation to loose stools to diahorrea)
- Loss of appetite/ alteration in volume of fluid intake
- Ear rubbing on the same side as the erupting tooth.

Teethers

During teething process, children experience various signs and symptoms like irritated gums, gnawing and many more symptoms.^G So as to make them smoothly glide through this phase, parents prefer non-pharmacological remedies such as teethers, pacifiers, fresh frozen fruits and vegetables.^F A pacifier is made up of nipple, shield and ring so that an infant can suck it as non-nutritive sucking is a natural reflex from birth thus making him or her more calm and stay asleep longer. Teethers are chewing toys which are available in various shapes, sizes, colour and material. When an infant chew a Teether, parasympathetic branch of autonomic nervous system (ANS) elicit a calming process allowing him or her to rebalance vital functions.^F Teethers that are in the market are made up of various materials such as solid plastic, gel - filled, latex, silicon and wooden. Parents should be careful while buying them. Plastic teethers and gel-filled teethers are absolute no, as chemicals such as parabens as well as Bisphenol-A are found which are harmful to their health.^K These are endocrine disrupters BHB which may disrupt the hormonal balance of the

body leading to various issues.^{H J} Latex teethers have rubber and may cause latex allergy and also while sterilizing, extra heat may damage the product. Silicone teethers are more popular than these as no harmful chemicals are present. These have low chemical reactivity and have excellent moisture and heat resistance. Wooden teethers are recommended as these are non- toxic, more sustainable and durable. These have antimicrobial properties and generally made of beechwood.^I However, parents should keep in their mind to sterilize the teethers before and after every use and stop their usage once primary teeth start erupting otherwise these may interfere in their path of eruption.

Method

A Cross-sectional descriptive study design was used with convenience sampling technique. Parents and guardians of the children of age group 2-14 years were approached at the Outpatient Department (OPD) of Pediatric and Preventive Dentistry, Manav Rachna Dental College, FDS, MRIIRS, Faridabad, Haryana and Delhi-NCR. A structured questionnaire was used for data collection. The data was then compiled and organized in form of charts and graphs.

Study Period: - Data was collected from 3rd January - 31st January, 2023

Study Design: - Cross-sectional descriptive type of study design was used.

Sample population: - All the parents and guardians who visited MRDC's Pediatric OPD from 3rd January to 31st January, 2023.

Sample size and sampling technique: - Convenience sampling technique was used. Working days of the month from 3rd January - 31st January 2023 were randomly selected. All the parents and guardians who accompanied their child at the OPD, who consented

were interviewed for the same. A total of 58 responses were recorded for the study.

Results

Figure 1: Current Age of Child

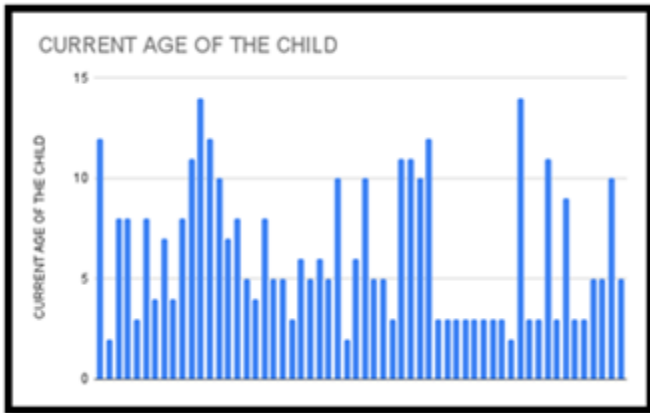


Figure 2: Eruption of The First Milk Tooth In Oral Cavity

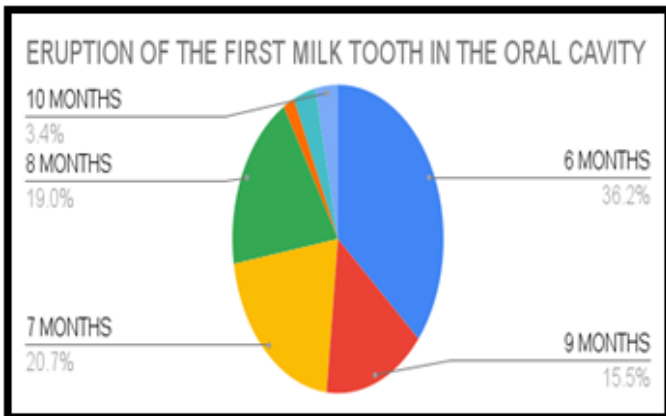


Figure 3 : Symptoms Shown By Child During Teething

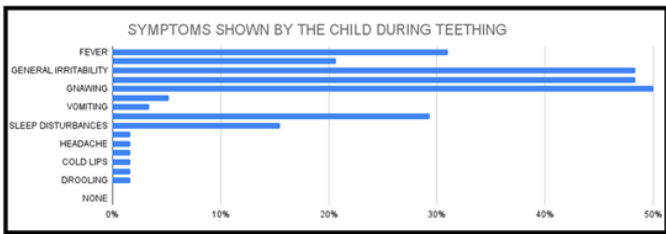


Figure 4: Duration For Which Symptoms Lasted If Appeared

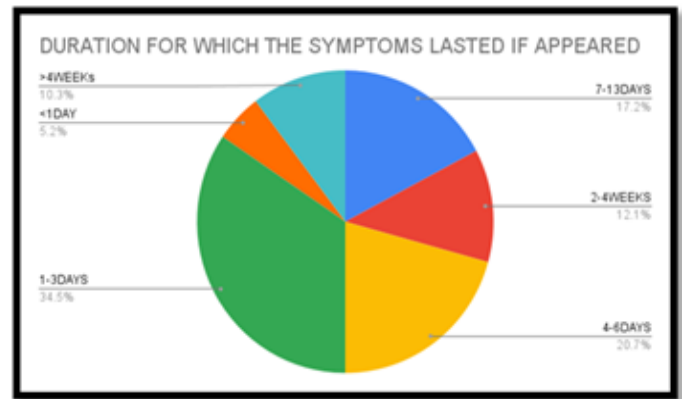


Figure 5: In Age Group, Child Was Difficult To Handle

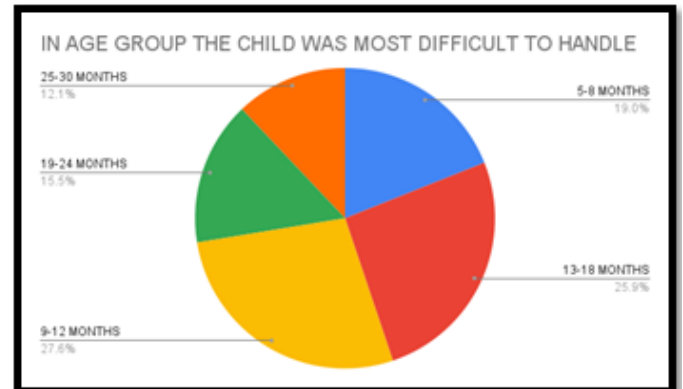


Figure 6: No. of Parents Who Did Something To Relieve Symptoms

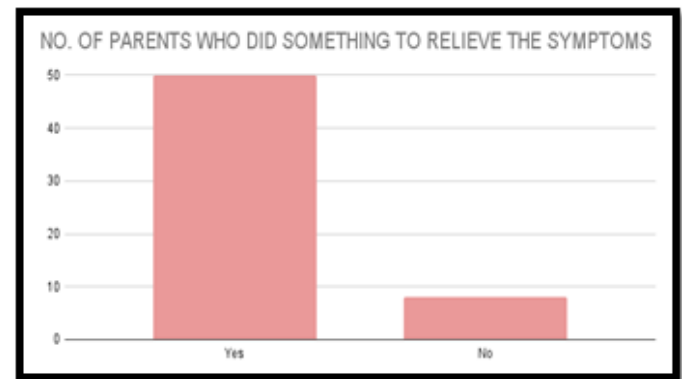


Figure 7 : No. of Parents Visited Dentist To Relieve Those Symptoms

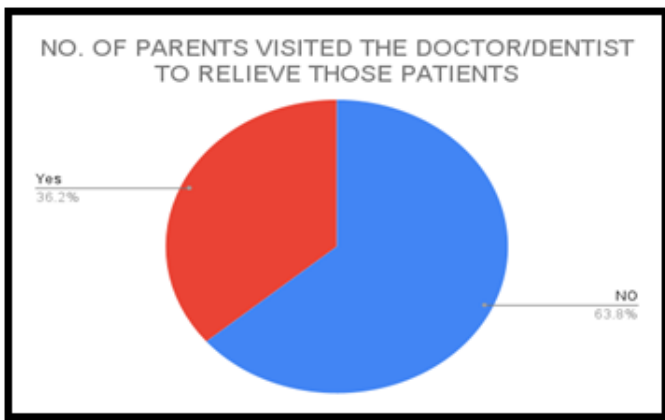


Figure 8 : If Visited, Recommendations By Dentist

Figure 11: Types of Teething Rings Used

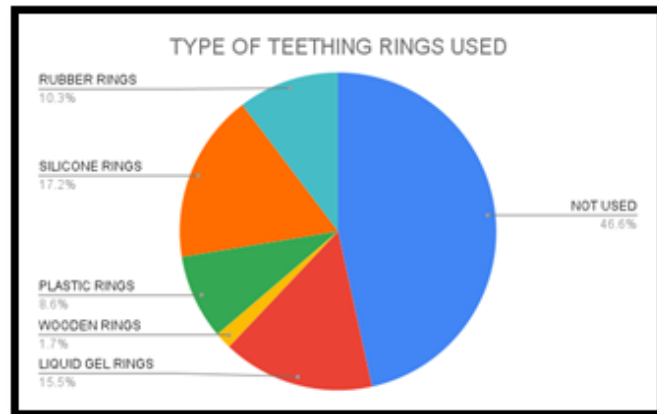


Figure 12 : Awareness About Harmful Contents In Teething Rings Among Those Who Used

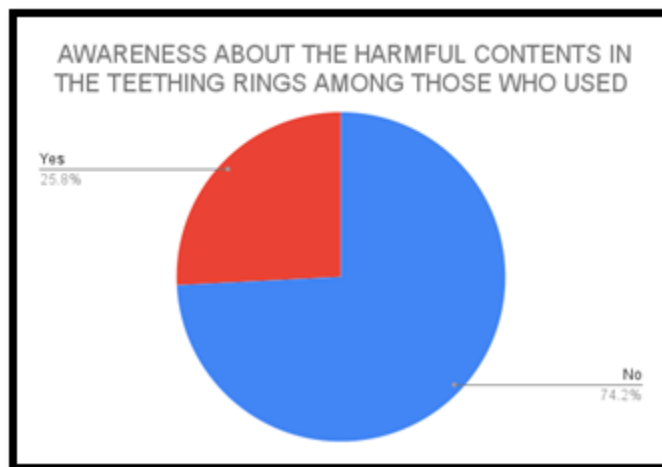


Figure 13: No. Of Parents Cleaned Teethers After Every Use

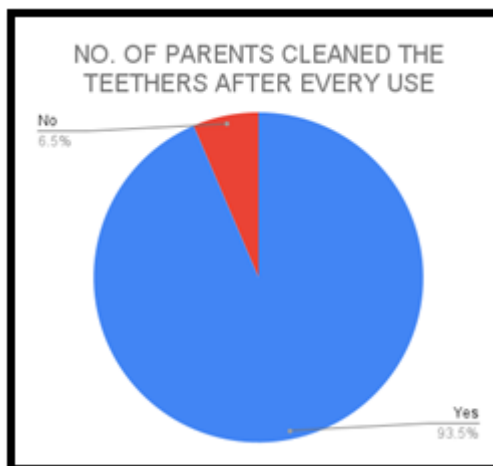


Figure 14 Awareness About Wooden Teething Rings

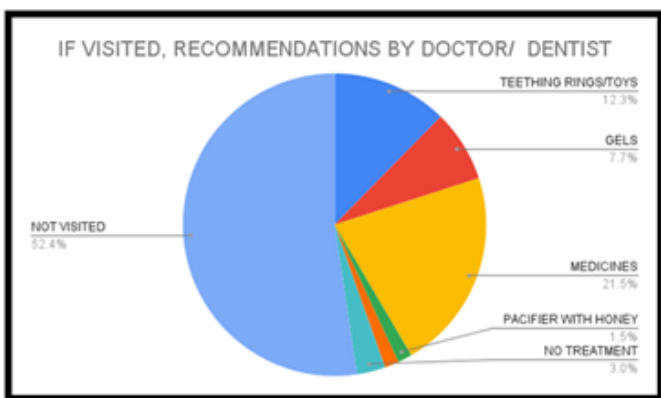


Figure 9: If Not Visited, Measures Taken By Parents To Relieve Those Symptoms

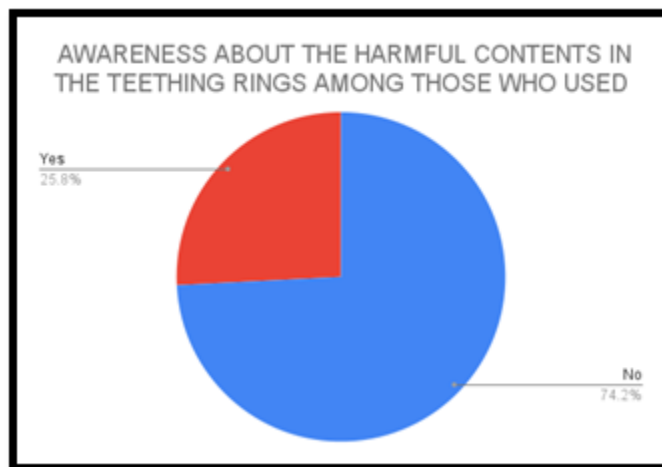


Figure 13: No. Of Parents Cleaned Teethers After Every Use

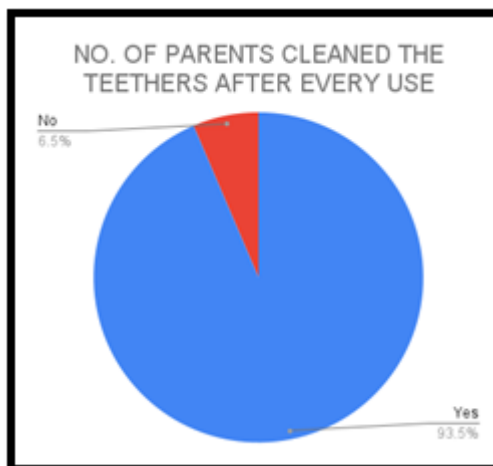


Figure 14 Awareness About Wooden Teething Rings

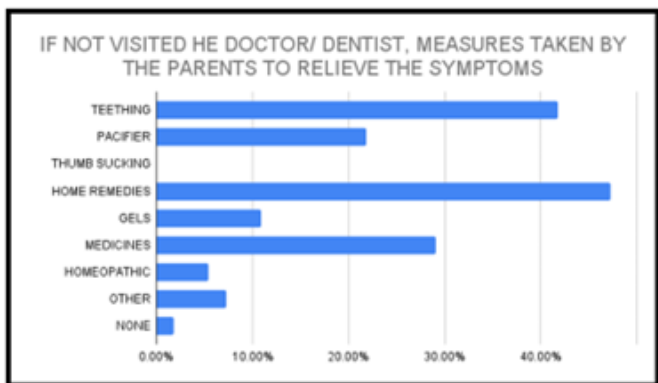
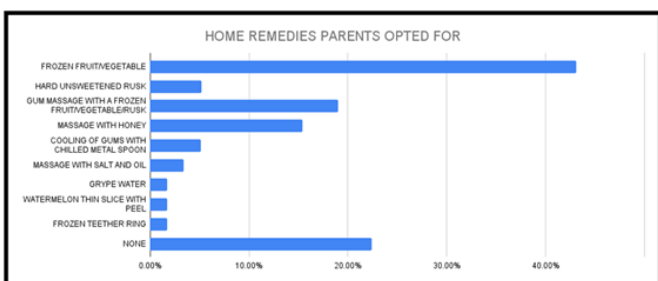


Figure 10: Home Remedies Opted For



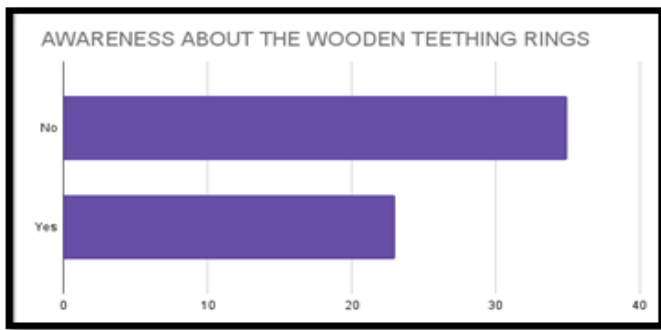


Figure 15: Reasons That Make Wooden Teething Rings Better

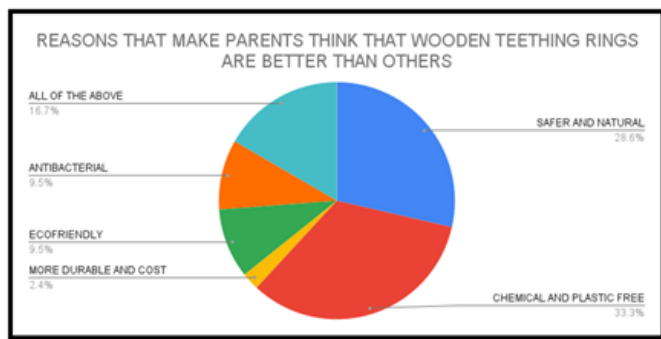


Figure 16: Most Effective Method For Teething

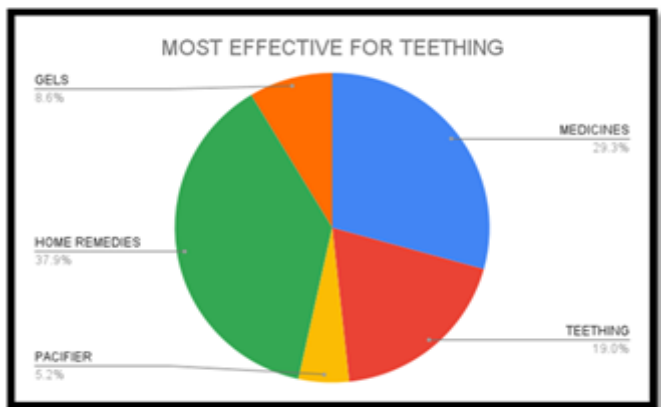
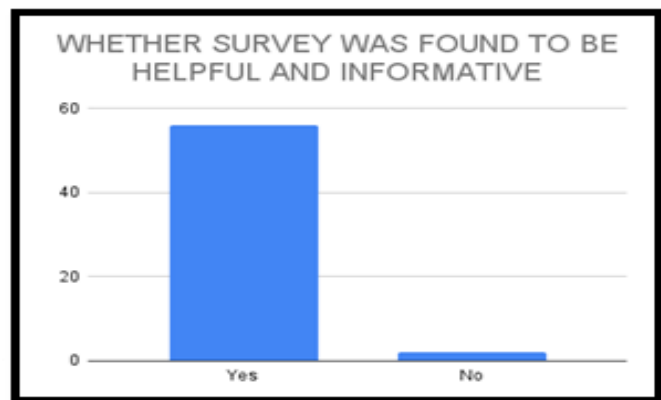


Figure 17: Whether Survey Was Helpful & Informative



Discussion

A survey among 58 parents of the children of the age group 2 years-14 years (Figure1) was conducted wherein varied results came into light. It was seen that the first primary tooth erupted in 6 months of age in 36.2% population, 7 months in 20.7%, 8 months in 19%, 9 months in 15.5% and around 8-9% reported in either 5 months, 10 months or 1 year of age (Figure2). During this time, various signs and symptoms were experienced by the child. Fever was reported in 31% patients, loss of appetite in 20.7%, general irritability in 48.3%, diarrhea in 48.3%, gnawing in 5%, rashes in 5.2%, vomiting in 3.4%, swelling of gums in 29.3%, disturbance of sleep in 15.5% of the population, less than 2% population also experienced eye swelling, running nose, head pain, pain at tooth eruption site, cold lips and drooling (Figure3). No cases of constipation were reported this time. All of these symptoms if manifested then these generally lasted for about a brief period of 1-3 days in 34.5% of the population, 4-6 days in 20.7%, 7-13 days in 17.2%, 2-4 weeks in 12.1%, 10.3% in more than 4 weeks and less than 1 day in 5-6% of the population (Figure4).

During this distressful phase, it was seen that children under the age group of 9-12 months of age were most difficult to handle which was about 27.6% while children of the age group 25-30 months were least difficult to handle (Figure5).

It was noticed that only 86.2% of the parents tried to relieve the signs and symptoms of teething while 13.8% did not do anything for it (Figure6).

During this time, 63.8% of the parents visited doctor or dentist for the same (Figure7).

Among doctor or dentists, it was seen that 12.3% of them recommended teething rings or toys, 7.7% advised gels, 21.5% suggested medicine while less than 2% advised pacifier with honey, hard fruits and vegetables, sodium.

It was also seen that 3.0% dentists or doctors did not advise any treatment (Figure8).

It was also observed that those parents who did not consult any doctor or dentist, did take some measures on their own. 40%-50% of the parents made their children use teether, teething rings or pacifiers. 47.3% of them indulged in home remedies. 30-40% gave medicines and applied gels. It was also seen that 5-6% of the parents gave homeopathic medicines to their young ones (Figure9).

Among the 47.3% of the population that indulged in home remedies, it was seen that 43.1% of them gave frozen fruits or vegetables, 5.2% gave hard unsweetened rusk, 19% gave gum massage with cold wet cloth. 17-18% parents massaged with honey as well, less than 2% parents gave gripe water (Figure10).

Parents who made their children use teething rings, it was observed that 17.2% used silicone rings, 15.5% used liquid gel rings, 10.35 used rubber rings, 8.6% used plastic rings and less than 4% used wooden rings (Figure11).

Among the parents who used teething rings, only 25.8% of them (Figure12) were aware about the harmful contents in the teething rings and those who used these, 93.5% of them cleaned these after every use (Figure13). Through the survey, awareness about wooden teething rings among the parents was analyzed and it resulted that only 39.7% know about them (Figure14).

The ones who were aware about the wooden teething rings 28.6% of them believed that they are much safer and natural. 50% felt that they were chemical and plastic free. 2.4% felt that they are more durable and cost effective. 9.5% found them to be eco-friendly and other 9.5% found them to contain antibacterial properties. It was seen that 16.7% of the parents that all the above

mentioned qualities are present in the wooden teething rings (Figure15).

It was observed that most effective method to deal with teething is home remedies in 37.9% population, medicines in 29.3%, teething rings/toys in 19%, gels in 8.6% and pacifiers in 6-7% (Figure16).

Also, 96.6% of the population felt that the survey conducted was helpful (Figure17).

Conclusion

Erupting primary teeth in the oral cavity of the young ones are considered similar to reaching mile stones in their life. But during this time of life, they are most difficult to handle especially when central incisors and second molars tend to erupt which can be interpreted through the data collected. Central incisors are first to appear in the oral cavity i.e. around six to seven months of age. Children experienced various signs and symptoms during this phase such as fever, diarrhea, gnawing and much more which generally lasted for one to three days. Mostly parents tried to relieve these signs and symptoms either by consulting doctor or dentist and following their advices such as medication, gels, toys or indulge in home remedies or used teething rings.

Teething rings, mostly used were silicon and very few used wooden ones. In general, whether those who used plastic teethers, gel-filled rings or silicon and wooden rings were not aware about their harmful contents. Although, most of the parents sterilized them after every use. The ones who did not use any teether rings or toys, had their own concerns such as hygiene, cost or less awareness. The ones who knew about wooden teething rings believed that they would be better than other due to various reasons such as naturality, eco- friendliness and antimicrobial properties.

It was observed that parents found home remedies, medicines and teething rings/toys to be the most effective method to deal with teething.

References

1. <https://www.nature.com/articles/4801078>
2. Textbook of Pediatric Dentistry by Dr. Nikhil Marwah
3. Ingram CS. Teething: myth and reality; a review of the literature. J N Z Soc Periodontal. 1981;5;13-4
4. Dally A. The lancet and the gum – lancet: 40 years of teething babies. BLancet. 1996;52:13-4
5. Macknin ML, Piedmonte M, Jacos J, Skibinski C. Symptoms associated with infant teething: a prospective study. Pediatrics. 2000;105:77-52
6. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8585899/>
7. https://www.researchgate.net/profile/Zakirulla-Meer/publication/278003460_Teething_trouble_and_its_management_in_children/links/564ca33c08ae7ac727e20377/Teething-trouble-and-its-management-in-children.pdf
8. <https://www.cbsnews.com/news/baby-teether-study-bpa-endocrine-disruptors-chemicals/>
9. <https://www.digitaljournal.com/pr/which-teether-is-best-wooden-or-silicone-melikey>
10. <https://analyticalsciencejournals.onlinelibrary.wiley.com/doi/abs/10.1002/jat.3159>
11. <https://pubs.acs.org/doi/10.1021/acs.est.6b04128>