

Social Beliefs About Teething

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Abstract

Background: Teething though a physiological process is shrouded by the myths. These myths have made parents believe teething as a pathological phenomenon.

Aim: To evaluate differences in beliefs and related practices to alleviate teething symptoms by Non-health care professional parents and parents practicing Allopathy, Homeopathy and Ayurveda.

Material & Methods: A cross-sectional study was performed including 208 parents. The survey used a self-administered structured questionnaire containing 17 items divided into two sections. The first part contained twelve questions targeted to evaluate the parents' beliefs about teething associated signs and symptoms. The second part composed of five questions that aimed to investigate parents practices to manage teething problems. Descriptive statistics was used for analyzing the results.

Results: In non-healthcare professional parents and those practicing Ayurveda, it was commonly believed that diarrhea was the most frequent symptom associated with teething. In contrast, among parents who practiced Allopathy, inflamed gums were considered the most prevalent symptom during teething. Parents practicing homeopathy rated increased salivation, fever, and diarrhea as equally common teething symptoms. It's noteworthy that parents in all of these groups tended to administer medications to provide relief from teething-related symptoms in infants.

Conclusion: Amongst all the participating group, parents believed that diarrhea, inflamed gingiva and fever are the most common symptoms associated with teething. And giving medication to infants for the relief of symptoms was the most common practice for management of teething related signs and symptoms.

Keywords: Knowledge; Attitude; Practices; Tooth eruption

Tooth eruption or teething is tooth movement from its formation up to achieving its functional position. A child's first tooth usually appears by 6 months of age, and primary dentition is completed by age 3 years.¹

Teething though a physiological process still it has been drawn in as a root cause for childhood morbidity. The association between teething and signs and symptoms are pain, fever, gingival inflammation, irritability, disturbed sleep, drooling of saliva, bowel upset, loss of appetite and ear rubbing on the side of the erupting tooth.² These

beliefs impedes with the prompt diagnosis hence serious systemic condition is overlooked.

The outcome of result of studies undertaken to establish which symptoms are caused by teething are varied. Some studies involving non-health care parents and health care professionals' parents correlate teething with signs and symptoms³⁻⁷, conflicting findings were observed in prospective studies.^{8,9}

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Caregivers and health professionals take various approaches to provide respite to uneasiness linked with teething. These approach ranges from chewing on objects to provide relief from soreness to application of medicament in extreme distressed teething child to systemic medications.

India has a rich legacy of culture and philosophy. Apart from Ayurveda, which is country's traditional health care system, Homeopathy has also found its roots in India along with Allopathy. Views of all health care professionals on teething signs and symptoms and its management do have an impact in the society as a whole. No literature to our knowledge is available which compares Non-health care professional parents and parents practicing Allopathy, Homeopathy and Ayurveda on their beliefs and related practices to alleviate teething symptom. Henceforth this study was undertaken to evaluate differences in beliefs and related practices to alleviate teething symptoms by Non-health care professional parents, parents practicing instead Allopathy, Homeopathy and Ayurveda.

Material and Methods:

A Cross-sectional survey was conducted to achieve the objective of this study. The data was collected in a random sample of different groups like non- health care professional parents, health care professional parents practicing Allopathy, Homeopathy and Ayurveda. Non-health care professional parents were graduates with or without pursuing any career, data of these parents were collected from Out Patient Department of Pediatrics, King George's Medical University(KGMU). Data for health care professional parents were randomly collected from King's George Medical University, Government Ayurveda College and Hospital and National Homeopath Medical College. The institution ethical committee approval was taken. Written informed consent was procured from all who participated in the study.

The survey used a self-administered structured questionnaire containing 17 items. Sections I and II composed of multiple-choice questions with 'Agree', 'Disagree', 'Do not know' answer to be selected. The first part contained twelve questions targeted to evaluate the parents' beliefs about teething associated signs and symptoms. The second part composed of five questions that aimed at investigating the practices that the parents would do to manage teething problems.

Statistical analysis: Data was analyzed using SPSS software.

Results

Total number of respondents were 208 parents of which 52 were Non-health care professional parents, 64 practicing Allopathy, 52 practicing Homeopathy and 40 practicing Ayurveda.

Table 1 highlights parent's belief on symptoms related to teething. Diarrhea, inflamed gingiva and fever were believed to be the most common symptoms of teething in infants. Less than 30% of the 30-45% of respondents in the present study ascribed restlessness reduced appetite, increased salivation and pain to teething. Very few respondents related cough and red eye to teething.

Table 2 illustrates comparison of the signs and symptoms believed to be associated with teething by different categories of parents. Among parents who are not healthcare professionals and those who practiced Ayurved, there was a common belief that diarrhea is the most frequently observed symptom during teething. Conversely, parents practicing Allopathy tend to place the highest emphasis on inflamed gums as a teething symptom. In the case of parents who practiced homeopathy, increased salivation, fever, and diarrhea were considered equally significant symptoms associated with teething.

Table 3: depicts that 75% of the parents gave medication to infants for relief of symptoms associated with teething.

Discussion

According to Markman¹⁰ the belief that teething causes disease was based on the theory that the nervous system acted as a connection between the noxious stimulus of tooth eruption and systemic disease. Believing the fact that infant's nervous system is very sensitive, teething may have an impact in altering this fine balance, leading to illness.

The present study found out that there is a multiplicity of views held by parents as regards to teething associated signs and symptoms. No comparison can be drawn between the present study for all groups and other studies due to unavailability of literature hence firstly comparison between beliefs of Non-health care professional parents of various studies with the present study is presented.

In the present study 46.2% Non-health care professional parents ascribed inflamed gingiva to teething while Barlow et al⁴ ascribed 100%, on the other hand Feldens et al⁵ and Paiano et al¹¹ found less than 24%. Peretz et al¹² confirmed that causative factors to inflammation are Eicosanoid and cytokines which are present in dental follicle.

Table 1: Parents beliefs regarding teething symptoms

Signs and symptoms	Category	Agree		Disagree		Do not know	
		N	%	N	%	N	%
Inflamed gingiva	Non-health care prof. parents	24	46.2	20	38.5	8	15.4
	Parents Practicing Allopath	44	68.8	16	25	4	6.2
	Parents Practicing Homeopathy	32	61.5	20	38.5	0	0
	Parents Practicing Ayurveda	36	90.0	4	10	0	0
	Total	136	65.4	60	28.8	12	5.8
Gingival itching	Non-health care prof. parents	8	15.4	36	69.2	8	15.4
	Parents Practicing Allopath	12	18.8	52	81.2	0	0
	Parents Practicing Homeopathy	16	30.8	32	61.5	4	7.7
	Parents Practicing Ayurveda	20	50	12	30	8	20
	Total	56	26.9	132	63.5	20	9.6
Increase salivation	Non-health care prof. parents	4	7.7	40	76.9	8	15.4
	Parents Practicing Allopath	4	6.2	60	93.8	0	0
	Parents Practicing Homeopathy	40	76.9	12	23.1	0	0
	Parents Practicing Ayurveda	36	90	4	10	0	0
	Total	84	40.4	116	55.8	8	3.8
Pain	Non-health care prof. parents	20	38.5	32	61.5	0	0
	Parents Practicing Allopath	12	18.8	52	81.2	0	0
	Parents Practicing Homeopathy	28	53.8	20	38.5	4	7.7
	Parents Practicing Ayurveda	28	70	12	30	0	0
	Total	88	42.3	116	55.8	4	1.9
Fever	Non-health care prof. parents	24	46.2	28	53.8	0	0
	Parents Practicing g Allopath	20	31.2	44	68.8	0	0
	Parents Practicing Homeopathy	40	76.9	12	23.1	0	0
	Parents Practicing Ayurveda	28	70	12	30	0	0
	Total	112	53.8	96	46.2	0	0
Diarrhea	Non-health care prof. parents	44	84.6	8	15.4	0	0
	Parents Practicing Allopath	32	50	32	50	0	0
	Parents Practicing Homeopathy	40	76.9	12	23.1	0	0
	Parents Practicing g Ayurveda	40	100	0	0	0	0
	Total	156	75	52	25	0	0
Restlessness	Non-health care prof. parents	12	23.1	36	69.2	4	7.7
	Parents Practicing Allopathy	20	31.2	44	68.8	0	0
	Parents Practicing Homeopathy	36	69.2	12	23.1	4	7.7
	Parents Practicing Ayurveda	24	60	8	20	8	20
	Total	92	44.2	100	48.1	16	7.7
Vomiting	Non-health care prof. parents	16	30.8	28	53.8	8	15.4
	Parents Practicing Allopath	4	6.3	59	92.8	1	1.6
	Parents Practicing Homeopathy	24	46.2	24	46.2	4	0
	Parents Practicing Ayurveda	8	20	20	50	12	30
	Total	52	25	131	63	25	12
Reduced appatite	Non-health care prof. parents	4	7.7	40	76.9	8	15.4
	Parents Practicing Allopath	16	25	48	75	0	0
	Parents Practicing Homeopathy	28	53.8	20	38.5	4	7.7
	Parents Practicing Ayurveda	24	60	12	30	4	10
	Total	72	34.6	120	57.7	16	7.7

Disturbed sleep	Non-health care prof. parents	8	15.4	36	69.2	8	15.4
	Parents Practicing Allopath	8	12.5	56	87.5	0	0
	Parents Practicing Homeopathy	16	30.8	24	46.2	12	23.09
	Parents Practicing Ayurveda	8	20	16	40	16	40
	Total	40	19.2	132	63.5	36	17.3
Red eye	Non-health care prof. parents	12	23.1	32	61.5	8	15.4
	Parents Practicing Allopath	0	0	64	100	0	0
	Parents Practicing Homeopathy	0	0	52	100	0	0
	Parents Practicing Ayurveda	8	20	28	70	4	10
	Total	20	9.6	176	84.6	12	5.8
Cough	Non-health care prof. parents	0	0	52	100	0	0
	Parents Practicing Allopath	0	0	64	100	0	0
	Parents Practicing Homeopathy	8	15.4	44	84.6	0	0
	Parents Practicing Ayurveda	4	10	28	70	8	20
	Total	12	5.8	188	90.4	8	3.6

Table 2: Comparison of signs and symptoms believed to be associated with teething

Signs and symptoms	Non-health care parents		Parents Practicing Allopathic		Parents Practicing Homeopathic		Parents Practicing Ayurveda	
	Agreement		Agreement		Agreement		Agreement	
	N	%	N	%	N	%	N	%
Inflamed gingiva	24	46.2	44	68.8	32	61.5	36	90
Gingival itching	8	15.4	12	18.8	16	30.8	20	50
Increase salivation	4	7.7	4	6.2	40	76.9	36	90
Pain	20	38.5	12	18.8	28	53.8	28	70
Fever	24	46.2	20	31.2	40	76.9	28	70
Diarrhea	44	84.6	32	50	40	76.9	40	100
Restlessness	12	23.1	20	31.2	36	69.2	24	60
Vomiting	16	30.8	4	6.3	24	46.2	8	20
Reduced appetite	4	7.7	16	25	28	53.8	24	60
Disturbed sleep	8	15.4	8	12.5	16	30.8	8	20
Red eye	12	23.1	0	0	0	0	8	20
Cough	0	0	0	0	8	15.4	4	10

Table 3: Practices by parents to deal with teething problems

Management	Category	Agree		Disagree		Do not know	
		N	(%)	N	(%)	N	(%)
Prophylactic medication	Non-health care prof parents	8	15.4	44	84.6	0	0
	Parents practicing Allopathy	0	15	64	85	0	0
	Parents practicing Homeopathy	12	23.1	40	76.9	0	0
	Parents practicing Ayurveda	32	80	4	10	4	10
	Total	52	25	152	73.1	4	1.9
Teether	Non-health care prof parents	4	7.7	48	92.3	0	0
	Parents practicing Allopathy	28	43.8	36	56.2	0	0
	Parents practicing Homeopathy	4	7.7	44	84.6	4	7.7
	Parents practicing Ayurveda	20	50	20	50	0	0
	Total	56	26.9	148	71.2	4	7.7
Frozen Vegetable	Non-health care prof parents	0	0	52	100	0	0
	Parents practicing Allopathy	12	18.8	52	81.2	0	0
	Parents Practicing Homeopathy	20	38.5	28	53.8	4	7.7
	Parents practicing Ayurveda	28	70	12	30	0	0
	Total	60	28.8	144	69.2	4	7.7
With Medication	Non health care prof parents	28	53.8	20	38.5	4	7.7
	Parents practicing Allopathy	48	75	16	25	0	0
	Parents practicing Homeopathy	44	84.6	8	15.4	0	0
	Parents practicing Ayurveda	36	90	4	10	0	0
	Total	156	75	48	23.1	4	7.7
Nothing	Non-health care prof parents	8	15.4	32	61.5	12	23.1
	Parents practicing Allopathy	40	62.5	24	37.5	0	0
	Parents Practicing Homeopathy	28	53.8	24	46.2	0	0
	Parents practicing Ayurveda	0	0	32	80	8	20
	Total	76	36.5	112	53.8	20	9.6

Cunha RF et al,⁵Owais AI et al,⁷Paiano H MA et al¹¹andKakatkhar G et al¹³reported >85% of parents attributing gingival itch, increased salivation ,increased restlessness, reduced apatite, disturbed sleep, cough to teething but contradictory findings <20% were observed in present study. According to Pierce et al¹⁴;interaction of immunoglobulin's (present in tissue surrounding erupting tooth)with matrix proteins and mast cells triggering an allergic reaction leading to gingival itching. Different immunological response is presented by children explaining varied findings. Increased restlessness and reduced sleep are found to be interrelated as teething causes anxiety and fear reactions generated by inoffensive stimuli. Increased salivation is believed to be due to maturation of salivary gland and child's inability to swallow. Whereas Shapira et al¹⁵ studied that IL-1beta inflammatory cytokines appear in

the GCF of erupting primary teeth and are correlated to some symptoms (fever, behavioral problems, and coughing)

In the present study Non-health care professional parents held diarrhoea as the most common symptom that is >80% to teething which is in accordance with Kakatkaret al¹³. But Cunha RF et al ⁵ Feldens CA et al⁶PaianoH MAet al¹¹andNoor-Mohammed R et al¹⁶ in their studies found out that <40% of parents assumed diarrhea to be caused by teething. Foster et al¹⁷ proposed that contaminated baby's finger or objects when put in mouth leads to diarrhea while Kruska et al¹⁸ believed bacterial infection to be a root cause for diarrhea. Whereas Shapira et al¹⁵IL-beta and IL-8 inflammatory cytokines in gingival crevicular fluid to be responsible for gastrointestinal disturbances.

In the present study 45% of Non-health care professional parents thought fever and pain was related to teething which is in accordance to Cunha RF et al⁵ Feldens CA et al,⁶ Ramos-Jorge J et al¹⁹ however various studies^{9,7,13,20,21} finding revealed very high percentage. King et al²² accused Herpes simplex virus for fever and pain as tooth eruption stimulates it after laying latent in alveolar crypt where as according to Shapira et al¹⁵ TNF-alpha and il-1beta inflammatory cytokines in gingival crevicular fluid to be responsible for fever.

Pain was reported by 38% of Non-health care professional parents which is in concurrence with Paianoet al¹¹ but dissimilar finding was reported by Feldons et al.⁶ who observed very low percentage. According to Sandy²³ the dental follicle is a rich source of eicosanoids, cytokines and growth factors, which could result in a localized inflammatory response, leading to pain.

Ispas et. al²⁴ found out 48% of health professionals believed that teething is associated with problems. In our study 100% of Non-health care professional parents and parents practicing Ayurveda and 92% Homeopathy and 81% parents practicing Allopathascribed at least two symptoms to teething. This strongly suggests that all respondents attributing some form of symptoms to teething.

The timing of eruption of deciduous incisors (6-12months), corresponds with the dwindling of the maternal antibody defense, and the beginning of formation of the child's own humoral defense mechanism, consequently most children of this age are comparatively vulnerable to innumerable minor infections.^{2,25}

Shapira et al¹⁵ studied that cytokines appear in the GCF of erupting primary teeth and are correlated to some symptoms (fever, behavioral problems, and coughing) to teething. In a different study it was hypothesized that teething, along with the associated gingival trauma, can cause the release of inflammatory cytokines and the accompanying systemic signs.

When the respondents were asked about the approach used to relieve the health upsets for infants teething, the use of medications for symptomatic relief was employed by 75%. The result is in accordance with Owais et al⁷ and Kakatkaret al.¹³ Indiscriminate use of medications may lead to adverse drug effect, henceforth educating parents is of utmost importance regarding accurately ascribing symptoms to teething

<30% of all respondents believed that teether or biting on a vegetable would be helpful in alleviating distress of infant, result was contrary to Kakatkar et al¹³ who found >30%. Just preceding to teething, the gingiva enlarges resulting in irritation and there by increased distress for the children.²⁶ Hence in order to find reprieve for their pain, they indulge in sucking fingers or other accessible stuffs. Henceforth teether are utilized in providing relief to children's anguish. To use liquid-filled teether precautions should be taken as they could be contaminated with pseudomonas bacteria.¹⁰

Dissimilarity between beliefs of parents practicing Allopath, Homeopathy and Ayurveda maybe consequence of their own clinical understandings or from curriculum variances in their respective fields. Non-health care professional parents affirmed that their children are teething, this is because of transitory nature and close sequential relationship of features of teething to the pre, peri and post eruptive stage of specific teeth.

Conclusion

Amongst all the participating group, parents believed that diarrhea, inflamed gingiva and fever are the most common symptoms associated with teething. And giving medication to infants for the relief of symptoms was the most common practice for management of teething related signs and symptoms.

Since medication can lead to adverse effects, it is important to educate parents about the signs and symptoms related to teething and simple management techniques like use of teething toys/pacifiers, damp washed cloth, gentle massage over gums etc. to distract and distress the infant from the discomfort of teething related symptoms.

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