

## Trends In Paediatric First Dental Visit: A Retrospective Study

Research Article

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### Abstract

**Background:** The first dental visit is an important milestone in the child's life that lays down the foundation of preventive dental care in order to ensure optimal oral health during childhood.

**Objectives:** The aim of the study was to determine the average age at which parents first seek their children dental care and also to find the common reasons for seeking the first dental care.

**Materials and Methods:** A retrospective study was carried out using digital case records of 18,199 children who reported to the Department of Pediatric dentistry from June 2015 to May 2019. The age groups of the children were divided into four categories 0-3 years, 4-6 years, 7-12 years and 13-17 years. The various chief complaints were categorized as follows, tooth decay, deposits/bad breath, trauma, pain/sensitivity, malaligned teeth, missing teeth, swelling, habits, routine check-up, others (cleft lip and palate, mobile teeth, soft tissue lesions) were assessed. The frequency distribution, trends of age groups and reasons for first dental visit was analyzed through four years.

**Results:** Maximum number of children who reported for their first dental visit was between 7-12 years (34.39%) followed by 13-17 years (26.10%). Most common chief complaint for the visit was pain (45.96%). Second common complaint was deposits/bad breath (23.88%) followed by dental caries (8.74%).

**Conclusion:** Parents take their children to dentist only after 7 years for complaints like pain, deposits and dental caries. No orientation to prevention was considered and preventive dentistry needs to travel a long journey to reach the common people in India.

**Keywords:** Trends; Paediatric Dental Care; Pain; Dental Care.

### Introduction

Globally it has been emphasized that oral health plays a major role in general health of all age groups [1]. It is essential to provide utmost dental care to all essential age groups such as children and elderly. Providing children with an early and frequent dental check-up may help them in maintaining healthy habit. Guidelines of American Academy of Paediatric Dentistry (AAPD) says that the first oral examination must be done after eruption of first primary teeth and must not be done later than 12 months [2]. According to AAPD by 6 months of age the oral health risk assess-

ment must be done and by 12 months establishment of Dental Home must be made [3]. These protocols help in maintaining proper oral health in childhood by early detection of many other dental pathologies [4]. According to American Academy of Paediatrics (AAP), the first dental visit must be done between 6 months of age and the eruption of the first tooth [5].

The main concept of having an early dental visit is to prevent early childhood caries (ECC) and to detect and stop the progression of any incipient carious lesion. Providing patient's parents with proper oral hygiene techniques for infants and toddlers, edu-

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cating them about the importance of fluoride, helping them with how to manage, to avoid trauma that could damage the face and teeth, and the link between diet and oral health are all the some of the other of goals of having an early dental visit [5]. When the first dental visit is delayed, the child may experience further dental problems that could lead to the poor maintenance of oral hygiene. Failure to examine the caries at initial stage may lead to further infections accompanied by toothache, which in turn affects the daily routine of the child. It may also lead to expensive dental treatments and can even cause early loss of teeth. The consequences of this may extend to affect children's overall health and development. Considering these issues, the investigation of early dental visitation is recommended [6].

The first dental visit of a child is very essential and it must be done at an early age of not more than 18 months of age. The main objective of early dental visit is not only to access the oral health but to maintain child's oral hygiene, to counsel them with proper diet, educate them about dental caries and also factors affecting the development of malocclusions, to develop knowledge of the risks for traumatic injuries, and to aid on caries prevention [7, 8]. Information gained by the parents on their first dental visit may help them develop greater knowledge on the child's dental health. It is important to know that the first dental visit helps the children with further dental treatments and also to make the child believe in the dentist [9, 10].

ECC is the most commonly occurring dental problem in children. Examining white spot lesion, in their early stages helps to avoid later complications such as severe lesions by taking preventive measures [11]. A change in opinion from treating patients to preventing dental care will not only improve the compliance of parents but also help the patient to improve their overall health status and development. A child who have had previous dental visit at an early age will help the child to adapt and co-operate with dental treatment in future. Socioeconomic status; [12] knowledge and awareness of general dentists regarding infant oral health; and paediatricians [13] and parent's attitude towards early dental care are factors that influence the infants and toddlers for early dental care [14].

Considering this, the study was aimed to examine the average age at which parents first seek their children's dental care and also to find the common reasons for seeking the first dental care which would be an initiative to inculcate preventive dental care among parents.

## Objectives:

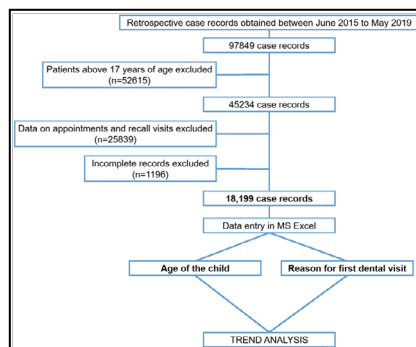
1. To determine the average age at which parents first seek their children's dental care.
2. To find the common reasons for seeking the first dental care which would be an initiative to inculcate preventive dental care among parents.

## Materials and Methods

This retrospective study was conducted in the department of Paediatric and Preventive Dentistry in a hospital based university setting in Chennai, Tamil Nadu, India. The ethical approval for the study was obtained from the review board of Institutional Ethical Committee (SRB/SDMDS3/19-20/22). This study was configured using STROBE statement [Figure-1] Digital patient records of out-patients visiting the dental institute from June 2015 to May 2019 were used for the study. Children below 17 years of age with no previous history of dental treatment were included in the present study. For eliminating selection bias, all case sheets of the children who reported to the department for dental needs were included in the study. Also a reviewer, who were blind of the study protocol, cross verified the collected data at random, to confirm the validity of the collected data. Out of 97,849 records that were retrieved, 52,615 records were excluded as they were records of adult patients. A total of 25,839 records were excluded as they were appointment and review visits. Out of the remaining 19,395 records, 1196 records were excluded as there were insufficient records on reasons for first dental visit. A total of 18,199 records were finally included for the study evaluation. The age and reason for the first dental visit were noted in a MS excel spreadsheet. The records of the patients were categorised in to 4 groups based on their age as 0-3 years, 4-6 years, 7-12 years, and 13-17 years depending on the different stages of development of occlusion. The reason for first dental visit was recorded for each age group. The data regarding the reason for the first dental visit were categorized based on the following ten chief complaints.

1. Tooth decay
2. Deposits/Bad Breath
3. Trauma
4. Pain/Sensitivity
5. Malaligned teeth
6. Missing teeth
7. Swelling
8. Habits

**Figure 1. Flow diagram of retrospective case records through the study (STROBE statement).**



- 9. Routine check up
- 10. Others (cleft palate, cleft lip, mobile teeth, soft tissue lesions).

The frequency distribution and trends of children seeking their first dental visit corresponding to the above mentioned reasons from June 2015-May 2016, June 2016-May 2017, June 2017-May 2018 and June 2018-May 2019 were calculated.

### Results and Discussion

Out of 18,199 case records, 9147 were females and 9052 were males. Table 1 shows that maximum age group who reported to the Department of Pedodontics and Preventive Dentistry from June 2015 to May 2019 were 7-12 years (34.39%), followed by 13-17 years (26.10%), 4-6 years (21.64%) and 0-3 years (17.85%). Figure 2 represents that there was a consistent decrease in first visit of all age groups except for 7-12 years where there was an increase in first dental visit from 2015 to 2019.

Most common reason for first dental visit among all age groups

was pain and or sensitivity (45.96%), followed by deposits and or bad breath (23.88%) and tooth decay (8.74) from 2015-2019. Habits (0.05%), others such as cleft lip and palate; mobile teeth, soft tissue lesions (0.66%), swelling (1.7%) and routine check-up were the least common reasons for first dental visit among all age groups which are presented in Table 2. The trend of most common reasons for first dental visit from 2015-2019 shows a drastic decrease in pain and or sensitivity with a slight increase in deposits and or bad breath which is represented in Figure 3.

Dental fear among children is foreseen; particularly when they interpret that they might be exposed to conceivably alarming situations [15]. This retrospective study showed that most of the parents or caregivers take their children to the Paediatric dentist for curative and not for preventive dental procedures. Also the present study showed a low level of awareness among parents since most of the children were brought to dentist for their first visit at the age of 7-12 years. Though the trend of reasons for first dental visit showed a decrease for pain and sensitivity, first visit for dental caries remains unchanged. Different perspectives of age and reasons of first dental visit vary with different ethnici-

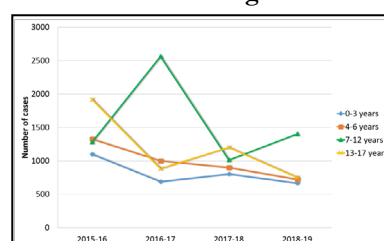
**Table 1. Frequency and percentage of age group of children with first dental visit.**

Reasons	Frequency [n (%)]				
	2015-2016	2016-2017	2017-2018	2018-2019	Total
Tooth decay	453 (8.07)	395 (7.7)	384 (9.81)	360 (10.17)	1592 (8.74)
Deposits/ Bad breath	1095 (19.37)	862 (16.8)	1009 (25.8)	1376 (38.9)	4342 (23.88)
Trauma	200 (3.56)	256 (4.99)	84 (2.145)	108 (3.05)	648 (3.56)
Pain/Sensitivity	3040 (54.16)	2826 (55.09)	1527 (39.03)	972 (27.48)	8365 (45.96)
Misaligned teeth	250 (4.45)	326 (6.35)	359 (9.17)	105 (2.96)	1040 (5.71)
Missing/Extracted teeth	392 (6.98)	277 (5.42)	350 (8.94)	420 (11.9)	1439 (7.90)
Swelling	73 (1.3)	79 (1.54)	80 (2.04)	78 (2.205)	310 (1.703)
Habits	4 (0.07)	2 (0.038)	1 (0.025)	3 (0.08)	10 (0.054)
Routine check-up	59 (1.05)	78 (1.52)	101 (2.58)	94 (2.66)	332 (1.82)
Others	55 (0.98)	28 (0.56)	17 (0.43)	21 (0.59)	121 (0.66)
Total	5621	5129	3912	3537	18199

**Table 2. Frequency and percentage of reasons for seeking dental care at first visit.**

Age group	Frequency (%)				
	2015-2016	2016-2017	2017-2018	2018-2019	Total
0-3 years	1097 (19.51)	687 (13.39)	802 (20.25)	664 (18.77)	3250 (17.85)
4-6 years	1324 (23.55)	998 (19.45)	898 (23.01)	720 (20.35)	3940 (21.64)
7-12 years	1282 (22.81)	2562 (49.95)	1012 (25.96)	1403 (39.66)	6259 (34.39)
13-17 years	1918 (34.12)	882 (17.19)	1200 (30.81)	750 (21.2)	4750 (26.10)
Total	5621	5129	3912	3537	18199

**Figure 2. Trend of common age for first dental visit.**



**Table 3. A compiled report on various age and reasons for first dental visit across the world.**

Author	Year	Country	Age of 1st dental visit	Reason for the visit
Ismail and Sohn [16]	2001	Nova Scotia, Canada	2-5 years	General dental check-up
Widmer R [17]	2003	Australia	Eruption of the first primary teeth and be no later than 12 months of age	Not mentioned
Furze H et al [4]	2003	Argentina	Mother should visit before the child's birth – 4 months of intrauterine life. After birth the child should be brought – at 6 months of age	Not mentioned
Rayner, J. A et al [18]	2003	UK	Parents register their children with a dentist once their first tooth erupts at about 6 months	Not mentioned
Savage MF et al [19]	2004	North Carolina	3-4 years	Not mentioned
Meera R et al [11]	2008	Chennai	6-12 years	Pain
Adamowicz-Klepalska B [20]	2009	Poland	12-18 months	Not mentioned
Nino et al [21]	2010	Kerala	7 years	Not mentioned
Mileva and Kondeva et al [22]	2010	Plovdiv, Bulgaria	3-6 years	Caries
Beil H et al [23]	2012	North Carolina	37-42 months	Not mentioned
Shqair AQ et al [24]	2012	Southern Brazil	7-9 years	Pain
Farid et al [25]	2013	Karachi, Pakistan	Only when there is dental problem	Not mentioned
Ghimire N et al [26]	2013	Chitwan, Nepal	7–11 years	Pain
Atulkar M et al [27]	2015	Maharashtra	5-12 years	Pain
Murshid EZ et al [28]	2016	Saudi	3–5 years	Pain
Daou MH et al [29]	2016	Lebanon	4-5 years	Decayed teeth
Grzesiak-Gasek I et al [30]	2016	Poland	Over 3 years of age	Caries severity
Duane B et al [31]	2017	Ireland	Before the age of 12 months	Not mentioned
Alshahrani NF et al [32]	2018	Saudi	3-6 years	Pain, Dental Caries
Mika A et al [33]	2018	Southern Poland	4 years	Pain
Dave et al [34]	2018	Gujarat, India	7-9 years	Pain
Sanguida A et al [35]	2019	Puducherry	6–9 years	Decayed teeth
Olatosi OO [36]	2019	Nigeria	7 and 9 years	Pain
Subramaniam P et al [37]	2019	Bengaluru, India	6 years	Pain and dental caries

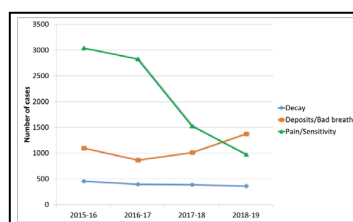
ties. Table 3 shows a compiled view of different age and reasons among different cultures. National guidelines recommended by Royal College of Surgeons of England has stated that dental caries is the most common disease in children which requires early detection and prevention [11].

One study reported high percentage of children seeking medical care at an early age compared to dental care [8]. A Study by Furze and Basso have stated that first dental visit should be around fourth month of intrauterine life where there is a chance to elucidate the significance of dental visit at 6 months of age and enlighten the mother on eruption of teeth and preventive measures [4]. A study in North Carolina reported that Paediatric primary care providers tend to under-refer, and 70% of children

with dental problem only received a referral [39]. Among children between birth to 3 years, Only 2% of the parents reported that their child had a dental visit by 1 year of age according to an Iowa Fluoride Study [40].

Epidemiological studies governed by the Ministry of Health exhibit that more than 60% of children aged 3 years and about 25% of children aged 5 have never been to the dentist. A study by Grzesiak and Kaczmarek in 1.5-3-year-olds reported that 33% of children made their first visit to the dentist at a mean age of 2.7 years [30]. Another study had established that 22% of 4-6-year-olds have never been to the dentist, and the mean age at the time of the first visit was 2.9 years [41]. Nainar and Straffon analysed children from Iowa, USA, younger than 3 years, and announced



**Figure 3. Trends of most common reasons for first dental visit.**

that only 2% of them visited the dentist before age 1, 11% before age 2, and 31% before age 3 [42]. A Brazilian study stated that most common reason for infants to seek Paediatric dentist was the parents' want for orientation and prevention following an awareness program carried out by the Baby Clinic [43]. However, pain followed by dental caries was the most common reason for the first dental visit among Saudi, Nepal and Bulgaria children [22, 26, 38]. Similar scenario regarding reason for first dental visit exists in India. [11, 34, 35]. The present study in consistency with the above mentioned study showed that pain and decay were the most common reasons for the children's first dental visit. This study also reported that deposits/bad breath was the next most common reason for first dental visit which showed an increase in the distribution through 2015 to 2019.

Parents or care takers often postpone dental treatment as they ponder their children's oral diseases as simple "stains" requiring brushing, rather than as bacterial infections challenging restorative treatment [44]. The noted delay in or non-occurrence of dental check-up visits in low-income communities can be foreseen due to the high expense of dental treatment and caregivers' preference in spending their incomes. Information about maintenance of oral hygiene, eating habits, traumatic injuries and malocclusion to parents can only be provided through early dental visit which will help in providing preventive dental care awareness among Indian parents. Thus, attempt to gain alertness of the significance of a child's first dental appointment among parents and health-care givers are strongly suggested. Health-care givers meet parents in the initial stages of children's lives (e.g., for immunization and check-ups), which places them in a prime situation to cultivate parents, harmonize with them, and assign their children to Paediatric dentists for dental check-ups at an appropriately early age. Parents who attain dental knowledge from medical masters or pharmacists are mostly able to do so because they are familiar or convenient with these providers [45]. Headlining the concern for children's early exposure to the dental surroundings will give Paediatric dentists the opportunity to educate new parents and expectant mothers regarding early intervention techniques and materials. Such education would include guidance to avoid saliva transfer from parents or caregivers to children through such actions as sharing spoons, kissing babies on the mouth, and orally cleansing dropped pacifiers or toys, which would help prevent early colonization of *Streptococcus mutans* in infants. *S. mutans* levels in parents and primary caretakers have been associated positively with the risks of transmission to infants and ECC [46, 47]. The results of the present study demonstrate a clear lack of dental knowledge and unawareness of the significance of first dental visit among parents of the study participants.

Strength of the present study is that this is the first study which reported the trends in age and reasons for the first dental visit of children through four years (2015 to 2019). The external and

internal validity were high for the present study. However, this study failed to report socio-economic status and parents' attitude towards preventive dental care as these factors could have provided a wider view on the children's early dental visit.

## Conclusion

Between 2015 to 2019, the most common reasons for the first dental visit were pain and dental caries. The most common age of children visiting for the first dental visit was 7-12 years. There was a necessity for awareness regarding preventive dental care and earlier dental visits among the South-Indian population.

## References

- Al-Zahrani AM, Al-Mushayt AS, Otaibi MF, Wynne AH. Knowledge and attitude of Saudi mothers towards their preschool children's oral health. *Pak J Med Sci.* 2014 Jul;30(4):720-4. Pubmed PMID: 25097504.
- Periodicity of Examination, Preventive Dental Services, Anticipatory Guidance/Counseling, and Oral Treatment for Infants, Children, and Adolescents. *Pediatr Dent.* 2018 Oct 15;40(6):194-204. Pubmed PMID: 32074888.
- Haupt MI. A dental home by age one. *Pediatr Dent.* 2003 Jul-Aug;25(4):323. Pubmed PMID: 13678096.
- Furze H, Basso M. The first dental visit: an Argentine point of view. *Int J Paediatr Dent.* 2003 Jul;13(4):266-8. Pubmed PMID: 12834388.
- American Academy of Pediatrics. Recommendations for preventive pediatric health care. *Pediatrics.* 2014;133(3):568-570.
- Murshid EZ. Children's ages and reasons for receiving their first dental visit in a Saudi community. *Saudi Dent J.* 2016 Jul;28(3):142-7. Pubmed PMID: 27656081.
- Hale K, Shah S. An infant's first dental visit: when, why, and how. *J Mich Dent Assoc.* 2001 Feb;83(2):28-31. Pubmed PMID: 14625945.
- Poulsen S. Child's first dental visit. *Int J Pediatr Dent.* 2003;13: 264-65.
- Kaczmarek U. Behavioural methods that shape child's demeanour in the dental office—Review of literature. *J Stoma.* 2009;62(6):456-66.
- Wilk-Sieczak B, Zakrzewski M, Chmielewska-Luczak D. Mothers' dental fear and the reasons for their preschool children's first dental visit as the predictors of their negative attitude towards the dental treatment. *Dent. Med. Probl.* 2005;42:77-82.
- Meera R, Muthu MS, Phanibabu M, Rathnaprabhu V. First dental visit of a child. *J Indian Soc Pedod Prev Dent.* 2008;26 Suppl 2:S68-71. Pubmed PMID: 19075451.
- Hamasha AA, Warren JJ, Levy SM, Broffitt B, Kanellis MJ. Oral health behaviors of children in low and high socioeconomic status families. *Pediatr Dent.* 2006 Jul-Aug;28(4):310-5. Pubmed PMID: 16903438.
- Brickhouse TH, Unkel JH, Kancitis I, Best AM, Davis RD. Infant oral health care: a survey of general dentists, pediatric dentists, and pediatricians in Virginia. *Pediatr Dent.* 2008 Mar-Apr;30(2):147-53. Pubmed PMID: 18481580.
- Waldman HB. More children are unable to get dental care than any other single health service. *ASDC J Dent Child.* 1998 May-Jun;65(3):204-8. Pubmed PMID: 9668951.
- FRANKL NS. Should the parent remain with the child in the dental operator's office? *J. Dent. Child.* 1962;29:150-63.
- Ismail AI, Nainar SM, Sohn W. Children's first dental visit: attitudes and practices of US pediatricians and family physicians. *Pediatr Dent.* 2003 Sep-Oct;25(5):425-30. Pubmed PMID: 14649605.
- Widmer R. The first dental visit: an Australian perspective. *Int J Paediatr Dent.* 2003 Jul;13(4):270. Pubmed PMID: 12834390.
- Rayner JA. The first dental visit: a UK viewpoint. *Int J Paediatr Dent.* 2003 Jul;13(4):269. Pubmed PMID: 12834389.

- [19]. Savage MF, Lee JY, Kotch JB, Vann WF Jr. Early preventive dental visits: effects on subsequent utilization and costs. *Pediatrics*. 2004 Oct;114(4):e418-23. Pubmed PMID: 15466066.
- [20]. Adamowicz-Klepalska B. Caries prevention at children. *Pediatr Pol*. 2009;84(6): 511-516.
- [21]. Nino J, Ashino J, Varsha J, Aswathy K, Rupesh S. First dental visit of a child: A retrospective study. *Pushpagiri Med J*. 2010;2(1):21-3.
- [22]. Mileva SP, Kondeva VK. Age at and reasons for the first dental visit. *Folia Med (Plovdiv)*. 2010 Oct-Dec;52(4):56-61. Pubmed PMID: 21462893.
- [23]. Beil H, Rozier RG, Preisser JS, Stearns SC, Lee JY. Effect of early preventive dental visits on subsequent dental treatment and expenditures. *Med Care*. 2012 Sep;50(9):749-56. Pubmed PMID: 22525611.
- [24]. Shqair AQ, Gomes GB, Oliveira A, Goettems ML, Romano AR, Scharozim LR, et al. Dental emergencies in a university pediatric dentistry clinic: a retrospective study. *Braz Oral Res*. 2012 Jan-Feb;26(1):50-6. Pubmed PMID: 22344338.
- [25]. Farid H, Khan FR, Aman N. Knowledge, attitude and practice of mothers regarding their own and children's dental health--a tertiary care hospital based study. *J Ayub Med Coll Abbottabad*. 2013 Jul-Dec;25(3-4):35-7. Pubmed PMID: 25226735.
- [26]. Ghimire N, Kayastha B, Nepal P. The First Dental Visit. *Journal of Chitwan Medical College*. 2014;3(4):30-33.
- [27]. Atulkar, M., Mittal, R., Kumar, S., Shewale, A. and Jadhav, H., 2015. Age of the First Dental Visit of Children in Rural Schools of Vidharba Region, Maharashtra, India: A Cross Sectional Study. *Pain*, 45(76), p.92.
- [28]. Murshid EZ. Children's ages and reasons for receiving their first dental visit in a Saudi community. *Saudi Dent J*. 2016 Jul;28(3):142-7. Pubmed PMID: 27656081.
- [29]. Daou MH, Eden E, El Osta N. AGE AND REASONS OF THE FIRST DENTAL VISIT OF CHILDREN IN LEBANON. *J Med Liban*. 2016 Jan-Mar;64(1):18-22. Pubmed PMID: 27169161.
- [30]. Grzesiak-Gasek I, Kaczmarek U. Retrospective Evaluation of the Relationship Between the First Dental Visit and the Dental Condition of Six- and Seven-Year-Old Children. *Adv Clin Exp Med*. 2016 Jul-Aug;25(4):767-73. Pubmed PMID: 27629853.
- [31]. Duane B, McGovern E, Ni Chaollai A, FitzGerald K. First tooth, first visit, zero cavities: a review of the evidence as it applies to Ireland. *J Ir Dent Assoc*. 2017 Apr;63(2):105-111. Pubmed PMID: 29782099.
- [32]. Alshahrani NF, Alshahrani ANA, Alahmari MA, Almanie AM, Alosbi AM, Togoo RA. First dental visit: Age, reason, and experiences of Saudi children. *Eur J Dent*. 2018 Oct-Dec;12(4):579-584. Pubmed PMID: 30369806.
- [33]. Mika A, Mitus-Kenig M, Zeglen A, Drapella-Gasior D, Rutkowska K, Josko-Ochojska J. The child's first dental visit. Age, reasons, oral health status and dental treatment needs among children in Southern Poland. *Eur J Paediatr Dent*. 2018 Dec;19(4):265-270. Pubmed PMID: 30567441.
- [34]. Dave B, Patel R, Bargale S, Deshpande A, Shah V, Chawda G. 1st Dental Visit: An ounce of prevention is worth a pound of cure. *Int J Oral Health Med Res*. 2018;5:4-7.
- [35]. Sanguida A, Vinothini V, Prathima GS, Santhadevy A, Premlal K, Kavitha M. Age and Reasons for First Dental Visit and Knowledge and Attitude of Parents Toward Dental Procedures for Puducherry Children Aged 0-9 years. *J Pharm Bioallied Sci*. 2019 May;11(Suppl 2):S413-S419. Pubmed PMID: 31198379.
- [36]. Olatosi OO, Onyejaka NK, Oyapero A, Ashaolu JF, Abe A. Age and reasons for first dental visit among children in Lagos, Nigeria. *Niger Postgrad Med J*. 2019 Jul-Sep;26(3):158-163. Pubmed PMID: 31441453.
- [37]. Subramaniam P, Reghuvaran J. Age and reasons for first dental visit: A cross-sectional study of children in Bengaluru, India. *Journal of Indian Association of Public Health Dentistry*. 2019 Oct 1;17(4):293.
- [38]. Alshahrani NF, Alshahrani ANA, Alahmari MA, Almanie AM, Alosbi AM, Togoo RA. First dental visit: Age, reason, and experiences of Saudi children. *Eur J Dent*. 2018 Oct-Dec;12(4):579-584. Pubmed PMID: 30369806.
- [39]. dela Cruz GG, Rozier RG, Slade G. Dental screening and referral of young children by pediatric primary care providers. *Pediatrics*. 2004 Nov;114(5):e642-52. Pubmed PMID: 15520094.
- [40]. Slayton RL, Warren JJ, Levy SM, Kanellis MJ, Islam M. Frequency of reported dental visits and professional fluoride applications in a cohort of children followed from birth to age 3 years. *Pediatr Dent*. 2002 Jan-Feb;24(1):64-8. Pubmed PMID: 11874064.
- [41]. Marcinkowska U, Piekarz T, Mosler B, Michalak E, Josko-Ochojska J. Some elements of caries prevention among children at kindergarten age. II. Institutional prevention. *Dental and Medical Problems*. 2013;50(1):52-6.
- [42]. Nainar SM, Straffon LH. Targeting of the year one dental visit for United States children. *Int J Paediatr Dent*. 2003 Jul;13(4):258-63. Pubmed PMID: 12834386.
- [43]. Cunha RF, Matos JX, Marfinati SM. Dentistry for babies: why do parents seek dental care? *J Clin Pediatr Dent*. 2004 Spring;28(3):193-4. Pubmed PMID: 15163145.
- [44]. Horton S, Barker JC. Rural Mexican immigrant parents' interpretation of children's dental symptoms and decisions to seek treatment. *Community Dent Health*. 2009 Dec;26(4):216-21. Pubmed PMID: 20088219.
- [45]. Mason C, Porter SR, Madland G, Parry J. Early management of dental pain in children and adolescents. *J Dent*. 1997 Jan;25(1):31-4. Pubmed PMID: 9080737.
- [46]. Köhler B, Andr en I, Jonsson B. The effect of caries-preventive measures in mothers on dental caries and the oral presence of the bacteria *Streptococcus mutans* and *Lactobacilli* in their children. *Arch Oral Biol*. 1984;29(11):879-83. Pubmed PMID: 6596034.
- [47]. Tenovuo J, Jentsch H, Soukka T, Karhuvaara L. Antimicrobial factors of saliva in relation to dental caries and salivary levels of *Streptococcus mutans*. *Biol Buccale*. 1992 Jun;20(2):85-90. Pubmed PMID: 1644785.