

Original Research Article

Parents' perception towards the signs and symptoms of infant teething

Helena Maria Antunes Paiano¹
Denise Vizzotto¹
Célia Maria Condeixa de França Lopes¹
Dayane Ethur de Quadros¹
Gabriela Bittencourt Machado¹

Corresponding author:

Helena Maria Antunes Paiano
Rua Leopoldo Fischer, n. 266, apto. 504 – Atiradores
CEP 89203077 – Joinville – SC – Brasil
E-mail: hpaiano@gmail.com

¹ Department of Dentistry, University of Joinville Region – Joinville – SC – Brazil.

Received for publication: April 12, 2013. Accepted for publication: June 25, 2013.

Keywords: tooth eruption; deciduous tooth; signs and symptoms.

Abstract

Introduction and Objective: The aim of this study was to evaluate the perception of parents or guardians about the signs and symptoms found during tooth eruption of their infants treated in the Pediatric Dentistry Clinics at the University of Joinville Region – Univille. **Material and methods:** We conducted an observational and cross-sectional study using data collected from structured interviews with 50 parents and guardians. **Results:** Of the sample studied, only 18% said they had no knowledge on signs and symptoms of teething. Among the local events, itching/finger or object sucking was the most frequent (94%) followed by anxiety / irritability (86%). In open questions, the salivation increasing was found to be the most frequent response (36%) and 42 people employed some treatment to relieve the health alterations during teething. As regards to the attitudes taken, dentist appointment was reported by 11.63% of the people. Concerning to object sucking, 82% confirmed this behavior and 36.59% reported that these objects were cleaned. Of the respondents in this study, 43.90% would like to receive more information on this issue. **Conclusion:** Given these results, both the family and the health team must be oriented during the infants' teething so that the prevalence of the signs and symptoms can be determined, known, and relieved.

Introduction

The word "eruption" derives from Latin meaning "the act or process of erupting". In a more specific definition, tooth eruption is all tooth movement from its formation up to achieve its functional position [26]. The emergence of the primary tooth in oral cavity initiates around 6 months and finishes around 30 months of age, therefore characterizing one of the most important moments of the child, parent, and dentists' life [21].

Eruption chronology corresponds to the moment of time in which the tooth erupts in the mouth, beginning around 6-8 months of age with the central incisors, followed by lateral incisors, first molars, canines and second molars; normally, the mandibular teeth erupt first than the maxillary teeth [5].

Frequently, this phase can be associated with the appearance of local and systemic manifestations and the report of the following signs and symptoms are very common: salivations increasing, fever, diarrhea, irritability, loss of appetite, among others [16, 20, 23, 24]. This association has been described for many years, mainly by the parents or guardians, but it is a very controversial and polemical issue that lacks of studies on proving this relationship [26].

According to Abujamra *et al.* [1], the relationship between infants' teething and local and general manifestations has been studied for many years, yet it has been a very controversial issue among Pediatric dentists, Pediatricians, and parents. In literature, there have been three opinion trends: 1) some researchers believe that there is a strong relationship between teething and general symptoms; 2) other authors consider teething as a physiologic process without any relationship with local or systemic symptoms, that is, they are only a coincidence; 3) others believe that teething can cause only a discomfort or imbalance in the normal physiologic process.

According to McDonald and Avery [16], teething is a physiologic process and it does not cause any alterations capable of provoking discomfort, emphasizing that these may be coincident to the event. On the other hand, some researchers recognize the manifestation of either local or systemic symptomatology associated with the teething process [7, 23, 27].

Malheiros [15] conducted a literature review on the most prevalent local and systemic manifestations of teething, concluding that gingival inflammation and excessive salivation were the most prevalent local manifestations, while irritability, diarrhea and fever were the most found systemic manifestations.

Praetzel [22] used the data within 215 clinical files of patients aged 6 months to 5 years-old from a private office in Santa Maria (RS). The author observed that most of the children showed local and systemic manifestations at the moment of teething, suggesting an association of them.

Cunha *et al.* [6] analyzed data from 1,165 children aged 0-3 years-old treated in the Baby Clinics of the School of Dentistry of the Sao Paulo State University. Ninety-five percent of the children exhibited some type or local or systemic manifestation reported by their parents, such as: gingival irritation was found in 943 children (85%), irritability in 812 (74%), increased salivation in 773 (70%), followed by fever (46%), disturbed sleep (39%), diarrhea (35%) and running nose (26%).

In the study of Lovato and Pithan [14], conducted through an structured interview with 85 mothers of children aged 0-3 years-old and questionnaires sent to 25 Pediatricians and 25 Pediatric Dentists, it was verified that the parents mostly considered that teething caused some type of behavioral change in their children and 35.3% of the parents reported loss of appetite; 44% of the Pediatricians and 40% Pediatric Dentists also observed this systemic manifestation.

It is unclear whether the local and systemic disturbances observed in infants' teething would be related to the process itself or to other developmental origin [16]. Considering the above information, the aim of this study was two-fold: to evaluate the perceptions of parents or guardians towards the teething signs and symptoms of their infant aged 6-30 months-old treated in the Pediatric Dentistry Clinics of the University of Joinville Region (Univille) and to know the approaches used by the parents/guardians during these manifestations considering whether they had or had not received prior information on this issue.

Material and methods

This study was conducted according to the Resolution n. 196/96 of the Brazilian National Council of Health of the Brazilian Ministry of Health and approved by the Ethical Committee in Research of Univille, under protocol n. 123/2011.

This was an observational and transversal study with quantitative approach. Of the 79 infants aged 6-30 months-old who were treated in the Baby Clinics from November 2011 to August 2012, 50 parents or guardians, both genders, without distinction of race, social class or group comprised the sample. Data were gathered through a structured

interview and the questions were regarding to the knowledge of the parents/guardians on the signs and symptoms, local and systemic manifestations most found during their infants' teething, as well as their approach during these manifestations and whether they had or had not received any information of the dentists on this issue. Both in the questions on the local and systemic manifestations and the approaches used, the respondents could opt for more than one answer.

The data were gathered by Excel software (version 2003), and the results were exhibited through descriptive statistics (absolute and percentage distributions). Chi-square test was applied with Yates correction, with level of significance of 0.05, to test the association among the responses given.

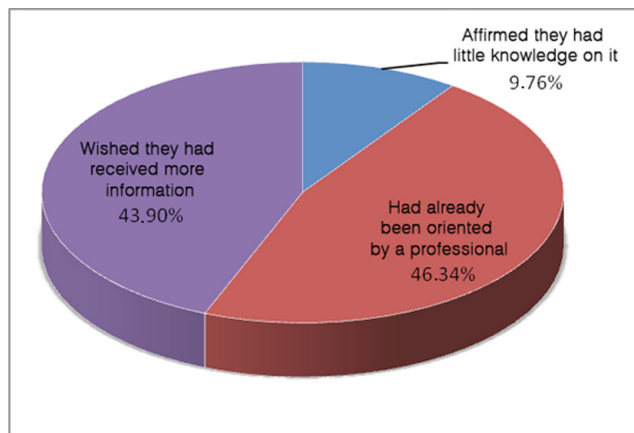
Results

Of the sample studied, 38 (76%) respondents were female and 12 (24%) male, totalizing 50 parents/guardians. Most of the females were young (55.26%) aging from 17 to 32 years-old, while 34.2% had from 33 to 40 years-old and 10.54% from 41 to 63 years-old. Most of males aged from 26 to

39 years-old (66.66%) while 33.33% from 40 to 67 years-old.

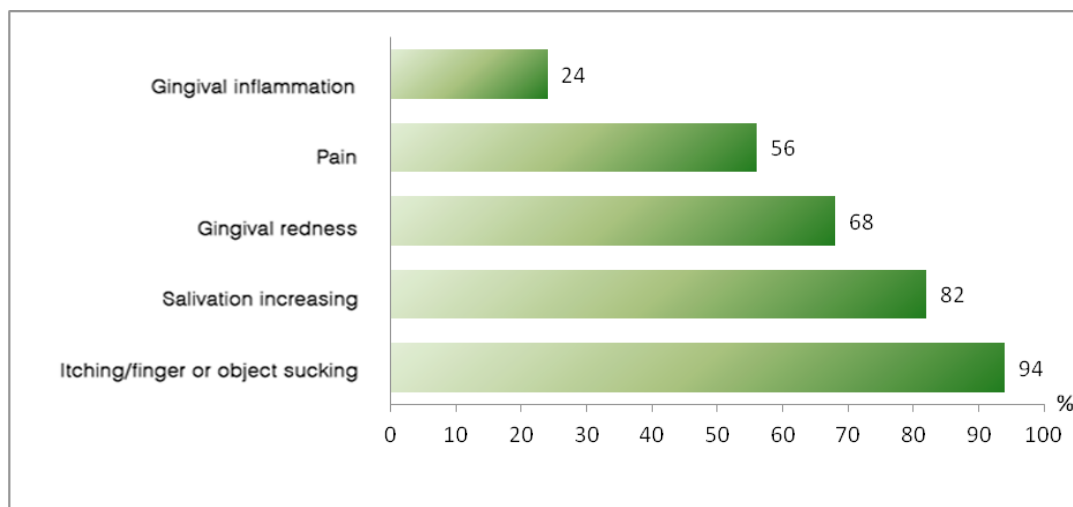
Concerning to the age range of the infants, 26% aged up to 11 months-old, 42% from 12 to 18 months-old and 32% from 19 to 28 months-old.

As regard with how the respondents felt about the issue, 46.34% had already been oriented by a professional, 43.90% wished they had received more information and 9.76% affirmed they had little knowledge on it (graph 1).



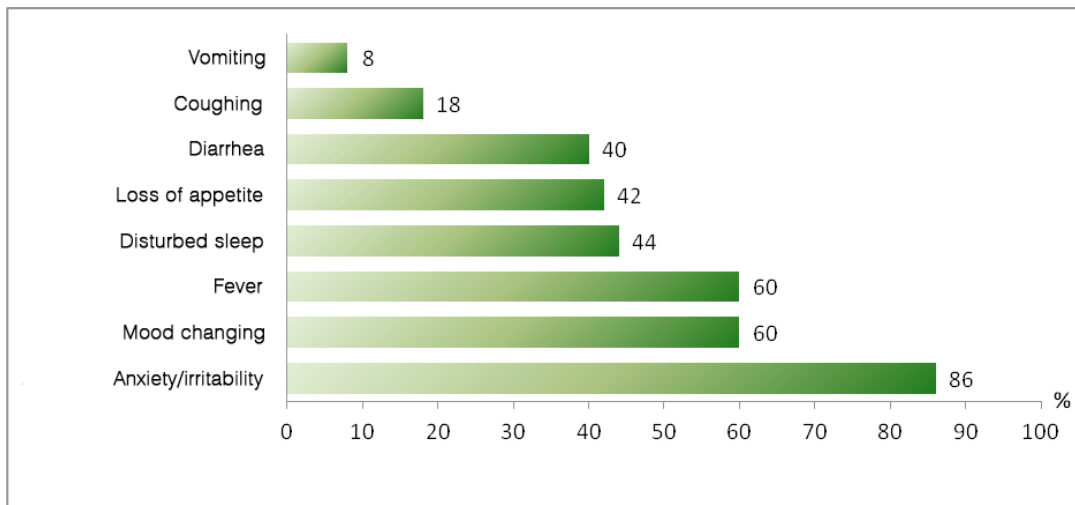
Graph 1 - Level of knowledge of the parents/guardians on the sign and symptoms of their infants' teething

The local manifestations most frequently reported by the respondents were itching/finger or object sucking (94%) and salivation increasing (82%), according to graph 2.



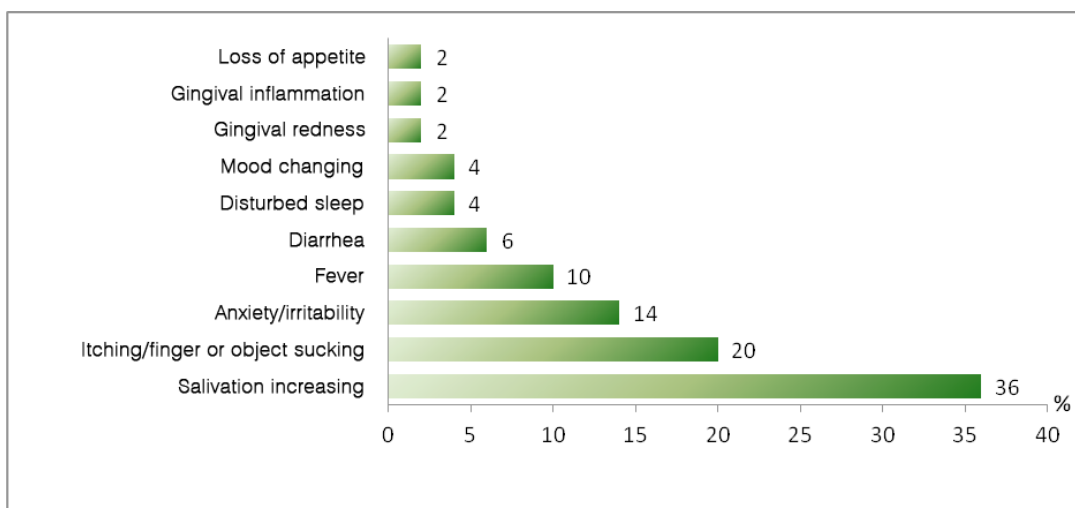
Graph 2 - Distribution of the local manifestations observed during the infants' teething

In graph 3, the most cited systemic manifestations during the infants' teething are seen as follows: anxiety/irritability, mood changing and fever, comprising 43 (86%), 30 (60%) and 30 (60%) answers, respectively.



Graph 3 - Distribution of the systemic manifestations observed during the infants' teething

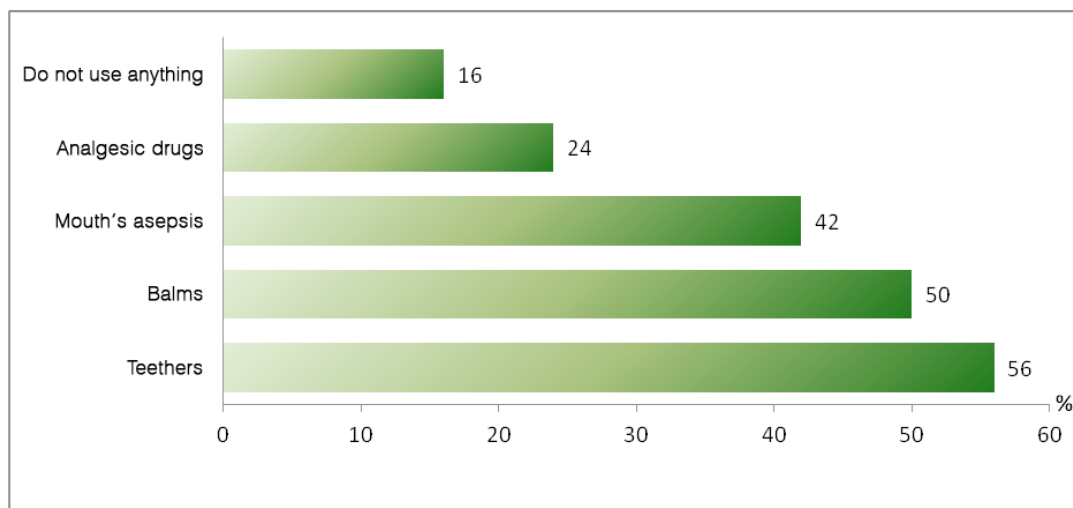
The symptoms most frequently reported during the infants' teething are seen in graph 4. The local manifestation "salivation increasing" was cited by 18 respondents (36%), and "itching/finger or object sucking" by ten (20%), while the systemic manifestation "anxiety/irritability" was said by seven respondents (14%).



Graph 4 - Symptoms most frequently cited during the infants' teething

Of the total of the people interviewed, 30 (60%) indicated the anterior area of the mouth as the most affected, followed by the posterior area cited by ten, while the remaining respondents did not report any area as relevant (20%).

When the respondents were asked about the approach used to relieve the health alterations during their infants' teething, most of the sample (42) answered according as shown in graph 5: 56% used teethers, 50% balms, 42% performed the mouth's asepsis and 24% employed analgesic drugs.



Graph 5 - Treatment employed to relieve the health alterations during the infants' teething

Concerning to the attitudes taken by the respondents attempting to solve the problems caused by the infants' teething, 48.84% used methods by themselves and 39.53% asked the doctor. Only 11.63% of the sample searched for the dentist to obtain guidance on the procedures to be adopted to relieve the problems related to their infants' teething. Because most of the symptoms were systemic clinical manifestations, their attitude suggested that the doctor is the person of choice to solve the problems.

Forty-one respondents (82%) affirmed that the infant had taken objects to the mouth. Of these, 36.59% of the interviewers reported that they always cleaned these objects.

Discussion

In this present study, most of the interviewers were female, comprising 76% of the sample, similarly to the studies of Owais *et al.* [19] and Kakatkar *et al.* [13], in which women still were the main caregivers of the children. The gingival itching/finger or object sucking (94%) was the most found local manifestation, a result similar to that of Freitas and Moliterno [10], Lovato and Pithan [14], Baykan *et al.* [3], Ottoni [18], Guarçoni *et al.* [12], Faraco Junior *et al.* [7], Coldebella *et al.* [4], Ferreira *et al.* [9] and Kakatkar *et al.* [13]. Teething is uncomfortable and

painful for most of the children and a distressful experience for the parents. Immediately prior to the teething, the gingiva undergoes swelling and become sensitive to palpation, resulting in irritation and anxiety for the children. Consequently, they try to find relief for their pain by sucking fingers or other available objects [24].

The systemic manifestation most reported by the interviewers was irritability/anxiety (86%), which is agreement to the studies of Lovato and Pithan [14] (78,8%), Baykan *et al.* [3] (76,7%), Sarrella *et al.* [24] (76,2%), Simeão and Galganny [25] (91,8%), Aragão *et al.* [2] (94%), Faraco Júnior *et al.* [7] (94%), Rezende and Kuhn [23] (75%), Vasques *et al.* [27] (80,76%) and Feldens *et al.* [8] (40,5%). Generally, high percentages have been found in the literature and none author disagreed that teething provokes anxiety and irritability in children.

Concerning to the systemic and local manifestations most found during teething, 36% reported salivation increasing, similar to the studies of Peretz *et al.* [20] (15%), Ottoni [18] (36%) and Guarçoni *et al.* [12] (26.3%). According to Aragão *et al.* [2], the rationale for the salivation increasing is two-fold: 1) the discomfort and pain; 2) the maturation and beginning of the function of the salivary glands associated with the difficult of swallowing. Most of the sample (60%) reported that the anterior area of the mouth as the most affected, corroborating with the results of Cunha *et al.* [6], Guarçoni *et al.* [12], Gonçalves [11] and Mohammed

and Basha [17]. It is believed that the mothers are more aware during teething considering that the beginning of the tooth eruption starts from the anterior teeth. This fact could explain why the local and systemic manifestations were more frequently found in this area [11].

The use of teethingers was the approach employed by most of the respondents of this study (56%) to relieve the discomfort provoked by teething, corroborating with the result found by the study of Gonçalves [11]. The use of balms by 50% of the parents/guardians in this present study is in agreement with the study of Simeão and Galganny [25] and Guarçoni *et al.* [12]. **Balms were the first option of the interviewers in the studies of Freitas and Moliterno [10] (70%) and Rezende and Kuhn [23] (53.3%).**

Considering the methods and approaches employed to relieve the teething discomfort, 48.84% of the respondents answered that they used the methods by themselves, which was similar to the study of Rezende and Kuhn [23], in which 65% of the interviewers also treated the symptoms by themselves.

When the respondents were asked about receiving information on the signs and symptoms of teething, in this present study, 39.53% searched for and received information from a doctor and 11.63% from a dentist, which was similar to the findings of the studies of Lovato and Pithan [14], in which 72.4% of the mothers sought a doctor, and of Guarçoni *et al.* [12], in which the doctors were searched for 23% of the cases and dentists for only 0.5% of the cases.

In this present study, 82% of the interviewers reported that the infant used to take objects to the mouth, and most of them (63.41%) were not appropriately cleaned. It is possible there would be a relationship between diarrhea and teething because the child takes the hands and/or objects to the oral cavity with poor hygiene [18].

Of the total sample of this present study, 43.90% would like to receive information on the issue, which corroborates with the study of Gonçalves [11], in which 78.8% of the parents were not satisfied with the information received from the health professionals regarding to the child's health during teething. In the studies of Simeão and Galganny [25], a large number of Pediatricians also reported lack of scientific studies or lectures on the knowledge towards the relationship between teething and clinical manifestations. Vasques *et al.* [27] emphasized that a multidisciplinary team is required aiming to promote the comprehensive health care of the child.

Conclusion

Considering the results obtained, it is recommended that greater emphasis on more instructive and scientific evidence-based guidelines should be given by the health team, especially the dentists.

It is suggested the formulation of Protocols for Life Cycles in Child Care, describing the multi- and interdisciplinary care among Pediatricians, Pediatric Dentists, Physicians, Nurses, among others. The strengthening of the linking with the family during this stage is fundamental to know the prevalence of these disturbances and to propose adequate approaches for the parents/guardians, also effective for the infants.

References

1. Abujamra CM, Ferreira SLM, Pinto ACG. Manifestações sistêmicas e locais durante a erupção de dentes decíduos. RBO. 1994 Jan/Feb;51(1):6-10.
2. Aragão AKR, Veloso DJ, Melo AUC. Opinião dos pediatras e odontopediatras de João Pessoa sobre erupção dentária decídua e sintomatologia infantil. Ciências Saúde. 2007;18(1):45-50.
3. Baykan Z, Sahin F, Beyazova U, Özçakar B, Baykan A. Experience of Turkish parents about their infant's teething. Child Care Health Dev. 2004;30(4):331-6.
4. Coldebella CR, Azevedo ER, Oliveira ALBM, Domaneschi C, Zuanon ACC. Manifestações sistêmicas e locais durante a erupção dentária. Rev Inst Ciênc Saúde. 2008;26(4):450-3.
5. Corrêa MSNP. Odontopediatria na primeira infância. 3. ed. São Paulo: Santos; 2010.
6. Cunha RF, Pugliesi DMC, Garcia LD, Murata SSM. Systemic and local teething disturbances: prevalence in a clinic for infants. J Dent Child. 2004;71:24-6.
7. Faraco Junior IM, Duca FFD, Rosa FM, Poletto VC. Conhecimentos e condutas de médicos pediatras com relação à erupção dentária. Rev Paulista Pediatria. 2008;26(3):258-64.
8. Feldens CA, Faraco Junior IM, Ottoni AB, Feldens EG, Vítolo MR. Teething symptoms in the first year of life and associated factors: a cohort study. J Clin Pediatr Dent. 2010;34(3):201-6.

9. Ferreira FV, Machado MVS, Ardenghi TM, Praetzel JR. Manifestações sistêmicas e locais associadas a erupção dos dentes decíduos: estudo retrospectivo. *Pesq Bras Odontoped Clín Integr.* 2009 May-Aug;9(2):235-9.
10. Freitas AD, Moliterno LFM. Evidências clínicas em bebês relacionadas aos transtornos durante a erupção dentária. *RBO.* 2001;58(1):52-5.
11. Gonçalves MST. Sinais e sintomas durante a erupção dentária decídua [Monografia]. Porto: Universidade Fernando Pessoa; 2009. 90 p.
12. Guarçoni MP, Dadalto ECV, Valle MAS, Gomes AMM. Erupção dos dentes decíduos: sintomas sistêmicos e intrabucais. *Rev ABO Nac.* 2007;14(6):342-7.
13. Kakatkar G, Nagarajappa R, Bhat N, Prasad V, Sharda A, Asawa K. Parental beliefs about children's teething in Udaipur, India: a preliminary study. *Braz Oral Res.* 2012 Mar-Apr;26(2):151-7.
14. Lovato M, Pithan SA. Avaliação da percepção de pediatras, odontopediatras e pais sobre as manifestações relacionadas à erupção dos dentes decíduos. *Stomatos.* 2004;10(18):15-20.
15. Malheiros LS. Erupção dentária, fatores que interferem e manifestações locais e sistêmicas [Monografia]. Florianópolis: Universidade Federal de Santa Catarina, Faculdade de Odontologia de Florianópolis; 1999. 36 p.
16. McDonald RE, Avery DR. Erupção dos dentes: fatores locais, sistêmicos e congênitos que influenciam o processo. *Odontopediatria.* 7. ed. Rio de Janeiro: Guanabara; 2001.
17. Mohammed RNR, Basha S. Teething disturbances; prevalence of objective manifestations in children under age 4 months to 36 months. *Med Oral Patol Oral Cir Bucal.* 2012 May;17(3):491-4.
18. Ottoni AB. Relato de manifestações locais e sistêmicas da erupção dentária no primeiro ano de vida em crianças de São Leopoldo-RS e fatores associados. Canoas: Universidade Luterana do Brasil, Faculdade de Odontologia de Canoas; 2006.
19. Owais AI, Zawaideh F, Bataineh O. Challenging parents' myths regarding their children's teething. *Int J Dent Hyg.* 2010;8(1):28-34.
20. Peretz B, Ram D, Hermida L, Otero MM. Systemic manifestations during eruption of primary teeth in infants. *J Dent Child.* 2003;70(2):170-3.
21. Pinto ACG. *Odontopediatria.* 8. ed. São Paulo: Santos; 2010.
22. Praetzel JR. Manifestações locais e/ou sistêmicas relacionadas à erupção dentária decídua. *Jornal Brasileiro de Odontopediatria e Odontologia do Bebê.* 2001;3(16):500-4.
23. Rezende CFM, Kuhn E. Percepção das mães e pediatras de Ponta Grossa/PR em relação às alterações ocorridas em bebês durante a erupção da denteição decídua. *Pesq Bras Odontoped e Clín Integr.* 2010;10(2):163-7.
24. Sarrella EM, Horeva Z, Cohenc Z, Cohen HA. Parents' and medical personnel's beliefs about infant teething. *Patient Education and Counseling.* 2005;57:122-5.
25. Simeão MCQ, Galganny AA. Erupção dentária: estudo de suas manifestações clínicas na primeira infância segundo cuidadores e médicos pediátricos. *Pesq Bras Odontoped e Clín Int.* 2006;6(2):173-80.
26. Toledo OA. *Odontopediatria: fundamentos para a prática clínica.* 4. ed. São Paulo: Premier; 2012.
27. Vasques EFL, Vasques EFL, Carvalho MGF, Oliveira PT, Garcia AFG, Costa EMMB. Manifestações relacionadas à erupção dentária na primeira infância - percepção e conduta de pais. *RFO UPF.* 2010;15(2):124-8.