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Perspectives and implications of child dental neglect - Literature review

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ABSTRACT

Introduction: Child dental neglect refers to a situation where the oral health needs of a child have not been adequately met due to a conscious failure on behalf of the parents and/or caregivers. It has been recognised that this condition can lead to suspicion of other types of neglect and abuse of children, and cause a negative impact on their quality of life. **Objective:** To describe the concept of child dental neglect in order to raise awareness about the topic, emphasising the definition, identification, management, implications and future directions in the study of the condition. **Materials and methods:** Through a bibliographic search using the terms: "neglect" "dental neglect" "child abuse" and "dentists", a review of the current literature regarding the subject was accomplished. **Results:** Despite the reported implications and consequences derived from dental neglect, there is a gap in Mexican and Latin American literature regarding this subject. **Conclusions:** This review presents this situation as a childhood problem and the way in which the literature suggests that the identification and management of the condition should be carried out. Along with this, future perspectives are proposed to explore this topic in the current dental context.

Keywords: pediatric dentistry, abandoned child, dental neglect

INTRODUCTION

Despite the fact that child dental neglect has been described in the scientific literature for more than 30 years, and different international paediatric dentistry academics and bodies have described and issued policies in this regard, it is important to note that this is a little explored topic in Latin American literature[1]. In the dental literature, the implications of child abuse and maltreatment have been described, along with the characteristics of the battered child syndrome and its implications in dental visits. However, there are no guidelines to be alert of and address dental neglect, especially in a regional context[2, 3]. The various forms of child abuse that include physical, sexual, psychological, bullying and human trafficking, have been explored and well acknowledged in other areas, and the time has rightly come to include dental neglect as one of these unfortunate harmful situations in childhood. Mexico, having ratified The United Nations Convention on the Rights of the Child, has admitted that all children have the right to be protected from abuse, abandonment, and neglect, and deserve the highest possible health standards[4].

Because the presence of dental neglect can be an indicator for the identification of other types of abuse and maltreatment in children, health personnel who have contact with the paediatric patient are in a key position to identify and monitor any abnormal situation[5]. Mexico's *Ley general de los derechos de niñas, niños y adolescentes* (General Law on the Rights of Children and Adolescents) establishes that *"the compliance of those who exercise parental authority, guardianship or caregivership and custody of girls, boys and adolescents, care them and assist them, protect them against all forms of abuse, treat them with respect for their dignity and guide them so that they know their rights..."*[6] UNICEF grants that any form of harm, physical or mental abuse, negligent treatment, maltreatment and exploitation can be considered an act of violence against this population[7]. The aim of this review is to describe the concept of child dental neglect in order to raise awareness about the topic, emphasising the definition, identification, management, implications and future directions in the study of the condition.

Concept of Child Dental Neglect

The American Academy of Pediatric Dentistry (AAPD) issued a definition of dental neglect since 1983, which it later reaffirmed in 2020.[8] This definition states that dental neglect is: *"The conscious failure on the part of a parent or legal representative to seek and follow the care and treatment needs to ensure a level of optimal oral health, which would allow the child to have an adequate function and be free of pain and infection"*[8]. Likewise, the policy document regarding dental neglect of the British Society of Paediatric Dentistry (BSPD), defines it as: *"The persistent failure to meet a child's basic oral health needs, which may result in disabling oral health, general* *health or overall development in a boy and girl"*[9]. Both definitions of child's dental neglect go beyond the oral cavity and entail a commitment at a biopsychosocial level.

Oral health needs in children allow us to conceptualise the impact that a parent/caregiver has on paediatric oral conditions. A higher presence of dental plaque indices, gingival inflammation, teeth with untreated carious lesions and less cooperation when receiving dental treatment have been described in girls and boys who have suffered some type of abuse[10]. Furthermore, dental caries, specifically early childhood caries (ECC, defined as the presence of one or more carious lesions, missing or filled teeth before the age of 6) is the most prevalent oral pathological condition in the paediatric population, with an estimated presence in around 530 million children worldwide, according to data from the World Health Organization (WHO)[11,12] (Figure 1.A-B). In Mexico, the report of the Epidemiological Surveillance System for Oral Pathologies (*SIVEPAB* for its acronym in Spanish) in its most current version (2019), suggests that there is a high need for dental caries treatment in the Mexican paediatric/adolescent population, and estimates that in the population of children from 2 to 5 years-old, 70.3% have early childhood caries[13]. Dental/dentoalveolar trauma, along with facial injuries, have been associated with the presence of physical and sexual abuse, due to the nature of the violent acts[14,15]. On the other hand, gingival/periodontal diseases (especially in adolescents and patients with systemic involvement) are the other conditions that most affect this population[16].

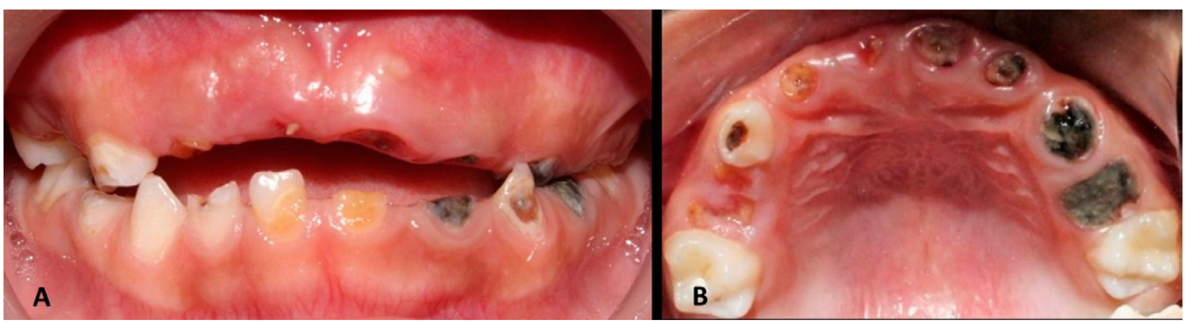

Figure 1. Clinical representation of Early Childhood Caries - Early childhood caries leads to a situation where multiple dental organs are compromised and therefore represent a risk to the paediatric patient of suffering from infections of odontogenic origin, toothache, difficulties in chewing, nutrition and affecting their quality of life. A. Frontal view, B. Occlusal view.

The non-communicable nature of diseases such as dental caries and periodontal diseases has emphasized the importance of adequate preventive care and professional guidance to avoid the presence of alterations[12,17]. Taking it as a starting point, it must be conceptualised that children (especially younger children) depend on a parent and/or caregiver to be able to satisfy these oral health care needs and avoid adverse effects[18]. The effects of the patient's socioeconomic status have also been widely discussed, and how the most marginalised groups are proportionally more affected due to barriers perpetuated by inequity[12,19].

Identifying the presence of child dental neglect is key to its correct approach. Yet, it has been reported that dentists have difficultly perceiving what dental neglect entails (*diagnosis and evaluation of signs*), are also resistant to inform what is observed due to the potential consequences (*on the part of parents, to their private practice, personal concerns, etc.*) derived from this[20,21]. When identifying the condition, it is important to make the distinction (suggested by the WHO), that a state of abandonment or neglect must be distinguished from a circumstance of poverty, which allows us to understand that dental neglect can only occur in cases where there is a reasonable amount of resources and education on the part of the parents/caregiver that allows them to some degree be cognisant of their harmful actions[22]. Therefore, at this level the condition must be identified when there is the presence of caregivers with adequate knowledge, but a conscious failure to seek treatments and differentiate them from those without knowledge or consciousness of the oral needs of their children[5].

Identification

For identification, it is necessary to integrate multiple guidelines that must include: a thorough completion of the anamnesis, a clinical examination, and requesting complementary studies when pertinent [23]. The medical record must evaluate multiple aspects of the child's environment, within which special attention is paid to current and previous symptoms, including their duration, frequency and severity[9, 24]. These will be key points to identify the chronicity of certain dentibuccal conditions and thus be able to create a history of the pathology[21, 23]. Likewise, the history of previous dental restorations must be evaluated, since they provide evidence regarding previous treatment to which the patient has undergone[9]. An adequate diet assessment should be integrated during the evaluation, because it is always an integral part of the cariogenic risk of the paediatric patient. As a result, an overview of the patient's general health status and well-being can also be obtained[25, 26]. The identification of a high consumption of free sugars has been linked to the development of carious lesions; inadequate nutritional intake is associated with deficiencies in gingival tissues, and there is evidence that when there is a deficiency of certain vitamins, the development of tooth structure defects is favoured (such as hypomineralisation)[26–28]. Finally, it is important to point out that the identification of carious lesions cannot be taken by itself as a guideline to identify the condition, since the identification requires the integration of all the elements to be studied[21].

As observed above, parents' understanding of the presence of dental pathology should be measured in order to evaluate their knowledge, interest and intentions[5, 23]. The clinical history by anatomical apparatus and systems, specifically of those conditions that may have an effect on oral health (such as in systemically compromised patients) should be implemented together with an evaluation/consultation with other health professionals regarding the interest that parents have shown towards other medical treatments[29]. Assessing the learning and behavioural difficulties of parents or caregivers allows us to determine if there are any barriers that the patient may have had to receive treatment (lack of specialised care, previous negative experiences, poor management, etc.)[9,23]. Also, it is important to identify the presence of dental anxiety on the part of parents and/or children, because it reflects whether treatment has been postponed due to this situation, and not due to dental neglect[5,23,30]. Dental anxiety should be taken as a state of apprehension, worsened by the feeling of loss of control, which is linked to a feeling that something terrible will happen in relation to dental treatment[31]. Finally, other markers of vulnerability must be evaluated, such as a young age of the patient or the presence of some disability, since it is recognised that there will always be groups at greater risk of developing oral pathologies such as dental caries[5,9].

Approach

Because the condition involves young children, child dental neglect cannot always be identified in the first instance by a general dentist or paediatric dentist, which is why it is necessary to increase awareness among medical, nursing and social work personnel regarding this condition[21, 24]. The physician, upon suspecting the presence of dental neglect, must raise these concerns with the parents or caregivers, providing them with guidance on the benefits of seeking dental care within their reach, along with preventive oral health guidelines (when possible)[24, 29, 32]. If the patient is referred to a dental service, the possibility of accompanying the recommendation with a referral letter should be sought, along with any other relevant details of the clinical record[23]. Similarly, if signs of any other type of abuse or mistreatment are identified, they should be referred to the pertinent institution, especially those related to extraoral tissues during the clinical examination of the head and neck, such as scars, lumps, areas of alopecia, haematomas, among other data that could contribute to the concept of child abuse[3, 29].

At the dental level, three stages of intervention are proposed to implement the treatment, depending on the level of deterioration that occurs, which consist of: a) preventive approach by dental personnel, b) multidisciplinary preventive approach and c) referral for protection of the child[9,23]. In the preventive approach, concerns about the condition should be raised with parents, offering support to meet the oral needs of children through established objectives, keeping periodic records, and monitoring progress[32]. Restorative procedures can be completed gradually, taking realistic approaches for both the professional and the child and their family[23]. When caring for the patient, work must be done to limit the cariogenic risk and rehabilitate carious lesions according to the patient's context[33]. Regarding the management of periodontal tissues, a thorough assessment of the soft tissues should be realized, as in some cases, signs of sexual abuse can be revealed through the assessment[5,34].

If the preventive approach by dental personnel fails, then it is recommended to apply the multidisciplinary preventive approach with other professionals such as social workers and health personnel related to the child (paediatricians, family doctors, etc.). The situation must be discussed more broadly and action plans should be negotiated with the family and other professionals involved, holding the parents/caregivers responsible, but reaching mutual agreements[9, 35]. If this approach fails, and there is a suspicion that the child is suffering significant harm or other signs of neglect or abuse, a referral should be made to child protection services[36]. The guidelines used to pursue this course of action must be clear and specific, and have bases and records to support the report[37]. Figure 2 summarises the approach to take when suspecting a case of child dental neglect.

Action Suggestions

It is essential that the issue of dental neglect be addressed as a problem in the field of paediatric health. The high rates of early childhood caries and other oral pathological situations lead us to think that many cases of this condition are not being identified in a timely and correct manner, which should be cause for alarm for every professional who works with the paediatric population.

As a first instance, guidelines or clinical guides should be drafted (preferably issued by some government agency in the matter or the public health sector)[20, 29] that allow:

- To give correct guidance about the definition and diagnosis of the condition, and explain the short-, medium- and long-term conditions/complications.
- To present the therapeutic approaches to follow
- To provide recommendations on the management of parents/caregivers according to their collaboration, legal aspects and the steps to follow to report to the authorities.

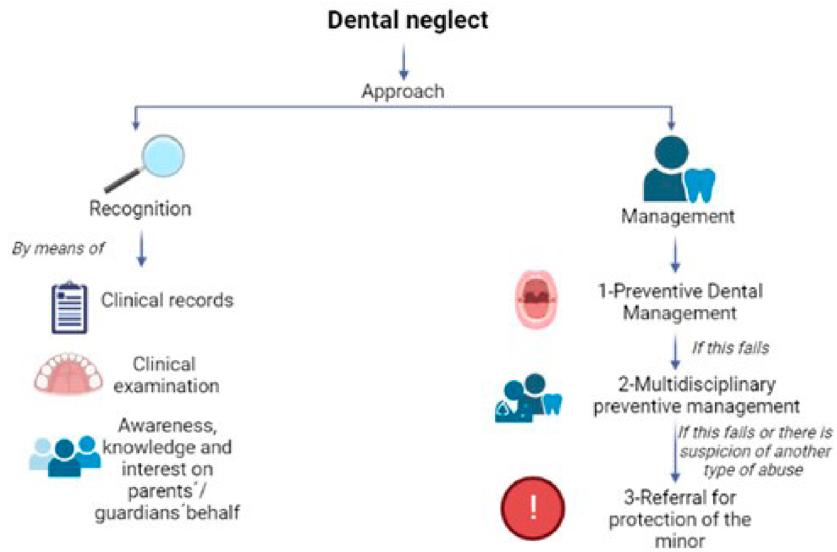

Figure 2. Route of Approach in suspected child dental neglect- In the event of suspected child dental neglect, complete clinical examination along with parental/guardian contact is key. Management of the situation involves escalating the situation depending on parental's/guardian's reaction but remission for protection of the minor is suggested in the cases where this approach fails or if other type(s) of abuse is suspected. Created with BioRender.com

These guidelines should preferably come with standardised documentation to be used for reporting the more advanced instances of these cases[29]. In terms of education for oral health professionals, efforts must be increased to educate and train health professionals in academic training and graduates so that they have the ability to identify or suspect the condition, and know the paths of action to follow[20]. Along with this, the role of medical, nursing and paediatric primary care services in general as part of oral health care teams must be reinforced. The benefit of these parts, which are so closely related to care and well-being in the different stages of childhood, is well identified. These professionals can perform timely oral examinations, providing advance advice and referring patients to appropriate dental services at ideal times (for example, before or at 12 months of age)[38,39]. In the context of child dental neglect, health care providers have every potential to play an integral and early part in identifying and limiting the damage of the phenomenon in question.

In a broader sense, there is much to do regarding interdisciplinary work, together with legislative work in this matter. It is important to establish multidisciplinary management guidelines for this condition (public health systems, clinical networks, etc.), in order to have appropriate follow-up of these patients[24, 34]. Similarly, once the clinical guidelines are well established, a way must be found to legislate regarding this condition, since as mentioned above, in many cases the identification of a type of abandonment/abuse leads to the discovery of another harmful situation in children[37]. In the United States of America and the United Kingdom, this subject has been much more developed due to the legal culture that exists in these countries, but the cultural difference should not be an excuse for not addressing the issue in our context. At the community level, and as is well established in the dental literature, education and prevention of oral conditions will always be the ones that will provide the best long-term outcomes[11,12]. Along with the above, the social determinants of oral health in childhood, and the structural barriers that may be faced due to them, must be accepted. It is known that there is a disparity in the possibility and capability of education and services in oral health, often determined by socioeconomic conditions, purchasing power, occupation, geographic location, ethnicity and race[40,41]. These factors will put a certain population at greater risk of suffering from child dental neglect, but emphasis is placed on discerning between the barriers faced by the aforementioned factors and the true neglect of oral health care by parents/caregivers.

CONCLUSIONS

Dental neglect is a complex aspect of the abuse and mistreatment that a child may receive. The child's right to grow up in health and prosperity is affected by a lack of attention to oral health, which implies a negative impact throughout the development of that boy or girl, coupled with their biopsychosocial well-being. Introducing this topic as a real problem in the current dental context, invites research to be followed through to support the theory and be able to obtain regionalised results regarding knowledge of the condition. Among health professionals, promoting the development of clinical and legal guidelines to follow, in conjunction with supportive legislation that aims to protect vulnerable children. Current health situations require us to protect the most vulnerable, since marginalised or socioeconomically disadvantaged groups are those that are most affected in terms of health and social phenomena.

BIBLIOGRAPHIC REFERENCES

1. Loochtan RM, Bross DC, Domoto PK. Dental neglect in children: definition, legal aspects, and challenges. *Pediatr Dent*. 1986; *8*(1 Spec No):113-116. https://pubmed.ncbi.nlm.nih.gov/3460034/
2. Cifuentes-Harris C, Contreras-Reyes C, Torres MA, Gonzales-Alegría S. Maltrato infantil: Conocimiento y actitud del cirujano dentista. Marco legal y revisión de la literatura. *Int J Odontostomat*. 2020; *14*(2):160-166. DOI: 10.4067/S0718-381X2020000200160
3. Martagón Cabrera LR, Belmont Laguna F, de la Teja Ángeles E, Téllez Rodríguez J. Battered child syndrome with stomatological repercussions. Case report. *Rev Odont Mex*. 2016; *20*(2):e96–104. DOI: 10.1016/j.rodmex.2016.04.014
4. The United Nation´s Children Fund (UNICEF). *The United Nations Convention on the Rights of the Child* [Internet]. [Consultado el 15 de febrero 2020]. New York City, New York, 1989. Disponible en: https://www.unicef.org/child-rights-convention.
5. Fisher-Owens SA, Lukefahr JL, Tate AR; American Academy of Pediatrics, Section on oral Health; Committee on Child Abuse and Neglect; American Academy of Pediatric Dentistry, *et al*. Oral and dental aspects of child abuse and neglect. *Pediatrics*. 2017; *140*(2):e20171487. DOI: 10.1542/peds.2017-1487
6. Gobierno de México. *Ley general de los derechos de niñas, niños y adolescents*. [Internet]. [Consultado el 30 de enero 2020]. Disponible en: https://www.gob.mx/sipinna/documentos/ley-general-de-los-derechos-de-ninas-ninos-y-adolescentes-reformada-20-junio-2018
7. The United Nation´s Children Fund (unicef). *Informe anual unicef México 2019.* [Internet]. [Consultado 30 de Enero 2020]. Disponible en: https://www.unicef.org/mexico/informes/informe-anual-2019-unicef-m%C3%A9xico
8. American Academy of Pediatric Dentistry. Definition of dental neglect. En: *The Reference Manual of Pediatric Dentistry.* Chicago, Ill: American Academy of Pediatric Dentistry; 2022:16.

9. Harris JC, Balmer RC, Sidebotham PD. British Society of Paediatric Dentistry: a policy document on dental neglect in children. *Int J Paediatr Dent*. 2018; *28*(5):e14–21. DOI: 10.1111/j.1365-263X.2009.00996.x
10. Montecchi PP, Di Trani M, Sarzi Amadè D, Bufacchi C, Montecchi F, Polimeni A. The dentist's role in recognizing childhood abuses: study on the dental health of children victims of abuse and witnesses to violence. *Eur J Paediatr Dent*. 2009; *10*(4):185-187. https://europepmc.org/article/med/20073544
11. American Academy of Pediatric Dentistry. Policy on Early Childhood Caries (ECC): Classifications, consequences, and preventive strategies. En: *The Reference Manual of Pediatric Dentistry*. Chicago, Ill: American Academy of Pediatric Dentistry; 2020:79-81.
12. World Health Organization. *Ending Childhood Dental Caries- WHO Implementation manual*. Geneva: World Health Organization; 2019.
13. Secretaría de Salud. Resultados del Sistema de Vigilancia Epidemiológica de Patologías Bucales. SIVEPAB 2019. [Internet]. [Consultado 15 de febrero 2020]. Disponible en: https://www.gob.mx/cms/uploads/attachment/file/597944/resultadosSIVEPAB_2019.pdf
14. Bradbury-Jones C, Isham L, Morris AJ, Taylor J. The "neglected" relationship between child maltreatment and oral health? An international scoping review of research. *Trauma Violence Abus*. 2021; *22*(2):265-276. DOI: 10.1177/1524838019841598
15. Maguire S, Hunter B, Hunter L, Sibert JR, Mann M, Kemp AM, Diagnosing abuse: A systematic review of torn frenum and other intra-oral injuries. *Arch Dis Child*. 2007; *92*(12):1113-1117. DOI: 10.1136/adc.2006.113001
16. Zou J, Meng M, Law CS, Rao Y, Zhou X. Common dental diseases in children and malocclusion. *Int J Oral Sci*. 2018; 10(1):1-7. DOI: 10.1038/s41368-018-0012-3
17. Tinanoff N, Baez RJ, Diaz Guillory C, Donly KJ, Feldens CA, McGrath C, et al. Early childhood caries epidemiology, aetiology, risk assessment, societal burden, management, education, and policy: Global perspective. *Int J Paediatr Dent*. 2019; *29*(3):238-248. DOI: 10.1111/ipd.12484
18. Thomson WM, Broder HL. Oral-health-related quality of life in children and adolescents. *Pediatr Clin*. 2018; *65*(5):1073–84. DOI: 10.1016/j.pcl.2018.05.015
19. Zhang T, Hong J, Yu X, Liu Q, Li A, Wu Z, et al. Association between socioeconomic status and dental caries among Chinese preschool children: A cross-sectional national study. *BMJ Open*. 2021; *11*(5):e042908. DOI: 10.1136/bmjopen-2020-042908
20. Hartung B, Schaper J, Fischer K, Ritz-Timme S. Care for children with dental neglect: identification of problems and approaches to solving them. *Int J Legal Med*. 2019; *133*(2):641-650. DOI: 10.1007/s00414-018-1938-x
21. Bhatia SK, Maguire SA, Chadwick BL, Hunter ML, Harris JC, Tempest V, et al. Characteristics of child dental neglect: A systematic review. *J Dent*. 2014; *42*(3):229-239. DOI: 10.1016/j.jdent.2013.10.010
22. Krug EG, Mercy JA, Dahlberg LL, Zwi AB. The world report on violence and health. *Lancet*. 2002; *360*(9339):1083-1088. DOI: 10.1016/S0140-6736(02)11133-0
23. Harris J. Dental neglect in children. *Paediatr Child Health*. 2012; *22*(11):476-482. DOI: 10.1016/j.paed.2012.06.005
24. Christian CW; Committee on Child Abuse and Neglect. The evaluation of suspected child physical abuse. *Pediatrics*. 2015; *135*(5):e20150356. DOI: 10.1542/peds.2015-0356
25. American Academy of Pediatric Dentistry. Policy on Dietary Recommendations for Infants, Children, and Adolescents. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill: American Academy of Pediatric Dentistry; 2022:96-100.
26. American Academy of Pediatric Dentistry. Caries-risk assessment and management for infants, children, and adolescents. En: *The Reference Manual of Pediatric Dentistry*. Chicago, Ill: American Academy of Pediatric Dentistry; 2022:266-272.

27. International Association of Paediatric Dentistry. *Paediatric periodontal disease: Foundation article and consensus recommendations, 2020*. [Internet]. [Consultado el 13 de Diciembre de 2020]. Disponible en: https://iapdworld.org/wp-content/uploads/2020/04/08_Paediatric-Periodontal-Disease.pdf
28. Nørrisgaard PE, Haubek D, Kühnisch J, Chawes BL, Stokholm J, Bønnelykke K, et al. Association of high-dose vitamin D supplementation during pregnancy with the risk of enamel defects in offspring: A 6-year follow-up of a randomized clinical trial. *JAMA Pediatr*. 2019; *173*(10):924-930. DOI: 10.1001/jamapediatrics.2019.2545
29. Katner D, Brown C, Fournier S. Considerations in identifying pediatric dental neglect and the legal obligation to report. *J Am Dent Assoc*. 2016; 147(10): 812-816. DOI: 10.1016/j.adaj.2016.04.019
30. Gavic L, Tadin A, Mihanovic I, Gorseta K, Cigic L. The role of parental anxiety, depression, and psychological stress level on the development of early-childhood caries in children. *Int J Paediatr Dent*. 2018; *28*(6):616-623. DOI: 10.1111/ipd.12419
31. Grisolia BM, Dos Santos APP, Dhyppolito IM, Buchanan H, Hill K, Oliveira BH. Prevalence of dental anxiety in children and adolescents globally: A systematic review with meta-analyses. *Int J Paediatr Dent*. 2021; *31*(2):168-183. DOI: 10.1111/ipd.12712
32. Baptista AS, Laranjo E, Norton AA, Andrade DCD, Areias C, Macedo AP. Dental Neglect, one type of child abuse – Narrative review. *Medical Express* (Sao Paulo, online). 2017; *4*(3):M170301. DOI: 10.5935/MedicalExpress.2017.03.01 Disponible también en https://www.scielo.br/j/medical/a/MjzH4B8JMXjmMYXRCBytG7H/?lang=en
33. American Academy of Pediatric Dentistry. Clinical guideline on oral and dental aspects of child abuse and neglect. *Pediatr Dent*. 2004; *26*(7 Suppl):63-66. https://pubmed.ncbi.nlm.nih.gov/15656436/
34. Costacurta M, Benavoli D, Arcudi G, Docimo R. Oral and dental signs of child abuse and neglect. *Oral Implantol* (Rome). 2016; *8*(2–3):68-73. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4969728/
35. Harris JC, Elcock C, Sidebotham PD, Welbury RR. Safeguarding children in dentistry: 2. Do paediatric dentists neglect child dental neglect? *Br Dent J*. 2009; *206*(9):465-470. DOI: 10.1038/sj.bdj.2009.356
36. Kellogg N; American Academy of Pediatrics Committee on Child Abuse and Neglect. Oral and dental aspects of child abuse and neglect. *Pediatrics*. 2005; *116*(6):1565-1568. DOI: 10.1542/peds.2005-2315
37. Sarkar R, Ozanne-Smith J, Bassed R. Mandatory reporting of child physical abuse and dental neglect by Australian dentists. *Forensic Sci Med Pathol*. 2020; 16(1):134-142. DOI: 10.1007/s12024-019-00180-9
38. Dickson-Swift V, Kenny A, Gussy M, McCarthy C, Bracksley-O'Grady S. The knowledge and practice of pediatricians in children's oral health: a scoping review. *BMC Oral Health*. 2020; *20*(1): 211. DOI: 10.1186/s12903-020-01198-0
39. Abou El Fadl R, Blair M, Hassounah S. Integrating maternal and children's oral health promotion into nursing and midwifery practice - A systematic review. *PLoS One*. 2016; *11*(11): e0166760. DOI: 10.1371/journal.pone.0166760
40. de Abreu MHNG, Cruz AJS, Borges-Oliveira AC, Martins RC, Mattos FF. Perspectives on social and environmental determinants of oral health. *Int J Environ Res Public Health*. 2021; *18*(24):13429. DOI: 10.3390/ijerph182413429
41. American Academy of Pediatric Dentistry. Policy on Social Determinants of Children´s Oral Health and Health Disparities. En: *The Reference Manual of Pediatric Dentistry*. Chicago, Ill: Academy of Pediatric Dentistry; 2022:29-33.