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RESEARCH ARTICLE

KNOWLEDGE AND PRACTICE ABOUT TEETHING OF CHILDREN AMONG PARENTS RESIDING IN PANCHKULA DISTRICT, HARYANA: A PILOT STUDY

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ABSTRACT

Introduction: Teething is defined as a natural physiological process that is experienced by all children which commences from 6 months to about 3 years of age. A wide range of symptoms may be conjoined with teething and because of the controversy regarding the seriousness of some disturbances during tooth eruption, this study was designed to evaluate the knowledge about teething signs & symptoms and practice used to alleviate the pain associated with these symptoms among parents residing in Panchkula district, Haryana. **Materials and Method:** A self administered questionnaire was distributed among Parents attending the vaccination centres in four govt hospitals /CHC situated in District Panchkula, Haryana, India. Feedback from these parents were considered and reliability was assessed using Cronbach's alpha coefficient which was found to be 0.76. **Statistical Analysis:** Data were entered and analyzed using the Statistical Package for Social Sciences (SPSS) for Windows software (version 21.0; SPSS Inc, Chicago). **Results:** It was observed that out of total 200 parents, majority of the respondents were mothers (78%). It was observed that both father and mother showed a significant difference (p> o.oo1) reporting fever being associated with teething. Descriptive statistics, chi square test and logistic regression showing Predictors of reporting fever and diarrohea as a symptom of infant teething (significant if p> 0.05) **Conclusion:** The current study found an association between tooth eruption and systemic symptoms such as fever and diarrhoea. However it was seen that there is still a greater need to educate the parents regarding teething so that safe practices can be adopted by the parents.

INTRODUCTION

During the growth and development phase of children, various milestones are experienced by their parents and one such milestone is the appearance/ eruption of the first tooth in the oral cavity of an infant. Tooth eruption is defined as "the process of tooth emergence in the oral cavity when tooth moves from its developmental position within the jaw"[1] .There are total of 20 deciduous teeth that erupts in the oral cavity. Teething also known as "dentition difficilis," is defined as the natural physiological process that is experienced by all children which commences from 6 months to about 3 years of age[2]. The period of eruption of the deciduous teeth can be difficult and distressing for both the child and their respective parents. A wide range of symptoms may be conjoined with teething and these symptoms are loss of appetite, fever, diarrhoea, irritability, difficulty in sleeping, vomiting, and runny nose. It is unclear whether signs are developmental in origin or are actually related to tooth eruption. Some of these conditions may result from local changes that occur with the tooth movement, generating gingival inflammation that causes swelling, gingival erythema and itching. These symptoms can also be attributed to a complex interaction of inflammatory cells, enamel matrix proteins and immunoglobulin E (IgE), which results in a hypersensitivity reaction, thereby causing systemic disorders. Teething associated illness should be evaluated thoroughly so that a serious systemic disturbance is not ignored[3]. It is generally observed that during the teething process the mothers may not seek consultation for common childhood ailments and may resort to selfmedication[4-5]. Beliefs about the effect of teething on systemic health prevail in all the communities so much that teething has been listed frequently as a cause of death in Utah records[6]. Thus, there is a need to distinguish between facts and false beliefs associated with teething and because of the controversy regarding the seriousness of some disturbances during tooth eruption, this study was designed to evaluate the knowledge about teething signs & symptoms and practice used to alleviate the pain associated with these symptoms among parents residing in Panchkula district, Haryana.

METHODOLOGY

A cross-sectional study was conducted among Parents attending the vaccination centres in four govt hospitals /CHC situated in District Panchkula, Haryana, India from Ist July to 31st August 2016. Parents bearing single child aged 6 months to 2 years and those who were willing to participate (fill up the questionnaire) and provide a written consent were included in the study. Confidentiality was assured to all participants. Parents living in Joint families, those who refused to participate in the study and who were mentally incapable to communicate were excluded from the study. A convenient sampling of 200 parents (either mother or father of the children) was selected making the response rate as 100%. Prior to the commencement of the study, ethical approval was obtained from the Ethical Committee of Swami Devi Dyal Hospital and Dental College, Panchkula. Official permission was obtained from the vaccination centre / CHC through their respective directors. A Pre-testing survey was done using a self-administered structured questionnaire which was first developed in English to facilitate its validity. The English version was then translated and back translated into a more doable local language (Hindi) for better understanding by the study population. The validity and reliability of this questionnaire were then tested and re-tested with a group of 25 parents. Feedback from these parents were considered and reliability was assessed using Cronbach's alpha coefficient which was found to be 0.76 .The final questionnaire had 28 questions and was divided into four sections: Ist Section contained three questions about demographic details of parents, IInd section divided into 2 parts containing total of 18 questions , Ist part involves four questions related to parents' knowledge about teething and remaining 14 questions assessed the beliefs, signs and symptoms of parents related to teething & IIIrd section comprised of seven questions that assessed practices used by parents in managing teething problems . Response rates were structured using "agree," "disagree," and "don't know" options. Data were entered and analyzed using the Statistical Package for Social Sciences (SPSS) for Windows software (version 21.0; SPSS Inc, Chicago). Descriptive summary statistics was obtained for all independent variables. Logistic regression analysis was used to find the most significant demographic variables (independent) associated with reporting fever and diarrhoea (dependent) as signs and symptoms of infant teething. Odds ratio (OR) were also calculated for significantly associated variables to identify the independent contribution of each variable and avoid any possible confounding effect. P value <0.05 was considered statistically significant.

RESULTS

Table 1 reveals the Demographic characteristics of the parents. It was observed that out of total 200 parents, majority of the respondents were mothers (78%),with high primary /Secondary education (65.4%) respectively. Most of the parents were unskilled workers belonging to District Panchkula.

The distribution of responses by parents regarding signs and symptoms of teething is depicted in Figure1. Fever (78%), diarrohea (70.5%), gum irritation (74.5%), increased salivation (78%), desire to bite (80.5) , loss of appetite (80.5%) ,sleeping disturbance (67%) and vomiting (63%) were the most commonly reported signs and symptoms of teething.

Table 1 Demographic details of the parents

Character		n	%age	
Gender	Father	44	22%	
	Mother	156	78%	
			Mother n(%age)	Father n(%age)
Education	Illiterate	10	8(5.1)	2(4.5)
	Primary/secondary	132	102(65.4)	30(68.2)
	Gradutes/post-gradutes	58	46 (29.5)	12(27.3)
Occupation	Professional	10	2(1.3)	8(18.2)
	Clerical, farmers	25	13(8.3)	12 (27.3)
	Skilled worker	15	9(5.7)	6 (13.6)
	Unskilled worker	98	81(52)	17(38.6)
	Unemployed	52	51(32.7)	1(2.3)

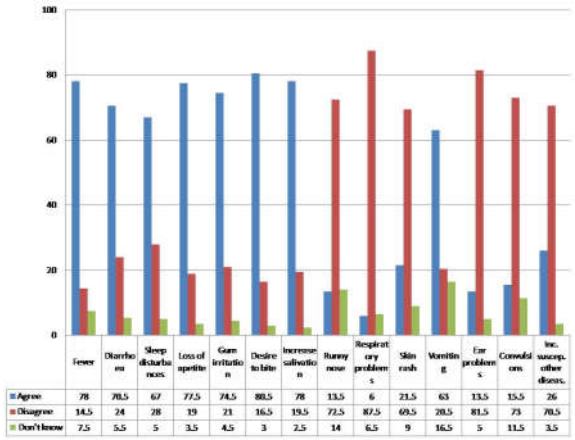

Figure 1 Showing the distribution of responses regarding signs and symptoms of teething

Figure 2 represents the distribution of responses regarding the knowledge of teething . It was seen that most of the parents believe that the first tooth erupts at the age of 6-7 months (85%) and it is mandibular central incisor (87.4%).

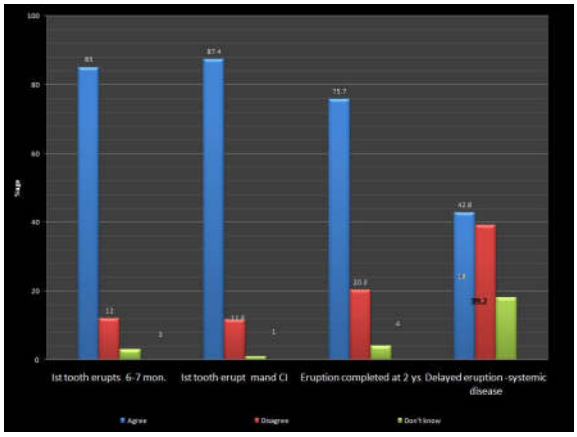

Figure 2 Showing the distribution of responses regarding knowledge of teething

Upon assesing the distribution of practices undertaken by the parents in order to releive pain, it was seen that 80.5% of parent allow their child to bite on a chilled object as it shall relieve pain associated with teething, while 82.5 % of parents preferred the use of fluids. Out of the total (200) parents, 83.5 % agreed that they should consult a physician in case of any problem associated with tooth eruption and 70.5% of parents believed that giving an analgesic will relieve symptoms related to teething. It was also observed that very few parents opted for "don't know" option in most of the questions provided for knowledge assessment. (Figure 3)

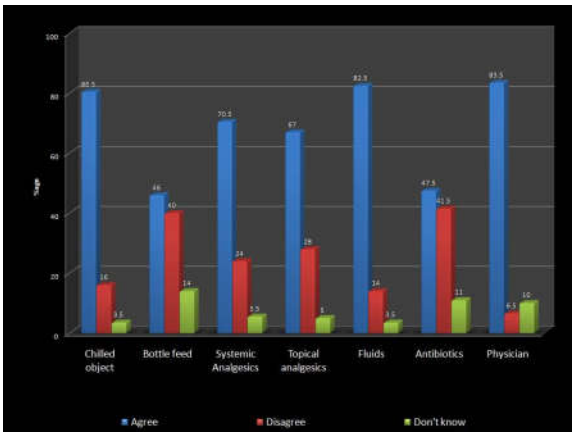

Figure 3 Showing the distribution of practice by parents in order to relieve pain

Table 2 depicts the univariate logistic regression of fever, which is one of the most commonest sign and symptom of teething with gender and educational qualification and it was observed that both father and mother showed a significant difference (p> o.oo1) reporting fever being associated with teething. However in contrast, both under graduates and above graduates had almost same knowledge and there was no significant differences among them.

Table 2 Predictors of reporting fever as a symptom of infant teething (significant if p> 0.05)

Covariates	%age of agree	N	Univariable analysis crude OR(95 % CI)	p-value
Fathers	79.5 %	44		
Gender				
Mothers	96.1%	156	0.4 (0.2–0.6)	0.023
Educational level Graduation and post –graduation	84.6 %	58		
			0.9 (0.5–1.5)	0.56

The univariate logistic regression of diarrhoea with gender and educational qualification is depicted in table 3 and it was observed that upon comparison of gender, a significant difference was seen in father and mother (P < 0.001) and also educational level among under graduates and above graduates were found to be significantly associated(p= 0.003) describing diarrhoea as one of the teething symptoms.

Table 3 Predictors of reporting diarrhoea as a symptom of infant teething (significant if p> 0.05)

Covariates	%age of agree	N	Univariable analysis crude OR(95 % CL)	p-value
Fathers				
Gender				
Mothers	**72.5 %**	**44**	**0.3 (0.2–0.5)**	**0.002**
	89.1%	**156**		
Educational level Graduation and post –graduation	79.8 %	58		
Below graduation	88.2%	132	0.5 (0.3–0.8)	0.003

DISCUSSION

Eruption of primary teeth is a significant developmental mile stone for infants and there is need to distinguish between facts and false beliefs associated with teething and hence the present study about teething was conducted among parents attending the vaccination centres in Panchkula district. In the present study, it was observed that 78% of the respondents were mothers and this is in agreement with Kumar S[7]*et al*. This could be attributed to the fact that in India, most of the mothers carry their children to the vaccination centre as most of the fathers are working and do not participate in getting vaccination done.

It was observed that nearly 29 % of the parents attained university level of education and this low %age may be due to majority of the participants living in rural areas where they were originally born and had lower chances to accomplish such level of education. This statement is in disagreement to Elbur *et al*[8] who conducted a similar study among parents in Taif, Saudi Arabia in which majority of participants were town dwellers (87.8 %) and had university education (62.5 %).

The present study also showed that symptoms including the desire to bite, gum irritation, increased salivation, fever and diarrhoea were most frequently related symptoms associated with teething. This is in accordance with study conducted by Owais AI[9], McIntyre GT[10], Wake M[11]. In the present study 78% of parents believed that fever was associated with teething which was in accordance to Wake [11]*et al* (70-85%) ,Owais [9]*et al* (84.9%) , Adimorah GN *et al*(70%) & Kakatkar G *et al*.(70%) [12,13`] and in contradiction to Feldens *et al*.[14] (38.9%). This can be due to the fact that during the process of primary tooth eruption , fever is caused by human teething virus (HT virus), which is responsible for primary infection at the beginning of life that becomes subclinical [15] .In contrast, Uti *et al*[5] reported a slightly higher percentage (90 %) than that documented in the present study.

It was observed that 70.5 % of the participants attributed diarrhoea to teething which was in contrast to the 37.9% in study conducted by Wake *et al*[11]. Diarrhoea was reported as one of the symptoms associated with teething [11]after fever and factors like environment and poor personal hygiene practices may also be responsible for increase in the incidence of diarrhoea among children. Interestingly 67% of parents in the present study contributed that sleep disturbance was associated with teething and this proportion was much lower than those found by Owais *et al* (80.8%) and Wake *et al*[11] (78%). In the present study 80.5 % parents allowed the child to bite on a chilled object in order to alleviate pain associated with teething, which was in contrast to Baykan[17] Z *et al* who found that 34.3 % of the parents allow their children to chew on objects to relieve pain[17]. It was believed that biting on a chilled object will lead to vasoconstriction, reduce the swelling and numb the pain.

Nearly 70.5 % of the participants agreed to the use of systemic analgesics to relieve teething pain which was supported by Bhavneet[17] *et al* in which 61 % of the parents considered the systemic approach to be effective for the management of teething pain [18] Approximately of all the recruited parents, 85% parents agreed that the first tooth appears at the age of 6-7 months and 87.4% believed that first tooth to be erupted in the oral cavity is mandibular central incisor and is in accordance with the study conducted by Kakatkar G *et al*[13].

LIMITATION OF THE STUDY

It is often difficult to extrapolate the findings of a study based on convenience sampling to the general population and unintensionally, the presence of social desirability bias by the respondents cannot be ruled out.

CONCLUSION

The current study found an association between tooth eruption and systemic symptoms such as fever and diarrhoea. Parents resorted to various solutions for teething, ranging from making the child bite on a chilled object to analgesics. However it was seen that there is still a greater need to educate the parents (especially those who have below graduation education level) regarding teething so that safe practices can be adopted by the parents.

RECOMMENDATIONS

Addition of teething and its management as a subject of matter (topic) during antenatal checkups, immunization visits and in various health programmes can be extremely beneficial for the child as well as the parent . Pediatricians and public health dentists must educate parents about their role in their children's oral health care to prevent inconvenience to their beloved children during this important milestone.

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