10.21608/adjc.2023.218573.1348 Advanced Dental Journal
Volume 6 (2024) | Issue 1| Pages 36-50

Original Article

Assessment of Reasons, Age, Oral Health Status and Dental Treatment Needs of Children in Their First Dental Visit: A Cross-Sectional Study.

Aya Abd El Mawgoud Mohamed Elsanhouri[1], Ola Moustafa Omar[1*], Fatma Ahmed Hamdy El-Shehaby[1], Yasmin Mohamed Yousry[1]

[1]Pediatric Dentistry Department, Faculty of Dentistry, Cairo University.

E-mail: ola.omar@dentistry.cu.edu.eg

Submitted: 19-6-2023
Accepted: 20-11-2023

Abstract

Aim: To assess the average age, reason of the first dental visit and to identify the oral health status including the children's caries experience and their treatment needs among the Egyptian children.

Materials and Methods: A total of 358 children aged from 1 to 12 years participated and filled the study questionnaire. The children were randomly chosen from the diagnostic clinic of Pediatric Dentistry and dental public health department. Parents were asked about the specific reason for his child's first dental visit. The age of the child was determined by a birth certificate with the help of parents or caregivers accompanying the child. The oral health status and dental treatment need were assessed based on clinical examination according to the recommendations of the World Health Organization (WHO).

Result: Most of children (86 %) who visited the dentist for the first time were between the ages of (3 to 6) and (6 to 9) years, with the smallest percentage (1.7%) between the ages of (1 to 3) years. Dental pain was the main reason for the first dental visit in (63%) of the children. The children age groups (3 to 6) and (6 to 9) years had a higher caries experience than other age groups. Most of the children (89.4%) were in need for complex treatment.

Conclusion: Most parents were unaware of the appropriate age for their children's first dental visit. Dental pain followed by caries were the most reported reasons for the first dental visit. The early dental visit plays a critical role in children's oral health.

Keywords: first dental visit, dental treatment needs, oral health, reason of dental visit.

I. INTRODUCTION

The first dental visit is an essential milestone in a child's life. Because it is such a necessary part of a child's oral health, the dental visit should be completed within the recommended time frame. The American Academy of Pediatrics Dentistry (AAPD) shifted to a more general timeframe: which is the timeframe between six months of age and the eruption of the first primary tooth **(AAPD, 2014.)** During the child's first dental visit, the quality of preventive dental care the child will receive, as well as his future oral health can be determined. **(Poojashree and Somasundaram, 2015)**

Several studies have focused on the age at which a child without identified dental problems should first visit a pediatric dentist. Several dental professional organizations have offered a strong rationale for making that first visit by the age of one year **(Jones and Tomar, 2005).** The American Academy of Pediatrics Dentistry (AAPD) shifted to a more general timeframe: which is the timeframe between six months of age and the eruption of the first primary tooth **(AAPD, 2014.).**

The first dental visit of a child at a suitable time may provide the opportunity to evaluate craniofacial and dental development, assess risk for common dental conditions, and counsel parents and caregivers on primary preventive interventions, disease progression and poor oral habits **(Jones and Tomar, 2005).**

The first dental visit is considered as a foundation for the relation between the dentist and the child. One of the most critical skill for a dentist in pediatric dentistry is evaluating and managing children's behavior for the first time in the dental clinic. Dentist behavior management is considered to be the key to treatment success. **(Paulsen, 2003).** Moreover, the early dental visits and the early oral health care are very essential to prevent early childhood caries (ECC) and to prevent the progression of any incipient carious lesion. **(Mani et al., 2012)**

Sometimes the first dental visit occurs without the presence of any dental problem and sometimes, there are several reasons for the first dental visit. These reasons may be due to pain, dental caries, routine dental checkup, retained deciduous tooth, fluoride application, referral by a dentist, referral by medical personnel and trauma. These reasons vary greatly and depend on many other factors which include parent's level of education, socio economic status and previous dental experience in addition to geographic factors (**Al-Shalan, 2003).**

Early assessment of dental treatment needs of children plays an important role in the improvement of children's oral health by providing the caretakers the beneficial support needed through health education and emphasizing the importance of the periodic checkup for monitoring in order to achieve optimum health of children.

Therefore, the aim of this study was to obtain baseline data about the average age for the first dental visit, identify the common reasons for seeking the first dental visit, and to assess children's caries experience and treatment needs in the first dental visit.

II. SUBJECTS AND METHODS

Sample Size Calculation:

According to the results of **Mika et al.,2018** - In which the prevalence of children that were visiting the dental clinic for adaptive and preventive purposes was (36.9%) - by adopting a confidence interval of (95%), a margin of error of (5%) with a finite population correction; the predicted sample size (n) was a total of (358) cases. Sample size calculation was performed using Epi info for windows version 7.2.

Study design and ethical considerations:
It is a descriptive, cross-sectional study, it was approved by Research Ethics Committee, Faculty of Dentistry– Cairo University with approval (number 20.3.8) the research was registered at Clinicaltrials.gov with registration number (NCT04183777).

Subject selection:
Three hundred fifty-eight children aged from one to twelve years attending the Diagnostic clinic of Pediatric Dentistry and dental public health department, Faculty of Dentistry, Cairo University were randomly enrolled in the study. Patients were carefully assessed for eligibility to participate in the study then a full explanation of the nature and the importance of the study was done. Afterwards, caregivers of the selected children were asked to sign an informed consent before starting the interview.

Eligibility criteria and selection method:

Inclusion criteria:

- Age of children between one to twelve years.
- Children with Primary or mixed dentition.
- Children seeking dental care for the first time (first dental visit).

Exclusion criteria:

- Children with systemic diseases or physical and mental problems.
- Children whose parents refuse participation.

Method of data collection:

- **Caregiver questionnaire**

Each parent or guardian whose children fulfilled the inclusion criteria were asked to fill the questionnaire that was based on the questionnaire of **Al shahrani et al., 2018** which was slightly modified and translated to simple Arabic language, it includes multiple choice questions (MCQ). We explained to the parents and caregivers the aim of the study without any guidance to prevent any information bias which might occur. The questionnaire was completed by direct interview of the parents /or caregiver. Any children whose records included missing information were excluded from the study. The questionnaire included the following sections as presented in Appendix (1).

APPENDIX (1)
Assessment of the reason, age of children in their first dental visit

Q1. Age of the child at the time of first visit.
a. 1 + to 3 years
b. 3 + to 6 years
c. 6 + to 9 years
d. Above 9 years.

Q2-First dental visit should be at what age.
a..6 - 12 months.
b.12 – 24 months.
c..24 - 36 months.
d. Others.

Q3. Person accompanying the child at the time of first visit.
a. Parents.
b. Sibling.
c. Grand Parent.
d. Guardian.
e. Alone.

Q4. Reason for the first dental visit.
a. Adaptive visit dental check-up preventive purpose.
b. Tooth pain.
c. Emergency case (tooth injury, abscess, infection).
d. Decay noted by parent.
e. Any Other.

Q5. Reason for selecting the place of treatment.
a. Quality of treatment.

b. Advice from Friends/relatives.
c. Previous personal experience.
d. Distance from home.
e. Any other.

Q6. What treatment was provided at the first time of the visit?
a. Problem for visit was treated.
b. Only oral examination/x‑ray done.
c. Only medication prescribed.
d. Only advice given.

Q7. Are you likely to return for next appointment?
a. Definitely yes.
b. Probably no.
c. Definitely no.
d. Probably yes.

Q8. Overall experience of first dental visit.
a. Very good.
b. Good.
c. Satisfactory.
d. Bad.
e. Very Bad.

Q9. What would be the main reason for you to keep your next appointment?
a. The treatment provided relieved my problem.
b. Behaviour of dental professionals.
c. Importance of dental treatment.
d. For completing my treatment.
e. Any other.

Q10. What would be the reason for you to miss your Next appointment?
a. The treatment provided did not relieve my problem.
b. Behaviour of dentist was not good
c. Further dental treatment not required
d. Any other.

PATIENT ASSESSMENT CHART

Patient assessment chart

Personal History:

Name:
..……
Sex:
……
Birth Date:
…….……
Age:
……
Address:
……
Past Medical History:
……
Past Dental History:
……
Chief Complaint:
……

Clinical Examination:

I. Extra Oral Examination:
……
II.Intra Oral Examination:
……
Soft tissue examination:
……
Hard tissue examination:
……

Primary teeth:

E D C B A A B C D E

E D C B A A B C D E

Caries Index of primary teeth (dt) =
……..

Permanent teeth :

8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8

8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8

Caries Index of permanent teeth (DT) =
……

The dental treatment needs of the child:

(1) None: no restorative treatment required. (……..)

(2) Simple: preventive treatment required, such as scaling and brushing, oral hygiene instruction (OHI), application of topical fluoride and fissure sealant. (……..)

(3) Moderate: one or more of teeth require one or two surface restoration. (…….)

(4) Complex: one or more teeth require three or four surface restoration / stainless steel crown, endodontic therapy and crown, and /or extraction.(……..)

The first section included five questions for collection of demographic data about the child i.e., name, age, date of birth, gender, and address. The age of the child was determined by the birth certificate with the help of a parent or caregiver accompanying the child.

The second section included one question about the reason (s) for the children's attendance. The Third section included two questions; the first one was to assess the dental knowledge and awareness of parents by asking them about the most appropriate age for children's first dental visit.

The fourth section included examination chart for assessment of caries experience and dental treatment needs:

- **Clinical examination**

The state of oral health (caries experience) and dental treatment needs were assessed based on clinical examination according to the recommendations of the World Health Organization **(Mika et al., 2018)**. The child was positioned in a supine position on the dental chair (Knight dental chair)[1] to increase visibility and decrease the physical strain and fatigue of the operator. The examiner used the dental mirror[2], blunt explorer[3], excavator[4] and tweezers [5]for adequate clinical examination. The examined tooth surfaces were dried with a gentle flow of compressed air.

- **Caries experience assessment**

The total number of teeth and number of teeth affected by decay (d for primary teeth, D for permanent teeth) in every child was recorded. The intensity of dental caries was estimated based on the average dt/DT number **(Gruebbel, 1944)**. The severity of caries experience of primary and permanent teeth of each child were assessed based on caries intensity index using the following categories: low caries experience category, moderate caries experience category, high caries experience category and very high caries category **(Cypriano, de Sousa Mda and Wada, 2005).**

- **Assessment of dental treatment needs**

The dental treatment needs of each child were assessed based on the following categories: (1) none: no restorative treatment required. (2)Simple: preventive treatment required, such as scaling and brushing, oral hygiene instruction (OHI), application of topical fluoride and fissure sealant. (3)Moderate: one or more teeth require one or two surface restoration. (4)Complex: one or more teeth require three or four surface restoration / stainless steel crown, endodontic therapy and crown, and /or extraction **(Behjat Almolook Ajami et al., 2007).**

[1] ((Knight dental chair Midmark Corporation, Patterson Blvd.,Ohio, USA)

[2] Wise Dental Mouth Mirror brand, W brand, model number GY-UMMO-16IG

[3] Dental USA 1006E Explorer EXD 5 6EZ, USA brand, made in USA.

[4] Wise Dental Excavator 131/132, W brand, model number G0-YA6K-9SE9.

[5] Curved Serrated Tweezers with Lock, Aven brand, model number 18400.

The fifth section included four questions and was filled by the end of the dental visit; to know whether the parent will keep or not the next dental appointment to complete his /her child dental treatment, to assess parent experience and satisfaction regarding the first dental visit, to know the main reason for keeping or missing the next appointment for dental treatment of his child. Finally, the last question was to detect dental treatment offered for the child at the first dental visit.

Data management:

Data recorded through clinical examination and by parental questionnaire was stored on a laptop, tabulated then statistically analyzed.

Statistical analysis:

Categorical data was represented as frequency (n) and percentage (%) and analyzed using chi square test. Numerical data was explored for normality by checking the data distribution, calculating the mean and median values, and using Kolmogorov-Smirnov and Shapiro-Wilk tests. If the data was found to be normally distributed, it was presented as mean and standard deviation values and independent t-test was used for the analysis. If the assumption of normality was found to be violated, it was presented as median and range values, and analyzed using Mann-Whitney U test. The significance level was set at P ≤0.05 for all tests. Statistical analysis performed with IBM® SPSS® Statistics Version 26 for Windows.

III. RESULTS

- **Demographic data and dentition type:**

The mean age of participated children was 6.03 ±2. The number of children from 3-6 years and 6-9 years were the highest frequency 308(86 %), while children less than three years revealed the lowest frequency 6 (1.7%) and children > 9 years was 44 (12.3%). Regarding gender, males were 177 (49.4%) while females were 181 (50.6%) with no significant difference between them. About 181(50.6%) children had deciduous dentition, while 177 (49.4%) had mixed dentition with no significant difference between them.

- **Number of carious primary and permanent teeth (dt and DT index):**

In this study, the mean ± standard deviation of primary teeth number was 17.6 ± 4.2 teeth, the mean ± standard deviation of dt was 5.9 ± 4.5, the mean ± standard deviation of permanent teeth number was 4.15 ± 5.5 teeth, while the mean ± standard deviation of DT was 0.8 ± 1.3.

- **Distribution of caries experience among gender and age groups using dt index:**

Regarding caries experience, there was no significant difference between males and females in dt index for all categories except for very high caries experience category as female was significantly higher than male. But in the age range, there was significant difference in all caries experience categories except low caries experience category it was insignificant as it shown table (1)

Table (1): Distribution of caries experience among gender and age groups using dt index:

		0 low		1-3 moderate		4-6 high		≥ 7very high	
		N	%	N	%	N	%	N	%
Total		0	0%	103	28.8	135	37.7	120	33.5
Gender	Male	0	0%	56	54.4%	70	51.9%	50	41.7%
	Female	0	0%	47	45.6%	65	48.1%	70	58.3%
	P value	Absolutely insignificant		0.19 ns		0.6 ns		0.001*	
Age	1 - 3 years	0	0.0%	3 a	2.9	1 a	0.7	2 a	1.6
	>3 - 6 years	0	0.0%	51 b	49.5	65 b	48.1	38 b	31.6
	>6 - 9 years	0	0.0%	28 c	27.1	56 b	41.1	70 c	58.3
	>9 years	0	0.0%	21 b	20.3	13 a	9.6	10 d	8.3
	P value	Absolutely insignificant		0.001*		0.001*		0.001*	

- **Distribution of caries experience among gender and age groups using DT index:**

Regarding caries experience, there was no significant difference between males and females in DT index for all categories. But in age range, there was significant difference in low caries experience category only, where age range (> 6-9 years) was significantly the highest in low index category 128 (81.5%) as shown in table (2).

Table (2): Distribution of caries experience among gender and age groups using DT index:

DMF		low 0-2.6		mod 2.7-4.4		high 4.5-6.5		very high >6.5	
		N	%	N	%	N	%	N	%
Total		157	89.7	16	9.1	1	.6	1	.6
Gender	Male	77	49.0%	6	37.5%	0	0.0%	0	0.0%
	Female	80	51.0%	10	62.5%	1	100.0%	1	100.0%
	P	0.7 ns		0.16 ns		0.3 ns		0.3 ns	
	>6 - 9 years	128 a	81.5%	8 a	50.0%	0 a	0.0%	0 a	0.0%
	>9 years	29 b	18.4%	8 a	50.0%	1 a	100.0%	1 a	100.0%
	P	0.001*		1.00 ns		0.3 ns		0.3 ns	

- **Type of treatment needed:**

Regarding needed treatment, no treatment and simple treatment needed represented 0 (0%), moderate treatment needed was 40 (11.1%), and complex treatment needed was 318 (89.4%) and it represent the significantly highest needed treatment. There was no significant difference in needed treatment between males and females. But in age range, there was significant difference in moderate and complex treatment between different age ranges as shown in table (3).

Table (3): Distribution of type of treatment needed among gender and age of the study sample:

Treatment needed		No treatment		Simple treatment		Moderate treatment		Complex treatment	
		N	%	N	%	N	%	N	%
Total		0	0%	0	0	40	11.1	320	89.4
Gender	Male	0	0%	0	0	18	45%	158	49.4%
	Female	0	0%	0	0	22	55%	162	50.6%
	P value	Absolut insignificant		Absolut insignificant		0.72 ns		0.81 ns	
Age	1 - 3 years	0	0%	0	0	1 [a]	2.6%	3 [a]	.9%
	>3 - 6 years	0	0%	0	0	14 [b]	35%	141 [b]	44.0%
	>6 - 9 years	0	0%	0	0	13 [b]	32.5%	142 [b]	44.3%
	>9 years	0	0%	0	0	12 [b]	30%	34 [c]	10.7%
	P value	Absolut insignificant		Absolut insignificant		0.0002*		0.0001*	

- **Frequency distribution of caregivers' knowledge and awareness for the first dental visit:**

Comparison between different answers for all questions was performed by using the Chi-square test, which revealed a significant difference in all assessed questions in this section (Q 1, 2, 3, 6, 7, and 8). For instance, in question one (>3to 6) and (>6 to 9) answer revealed the highest frequency 154 (43%) in each group, while (1-3 years) answer revealed the lowest frequency 6 (2%) as shown in table (4).

Table (4): Frequency distribution of caregiver's knowledge and awareness for the first dental visit:

		N	%	P value
Q2 Knowledge of caregiver about the age of the first dental visit	6 -12 months	40 a	11.2	0.001*
	12-24 months	165 b	46.1	
	24-36 months	35 a	9.8	
	Others	118 c	33	
Q3 Type of caregiver	Parents.	326 a	91.1	0.001*
	Sibling.	22 b	6.1	
	Grand Parent.	9 c	2.5	
	Guardian.	1 d	0.3	
Q6 treatment was provided at the first time of the visit	Problem for visit was treated.	255 a	71.2	0.001*
	Only oral examination/x-ray done.	82 b	22.9	
	Only medication prescribed.	14 c	3.9	
	Only advice given.	7 c	2	
Q7 The caregiver accepted to return for the next appointment	Definitely yes.	273 a	76.3	0.001*
	Probably no.	63 b	17.6	
	Definitely no.	7 c	2	
	Probably yes.	15 c	4.2	
Q8 Satisfaction of caregiver about the first dental visit	Very good.	244 a	68.2	0.001*
	Good.	100 b	27.9	
	Satisfactory.	6 c	1.7	
	Bad.	8 c	2.2	
	Very bad.	0 d	0	

- **Frequency distribution of participants based on the reason for the first dental visit:**

Comparison between different answers to question 4 revealed significant difference, where (Tooth pain) answer revealed the highest frequency 226 (63 %), while (Check-up \ preventive) answer revealed the lowest frequency 0 (0%), as presented in table (5).

Table (5): Frequency distribution of participants based on the reason for the first dental visit (question 4):

		N	%	P value
Q 4 Reason for the first dental visit	**Check-up \ preventive**	0	0	0.001*
	Tooth pain.	226 b	63.1	
	Emergency case(abcess & trauma)	36 c	10.1	
	Decay noted by parent.	90 d	25.1	
	Any Other cause	6 a	1.7	

- **Frequency distribution of caregiver selection of treatment place and reason for missing or keeping the next appointment:**

Comparison between different answers to all questions in this section (Q5, 9, 10) revealed significant difference as $P < 0.05$ as shown in table (6).

Table (6): Frequency distribution of caregiver for selection of dental treatment place:

		N	%	P-value
Q 5 Reason for selecting the place of treatment	Quality of treatment	35 a	9.8	0.001*
	Advice from Friends/relatives	203 b	56.7	
	Previous personal experience.	105 c	29.3	
	Distance from home.	12 d	3.4	
	Any Other cause	3 e	0.8	
Q9 the main reason for a caregiver to keep the next appointment	The treatment provided relieved my problem	23 a	6.4	0.001*
	Behaviors of dental professionals.	60 b	16.8	
	Importance of dental treatment.	119 c	33.2	
	For completing my treatment.	152 d	42.5	
	Any other.	4 e	1.1	
Q10 the main reason for a caregiver to miss the next appointment	The treatment provided did not relieve my problem.	13 a	3.6	0.001*
	Behaviours of dentist was not good	21a	5.9	
	Further dental treatment not required	17 a	4.7	
	Any other.	307 b	85.8	

- **Different relations of questionnaire items in children with decayed deciduous teeth:**

Distribution of children with decayed deciduous teeth among different answers for questions (Q1, 4, 6) and among complexity of the needed treatment, revealed significant difference, as shown in figure (1).

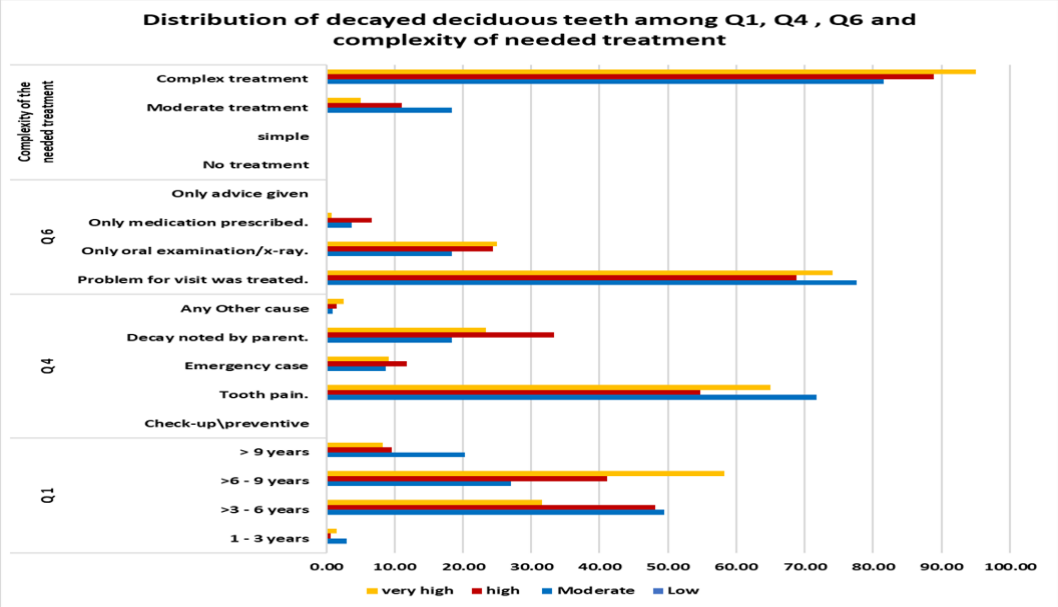

Figure (1): Distribution of decayed deciduous teeth among Q1, Q4, Q6 and complexity of needed treatment.

- **Different relations of questionnaire items in children with decayed permanent teeth:**

Distribution of children with decayed permanent teeth among different answers for questions (Q1, 4, 6) and among complexity of the needed treatment, revealed significant difference, as shown in figure (2).

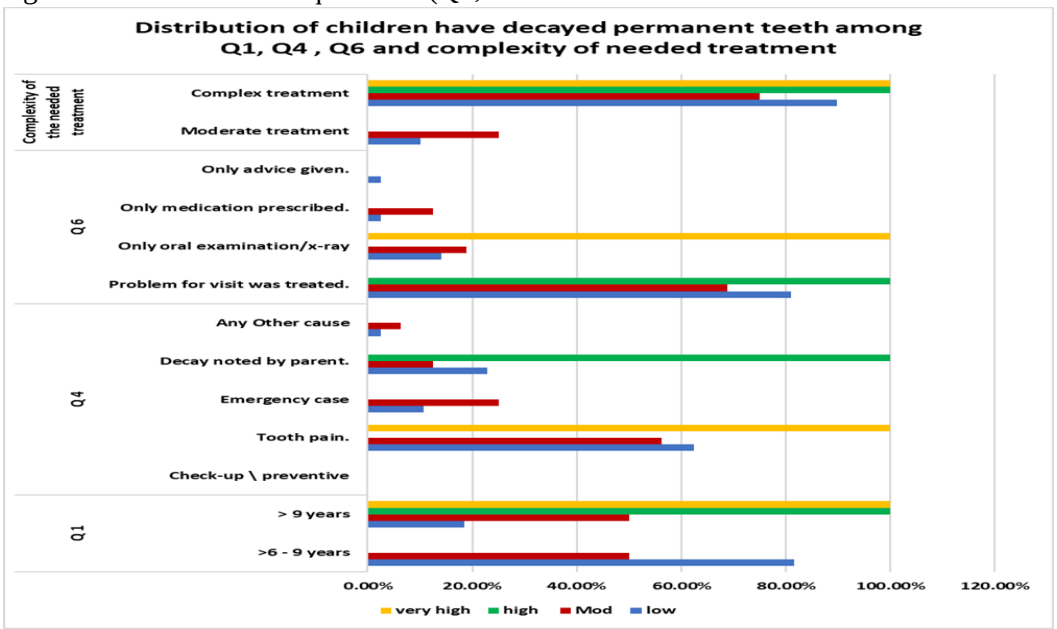

Figure (2): Different relations of questionnaire items in children with decayed permanent teeth

IV. DISCUSSION

Oral health is a fundamental component of general health and well-being. It's extremely upsetting to find that dental caries takes a toll on the health of children whose age is three years and less during the budding phase of their life growth. The preventive measures taken at early stages hold a great significance since it has been observed that the incidence of dental caries is very high among those who are infected before the age of 3 years. Important preventive measures that could establish the oral health of children are; proper oral hygiene, balanced diet, and awareness about the appropriate timing of children's first dental visit and recall visits **(Murshid, 2016).**

Up to our knowledge, this study is regarded as the first study in Egypt for assessing the age, reasons, oral health status (caries experience), and dental treatment needs of children at their first dental visit. Aiming to provide the parents with appropriate recommendations and preventive programs that can increase their awareness about the importance of the first dental visit and correlate the age of the child at the first dental visit with his/her treatment needs.

In the present study, patients were included ranging in age from 1 to 12 years old. This selected age range was to ensure that we examined all childhood stages, including early (2-6) and late (6-12 years old) stage, and that children with primary and mixed dentition who are visiting the dentist for the first time were all included. (**American academy of dental association, 2016).**

Only Egyptian children were recruited in this study to minimize variables that could affect the result due to different environmental and ethnics factors **(Alhabdan et al., 2018).** Medically compromised children were excluded to avoid any change in the accuracy of associated factors like oral hygiene measures, which dramatically affect caries prevalence, oral health status and dental treatment needs **(Makkar and Indushekar, 2019).**

Regarding caries experience using dt and DT index, there was no significant difference between the males and females, where both were equally at risk for caries development except for very high caries experience category using dt index, females (58.3%) were significantly higher than males (41.7%). This result goes in accordance with the result of **Mohammed and Mohamed, 2020,** yet they were unable to show the relationship between gender and dental caries. Some studies stated that boys were more inclined to develop dental caries as compared with girls (**Mahejabeen et al., 2006).**while other contradictory studies stated that girls were more prone to develop dental caries because girls have an early eruption of teeth as compared with boys, which results in prolonged contact with the oral environment, leading to dental caries **(Kurian et al., 2016).** Additionally, the low salivary flow rate in females puts them at a higher risk for caries because they lack more of saliva's mechanical washing, buffering and remineralization benefits. **(Ferraro and Vieira, 2010)**

Regarding age range, using dt index there was a significant difference in all caries experience categories except the low category which showed no significant difference. (**Zhou , Zhu and Chen, 2019)** and (**Omar and Abd El-Fatah, 2019)** studies reported that the prevalence of early childhood caries in age group 2 to 5 year, was found to be 70.4 % and 50.6% respectively. All previous studies ' findings concluded that ECC increased significantly with age. This was justified by the increased number of erupted primary teeth that have been exposed to the oral environment and cariogenic challenge.

There was significant difference in low caries experience category only using DT index, where age range (> 6-9 years) was significantly the highest in low index category 128 (81.5%). This

could be attributed to the late eruption of permanent teeth in which the first permanent tooth usually erupts by the age of 6 years, so dental caries will not start in the permanent teeth before that age **(Llena et al., 2020).** However, age range (>9years) was the highest in high and very high categories, may be due to failure of early identification and prevention of dental disease that led to its progression **(Colak and Dülgergil, 2013).**

In the present study, results of treatment need of children showed that most of the children are in need for complex treatment (89.4%), this could be attributed to parents who were unaware of the ideal age of their children's first dental visit because most of them brought their children to the dentist too late after experiencing pain due to low health education and socioeconomic level**.** Considering that dental caries is not a self-limiting disease and requires professional treatment, the oral health needs of affected children can be expected to increase in volume and severity if appropriate preventive and curative measures are not implemented at the appropriate time. **(Baker, Lee and Wright, 2019).**

Regarding the age of the child at the time of first dental visit, result revealed that 154 (43%) of the dental visit was at age >3 to 6 years and the same for age >6 to 9 years while at age 1-3 years it was (2 %). In accordance with our result **Mileva and Kondeva, 2010** reported that the greatest number of children making their first dental visit were in the age range (>3-6) year olds (51.90%), and the smallest number were younger than one year (1.73%). The reason for such result may be because parents and guardians did not take their children to the dentist earlier for regular checkup and they only visited the dental clinic in case their children suffered from dental caries or its complications **(Mileva and Kondeva, 2010).**

Regarding the dental knowledge and parental awareness about the most appropriate age for children first dental visit, results revealed that the highest percentage almost half of the parents 46.1% thought that the child should visit the dental clinic between age 12-24 months. This reflects that some Egyptian parents still lack sufficient knowledge and awareness about the ideal timing for the first dental visit. So adequate health promotion is required to raise awareness among the masses, especially the parents, about the importance of taking oral health care of their children seriously at the earliest budding stage of their life.

In the current study results showed that, dental pain was the main reason for the first dental visit in (63.1%) followed by decay noted by parent which was (25.1%). May be pain was the most common reason because most parents brought their children to the dental clinic only after their children experienced pain or suffered from dental caries. There is a great need to raise parental awareness about the importance of early dental visit, as untreated dental caries due to the late visits can cause severe pain, difficulty eating, increased use of emergency services, and can progress to systemic infection and death **(Baker, Lee and Wright, 2019).**

Regarding the person accompanying the child at the first dental visit, the highest percentage was for children accompanied by their parent (91.1%) Similarly**, Alshahrani et al., 2018** found that most of the children (72.67%) were being accompanied by their parents during their first dental visit. It is evident that parent is the first person who can notice any change on his child or any tooth decay. Also, parents especially mothers being overprotective, prefer to be with her children while undergoing dental treatment.

Regarding the type of treatment provided at the first dental visit, results revealed that the highest answer was (problem for a visit was treated) in 71.2 %. This result goes in accordance with **Alshahrani et al., 2018** who reported same result in 40.33% of children participating in his study. This similarity could be explained by the

fact that most pediatric and public health dentists worked efficiently and collaboratively to decrease the pain and treat the chief complaint of the children at the first dental visit.

When asking a parent about if they will keep or not the next dental appointment to complete his /her child dental treatment, results revealed that the highest answer were (Definitely yes) 76.3% this means that parents knew the importance of completing the whole treatment needs of their children and that the treatment provided decreased their pain and solved their problems.

In order to establish effective oral health promotion and disease prevention strategies, it is important to understand caregiver's attitudes about the provision of dental services to their children **(Prakash and Cutan, 2010).**Results showed that the highest percentage (68.2%) of parents and guardians were satisfied because children's chief complaint was treated and pain was decreased and they noted that pediatric dentists worked hardly to provide the best service for their children.

Regarding the main reason for keeping the next appointment, the result revealed that the highest answer was for completing my treatment (42.2%) this may be because of pediatric dentist education for the parents during the personal interview about consequence and adverse effect of untreated dental caries **(Mota-Veloso et al., 2016).**

Concerning the distribution of children having decayed deciduous teeth among the reason for the first dental visit results showed that, the highest percentage of children in the moderate category (71.8%), high (54.8%) and very high-risk category (65%) chose tooth pain as main reason for first dental visit. Same result was observed for children having decayed permanent teeth, the highest percentage of children in low category (62.4%), moderate risk category (56.3%) and very high-risk category (100%) chose tooth pain as main reason for first dental visit.

Dental caries begins early in life and progress rapidly in those who are at high risk, so the early preventive dental visit is associated with more subsequent preventive dental visits and may be associated with reduced restorative dental care visits and related expenditures during the first years of life. When treatment for dental caries is delayed and performed late the child's condition worsens, becomes more difficult to treat, the number of decayed teeth and the dental pain increased **(AAPD, 2014).**

Concerning the distribution of children with decayed deciduous teeth among the complexity of treatment needs, it was noted that in children with very high caries experience, the highest percentage of treatment needs goes to complex treatment (95%).While, results showed that children with decayed permanent teeth who required complex treatment fell into the four categories: low risk (89.8%), moderate risk (75%), high risk (100%), and very high risk. This could be attributed to the presence of many factors that could affect the stage and type of treatment, **(Wyne, Alhammad and Splieth, 2017)** reported that most of the children who suffered dental pain due to dental caries, needed complex treatment.

The first dental visit at the recommended age by the AAPD allows the dentist to educate and inform parents about their children's oral health, as well as help them adopt oral hygiene practices for their children at an early age, thus preventing complex treatment from a series of late dental visits. (**Baker, Lee and Wright, 2019).**

V. CONCLUSION

From the result of the current study, we can conclude that many children visited the pediatric dentist for the first time at late age between (3-6) and (6-9) year. The most common reason for seeking dental care at the first dental visit is dental pain followed by tooth decay and most of the parents only take their children to the

dentist after they experienced pain. The majority of children who visited the pediatric dentist for the first time are in need for complex treatment. Therefore, we are in great need for raising the dental awareness and knowledge among Egyptian parents and caregivers about the most appropriate time for the first dental visit and emphasize its importance.

Conflict of Interest:

The authors declare no conflict of interest.

Funding:

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors

Ethics:

This study protocol was approved by the ethical committee of the faculty of dentistry- Cairo university on: 31/3/2020 approval number: 20.3. 8

VI. REFERENCE

1-Poojashree, B. & Somasundaram, S., 2015. Causes for Visiting Dental Clinic. Journal of Pharmaceutical Sciences and Research, 7(9), pp.727–728.

2- Jones K, Tomar SL. Estimated impact of competing policy recommendations for age of first dental visit. Pediatric Dent J. 2005 Apr; 115(4):906-14.

3- American Association of Public Health Dentistry. First oral health assessment, policy 2014.

4- Poulsen S. The child's first dental visit. International journal of pediatric dentistry / the British Pedodontic Society [and] the International Association of Dentistry for Children. 2003 Jul; 13(4):264-5.

5-Mani, Shani & John, Jacob & Ping, Wei & Ismail, Noorliza. (2012). Early Childhood Caries: Parents Knowledge, Attitude and Practice towards Its Prevention in Malaysia. 10.5772/33898.

6- Al-Shalan TA. Factors affecting Saudi parents' perception of their children's first dental visit. J Contemp Dent Pact 2003; 15:54-66.

7- 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 Paediatric Dent. 2018 Dec; 19(4):265-270. Doi: 10.23804/ejpd.2018.19.04.3. PMID: 30567441.

8-Alshahrani NF, Alshahrani AN, Alahmari MA, Almanie AM, Alosbi AM, Togoo RA. First dental visit: Age, reason, and experiences of Saudi children. Eur J Dent 2018; 12:579-84.

9- Gruebbel, A. O. (1944). A Measurement of Dental Caries Prevalence and Treatment Service for Deciduous Teeth. Journal of Dental Research, 23(3), 163–168.

10-Cypriano S, de Sousa Mda L, Wada RS. [Evaluation of simplified DMFT indices in epidemiological surveys of dental caries]. Rev Saude Publica. 2005 Apr; 39(2):285-92. Portuguese. doi: 10.1590/s0034-89102005000200021. Epub 2005 May 9. PMID: 15895150.

11- Ajami BA, Shabzendedar M, Rezay YA, Asgary M. Dental treatment needs of children with disabilities. J Dent Res Dent Clinic Dent Prospects. 2007 Summer 1(2):93-8. doi: 10.5681/joddd.2007.016. Epub 2007 Sep 10. PMID: 23277841; PMCID: PMC3525932.

12- Murshid, E.Z., 2016. Children's ages and reasons for receiving their first dental visit in a Saudi community. Saudi Dental Journal, 28(3), pp.142–147.

13- American Dental Association, 2016, Vol. 137.

14- Alhabdan YA, Albeshr AG, Yenugadhati N, Jradi H. Prevalence of dental caries and associated factors among primary school children: a population-based cross-sectional study in Riyadh, Saudi Arabia. Environ Health Prev Med. 2018 Nov 30; 23(1):60. doi: 10.1186/s12199-018-0750-z. PMID: 30497366; PMCID: PMC6267843.

15- Makkar & Indushekar 2019. A cross sectional study to evaluate the oral health status of children with intellectual disabilities in the National Capital

Region of India (Delhi-NCR). J Intellect Disabil Res. 2019 Jan; 63(1):31-39.

16- Mohammed, M. & Mohamed, Y., 2020. Birth Order Effect on Oral Health in a Group of Egyptian Children. Egyptian Dental Journal, 66(1), pp.35–40.

17- Mahejabeen R, Sudha P, Kulkarni SS, Anegundi R. Dental caries prevalence among preschool children of Hubli: Dharwad city. J Indian Soc Pedod Prev Dent. 2006 Mar; 24(1):19–22.

18- Kurian, Jerin & Renganathan, Sajeev & Kayalvizhi, Gurusamy & G S, Prathima & Mohandoss, Suganya. (2016). Association between early childhood caries and age and gender specific height, weight and mid upper arm circumference of school children in puducherry- "a comparative study". Biology, Engineering, Medicine and Science Reports. 2. 13-17. 10.5530/BEMS.2016.1.

19- Ferraro, M. & Vieira, A.R., 2010. Explaining Gender Differences in Caries: A Multifactorial Approach to a Multifactorial Disease. International Journal of Dentistry, 2010, pp.1–5.

20- Zhou, N., Zhu, H., Chen, Y. Dental caries and associated factors in 3 to 5-year-old children in Zhejiang Province, China: an epidemiological survey. BMC Oral Health 19, 9 (2019). https://doi.org/10.1186/s12903-018-0698-9

21- Omar, O., Mohamed, Y. & Abd El-Fatah, M., 2019. Oral Health Status and Dental Treatment Needs of Preschool Children in 6th October City, Egypt. Egyptian Dental Journal, 65(1), pp.49–56.

22-Llena C, Calabuig E, Sanz JL, Melo M. Risk Factors Associated with Carious Lesions in Permanent First Molars in Children: A Seven-Year Retrospective Cohort Study. Int J Environ Res Public Health. 2020 Feb 22; 17 (4):1421. doi: 10.3390/ijerph17041421. PMID: 32098396; PMCID: PMC7068253.

23- Colak H & Dülgergil, Early childhood caries update: A review of causes, diagnoses, and treatments . J Nat Sci Biol Med. 2013 Jan; 4(1):29-38.

24- Baker, S.D., Lee, J.Y. & Wright, R., 2019. The Importance of the Age One Dental Visit. American Academy of Pediatric Dentistry, pp.1–16.

25- Mileva, S.P. & Kondeva, V.K., 2010. Age at and reasons for the first dental visit. Folia medica, 52(4), pp.56–61.

26- Prakash B. & J Cutan. 2010 Sep; 3(3):151-5. doi: 10.4103/0974-2077.74491. PMID: 21430827; PMCID: PMC3047732.

27- Mota-Veloso I, Soares ME, Alencar BM, Marques LS, Ramos-Jorge ML, Ramos-Jorge J. Impact of untreated dental caries and its clinical consequences on the oral health-related quality of life of schoolchildren aged 8-10 years. Qual Life Res. 2016 Jan; 25(1):193-9. doi: 10.1007/s11136-015-1059-7. Epub 2015 Jul 2. PMID: 26135023.

28-Wyne, Amjad & Alhammad, Nouf & Splieth, Chritian. (2017). Dental caries and related risk factors in Saudi cerebral palsy children. Neurosciences. 22. 282-286. 10.17712/nsj.2017.4.20170191.