BULLETIN OF STOMATOLOGY AND MAXILLOFACIAL SURGERY
Volume 21, Issue 11

DOI: 10.58240/1829006X-2025.21.11-30

ORIGINAL RESEARCH

PREVALENCE OF DENTAL CARIES IN A GROUP OF EGYPTIAN CHILDREN AND ITS RELATION TO TV AND OTHER SCREENS TIME AND SUGAR CONSUMPTION: (A CROSS-SECTIONAL STUDY)

Mona Elhadi Elamin Eltayeb[1], Sherine Badr [2], Hanaa Abdel Moniem[3]

[1] Master candidate in Pediatric Dentistry and Dental Public Health, Faculty of Dentistry, Cairo University, Egypt.

[2] Professor of Pediatric Dentistry and Dental Public Health, Faculty of Dentistry, Cairo University, Egypt.

[3] Lecturer of Pediatric Dentistry and Public Health, Faculty of Dentistry, Cairo University, Egypt.

***Corresponding author:** Mona Elhadi Elamin Eltayeb Faculty of Dentistry, Cairo University, Egypt. E-mail mona.elhadi.elamin@gmail.com

Received: Oct.23 2025; **Accepted:** Nov. 22, 2025; **Published: Nov** 29,2025

ABSTRACT

Background: The current study aimed to measure the prevalence of dental caries in a group of Egyptian children aged six to eight years old and its relation to screen time, sugar consumption and dental neglect.

Methods: The present study was conducted on two hundred ninety seven children aged from six to eight years old, attending the Outpatients' Clinic of Pediatric Dentistry and Dental Public Health Department, Faculty of Dentistry, Cairo University. A thorough assessment chart was recorded by the parents, which included five sections, the first assessed demographic data, the second described the dental neglect scale, the third assessed food consumption, the fourth evaluated screen time behavior, the fifth included intraoral examination which was conducted using the Decayed, Missing, Filled Teeth (DMFT) and decayed, extracted, filled teeth (deft) indices.

Results: The prevalence of dental caries in our study sample was 100% using the DMFT\deft indices, and was statistically significantly associated with age, parental education, frequency of tooth brushing, type and frequency of snacking, dental neglect scale, and screen time. Around 80% of children used screens more than 2 hours per day. It was found that children with non-working mothers spent more time on screens compared to those with working mothers. A statistically significant relationship was found between screen time, dental neglect, and Age.

Conclusion: Increased prevalence of dental caries is associated with high sugar consumption, dental neglect scale, and increased screen time. Minimizing sugar consumption and enhancing nutritional knowledge were considered helpful measures to reduce the risk of dental caries and enhance oral health in children.

***Keywords*:** Prevalence, dental caries, sugar consumption, DMFT, screen time.

INTRODUCTION

Dental caries is a dynamic disease that destroys the organic part of the tooth (collagen fibers) and demineralizes the inorganic part.[1] It is a multifactorial disease that could be caused by an infectious agent, hereditary factor, or environmental factor. Dietary practices, sugar consumption, and risk variables that are genetic, social, cultural, environmental, and biological interact in a complicated way. Together with time, these elements encourage the bacteria present in the collected dental plaque, which starts dental decay. Age was therefore thought to be a major factor influencing the frequency of dental caries in children. [2] There are numerous ways to categorize dental caries, it could be categorized based on where they occur (Location), when they start (onset), and how quickly they advance (progression). According to the rate of progression, dental caries could be further classified into acute, chronic, or arrested caries. The acute form of dental caries happens very quickly and severely.

Children are more susceptible to developing acute caries because of internal tooth variables like the level of tissue mineralization or external factors like eating refined carbohydrates often in between meals and not practicing good oral hygiene. [3]

The prevalence of dental caries showed fluctuating patterns between developed and developing countries as well as between different socioeconomic groups within the same state. The prevalence of dental caries should be evaluated on an ongoing basis for the planning and implementation of effective children's oral health and awareness programs.[4] Indices and techniques

for surveying the extent of dental diseases were developed in the first part of the 20th century. The 1950s saw the start of modern epidemiological research, and after 1960, numerous trustworthy studies were carried out.[3]

The Decayed, Missing, and Filled Teeth (DMFT) index had been the most popular and the gold standard for decades, according to the World Health Organization (WHO). Even for population-based surveys, the index demonstrated good levels of repeatability and ease of use. [5]

Screen time (ST) has many definitions, The term "Screen Time" describes the length and range of online activities performed using digital devices and includes both utilizing digital devices for work and for playing (gaming or social media usage) as well as for leisure and amusement. Computers and other such screen-equipped devices were all considered electronic devices.[6] The WHO defined Screen Time as "Time spent passively watching screen-based entertainment (TV, computer, mobile devices)". This excludes games that involve movement or physical effort, such as active screen-based games. [7]

The World Health Organization had recommended guidelines regarding ST. Children ages 3 to 4 should not spend more than an hour on sedentary screen time (including watching television (TV) or playing video games). Long periods of sedentary screen time should be switched with more active play, and young children should obtain adequate, good-quality sleep. For a child's development, high-quality sedentary time spent with a caregiver on interactive activities that do not involve screens is crucial.[8]

Children's diet quality suffers when they watch TV during mealtimes, since it was linked to increased consumption of highly processed foods. [9] It was discovered that watching TV during mealtimes lowered the quality of one's diet by increasing the intake of sugar-sweetened beverages and consuming more high-fat, high-sugar foods while decreasing the number of fruits and vegetables. [10] The food industry promoted children to consume high-sugar foods through TV, which might be linked to dental caries.[11] Increased screen time was associated with mental health difficulties, increased body mass index (BMI) as well as decreased physical activity.[12]

Parents and other caregivers should attend to their children's medical appointment, neglecting to do so is referred to as dental neglect. Maintaining oral health and avoiding childhood caries development greatly depend on the attitudes, knowledge, and beliefs of parents toward oral and dental health. The Dental Neglect Scale (DNS) is a valuable instrument for assessing dental neglect and determining the cause of children's poor oral health. [13]

To the best of our knowledge no study has been conducted to assess the relation between dental caries, sugar consumption, screen time and dental neglect in Egypt. Thus the aim of this cross-sectional study was to detect the prevalence of dental caries in a group of Egyptian children aging from six to eight and detect its relation to screen time, sugar consumption and dental neglect.

MATERIALS AND METHODS

Study Design and Setting

This cross-sectional study was conducted to assess the prevalence of caries and its relation to screen time, sugar consumption, and dental neglect among a group of Egyptian children, ages six to eight years, who attended the Outpatients' Clinic of Paediatric Dentistry and Dental Public Health Department, Faculty of Dentistry, Cairo University.

Study population and Eligibility criteria:

Around two hundred ninety-seven patients were selected from the Outpatients' Clinic of the Pediatric Dentistry and Dental Public Health Department, Faculty of Dentistry, Cairo University during the period from September to November 2024, according to the following inclusion and exclusion criteria (fig. 1):

Inclusion Criteria:

1. Child with mixed dentition aged from 6-8 years old.
2. Positive subject acceptance for participation in the study.
3. Access to all types of screens.
4. Both genders.

Exclusion Criteria:

1. Child with a dental emergency.
2. Child with a psychological problem.
3. Child with a chronic illness.

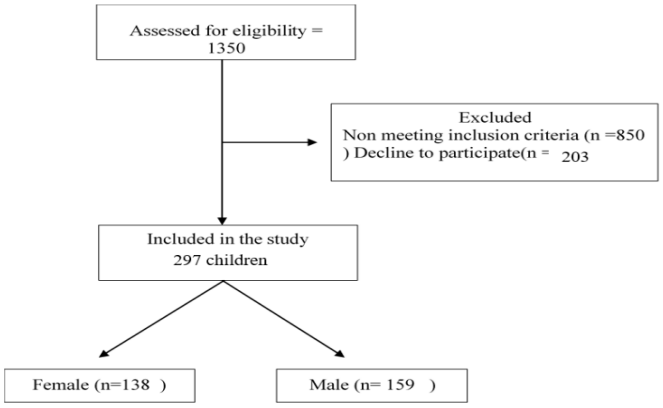

Figure 1. Flowchart of the study

Informed Consent:

Before clinical examination, the aim and the procedures of the study were explained to the caregiver, the benefits of being enrolled in the study were highlighted and the voluntary and confidential nature of their participation were explained to the guardian and the children in a simple standardized way, then a written consent was obtained. Verbal assent was obtained from the children

Clinical examination:

The patient assessment chart consisted of five sections, the questionnaire which included the first four sections was answered by the parents, and the first one was concerned with the demographic data including name, age, gender, child order in the family, number of siblings, and parent educational level. The second section described the dental neglect scale which contained a comprehensive questionnaire in which dental neglect was investigated by capturing parental responses to seven statements, using a Likert scale ranging from one ("definitely no") to five ("definitely yes"). [14]

The third section was the food questionnaire which assessed the usual consumption of food items (fruits, vegetables, sweets, soft drinks), The health behaviour in school aged children food frequency questionnaire (HBSC FFQ) was used to assess the frequency of intake by asking "On average, how many times a week do you usually eat or drink……" and parents could select one of the following response categories: 'none', 'less than once a week', 'once per week', '2 to 4 days a week', '5 to 6 days a week', 'once a day', and 'more than once a day'. The fourth section was the screen time, and it was taken from the answers provided by the parents to three distinct questions. Each question asked participants about their screen behavior separately for weekdays and weekends with nine response options. Then the answers to the three questions were processed as follows (i.e. 'None at all' = 0, 'Half an hour a day' = 0.5, About an hour a day' = 1.0, etc.) it calculated a sum score measuring screen time for weekday and weekend separately. This sum score was then used to create an average mean (i.e. mean = [5 × weekday +2 weekend day]/7 days; to reflect the average daily screen time. [16]

The fifth section was clinical examination recording dental caries using: DMFT/ deft index: according to criteria suggested by WHO, 2003.

Children whose parents consented to participate in the survey were examined, Prior to performing a dental examination, each child was asked to rinse his mouth with water. Oral examination of children was conducted on the dental unit using a disposable mouth mirror and blunt ball-ended probe (0.5 mm). Dental caries status was measured according to the WHO criteria by the principal investigator and was recorded in the patient assessment chart.

Statistical Analysis

Data were transferred to the statistician blindly and Categorical data were represented as frequency (n) and percentage (%) and were analyzed using chi- square/Fisher's exact tests. Numerical data were analyzed using an independent t-test/ Mann-Whitney U test according to data distribution of normality.The significance level was set at $p \leq 0.05$ for all tests. Statistical analyses were performed with IBM SPSS Statistics Version 26 for Windows. Numerical data was presented as mean+SD or median (IQR) according to the test of normality, in addition to range. Numerical data was compared between 2 groups using independent samples t-test or Mann - whitney U test while it was compared between 3 or more groups using one-way ANOVA or independent samples Kruskal Wallis test according to the test of normality: in addition to spearman's correlation.

RESULTS

Demographic data

There were 159 boys (53.50%) and 138 girls (46.50%) in the present study. There was no statistically significant difference in gender (P = 0.223). Mean age of children in the present study was 6.7 ± 0.89 years.

Dental neglect scale:

The Mean DNS scale was 19.4+5.4, while Median was 18 (15:24) with range 10:31.

Food consumption frequency

Concerning fruit consumption per week

there was a statistically significant difference among variation of fruits consumption (P<0.001), where 41.8% of children ate fruit "2-4 days a week", 18.5% of them had fruits "5-6 days per week", 15.5% had fruits every day (once per day). While only 4.7% of children never ate fruits and 9.8% and 7.7% had fruit once a week or less than once a week. (fig. 2)

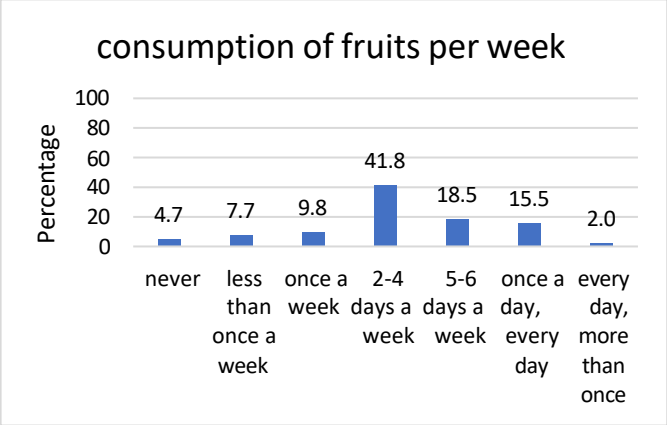

Figure2. Bar chart illustrating percentage of fruits consumption per week

Regarding Vegetables consumption per week:

There was a statistically significant difference among variation of vegetables consumption (P<0.001), where 45.5% of children ate vegetables "once a day, every day", 23.6% of them had vegetables "2-4 days per week", 15.2% had vegetables "5-6 days a week". While only 5.1% of children had vegetables once a week and also 5.1% ate vegetables every day, more than once. However, only 3.4% never eat vegetables and 2.4% had vegetables less than once a week (fig. 3).

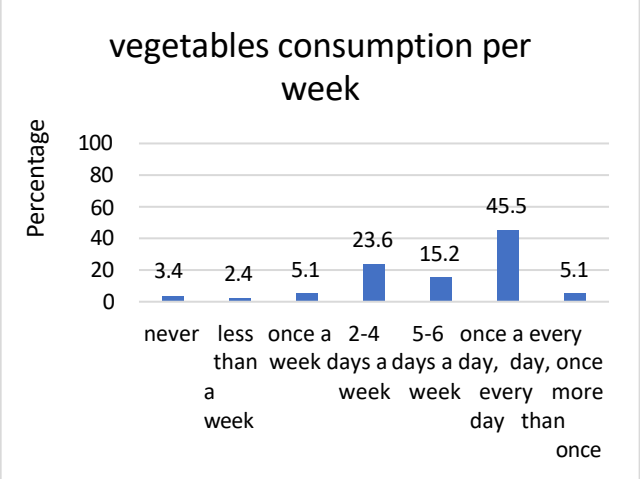

Figure 3. Bar chart illustrating percentage of vegetables consumption per week

Regarding sweets consumption per week

There was a statistically significant difference among variation of eating sweets (candy or chocolate)(P<0.001), where third of children (33.7%) ate sweets once a day (every day) and about quarter of the children participating in the study (26.3%) ate sweets more than once a day (every day). About fifth of the children (20.2%) had sweets "2-4 days per week", 9.1% had sweets 5-6 days a week. While only 1.0% of children never ate sweets and 6.4% and 3.4% had had fruits once a week or less than once a week. (fig. 4)

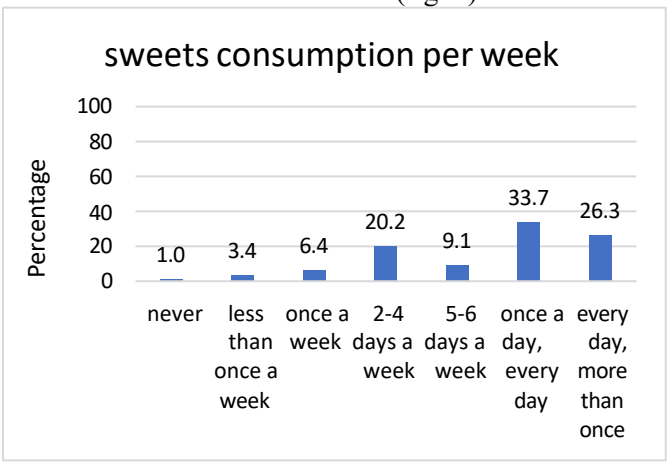

Figure 4. Bar chart illustrating percentage of sweets consumption per week.

Concerning Cake or sugar containing drinks consumption per week:

There was a statistically significant difference among variation of eating cakes or having sugar-containing drinks (P<0.001), where 28.6% of children never ate cakes or had sugar-containing drinks and fifth of them; 20.5% and 18.9% ate cake or had sugar containing drinks "2-4days a week" and "once a week" respectively. 12.5% had cakes of sugar containing drinks less than once a week, while 8.1%, 8.8% and 2.7% had cakes and sugar-containing drinks "5-6 days per week", "once a day, every day" and " more than once a day, every day" respectively. (fig. 5)

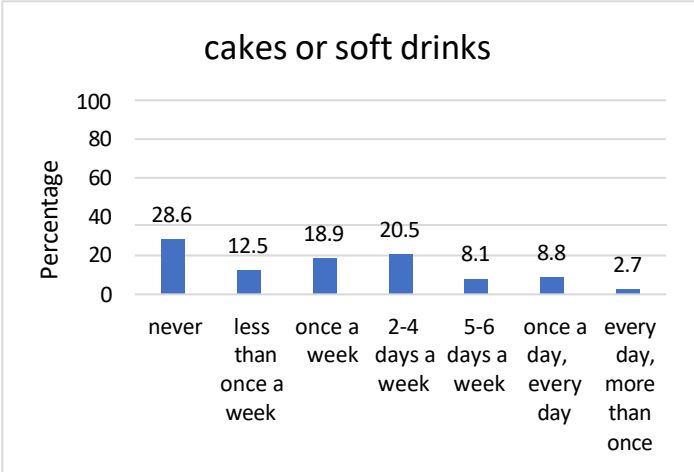

Figure. 5. Bar chart illustrating percentage of eating cakes or having sugar-containing drinks per week.

Screen time activity

The median of weighted mean TV watching hours was

3.45 hours with interquartile range (2.18:4.9) hours per day. Whereas the median of weighted mean smart-screen use hours was 3.42 hours with interquartile range from 2.2 hours to 4.6 hours per day. And the median of weighted mean electronic use hours was 3.5 hours per day with interquartile range from 2.2 hour to 4.8 hours per .

Dental caries

The prevalence of dental caries was 100% **.**

Table 1. Summary statistics for dental caries (DMF, DEF and caries index)

	Mean ± Sd	Median (IQR)	Range
DMF	1.6±2.6	0(0:2)	0:14
Caries index	7.2 ±3.2	8(4:9)	0:18

Correlation between dental caries index and the demographic characteristics of the study participants

No statistically significant association between dental caries index and each of gender, number of brothers/sisters and order among siblings. While there was a significant association between dental caries, parental education and mothers' work. (Table 2)

Table 2.Showing relations between dental caries index and demographics of study participants (n=297)

		Dental Caries Index			
		mean+sd	**median (IQR)**	**range**	**p-value**
gender	Male	7.5+3.2	8(5:9)	0:18	0.449
	Female	7.2+3.1	8(5:9)	0:18	
mother	not educated	6.3+2	7(6:8)	2:9	<0.001*
	Primary school	8.1+3	8(6:9)	2:18	
	Preparatory school	9+3.5	8.5(8:10)	0:18	
	secondary school	6.5+4.1	5(3:9)	2:16	
	Diploma	6.4+2.5	7(5:8)	0:12	
	University	7.4+3.2	8(5:9)	2:16	
father	not educated	11.8+4.1	12(8:16)	6:18	<0.001*
	Primary school	10+1.4	9(9:12)	9:12	
	Preparatory school	7.4+2.2	8(6.5:8)	2:11	
	secondary school	6.3+2.5	6(4:9)	2:11	
	Diploma	6.7+2.6	7(5:9)	0:12	
	University	6.5+2.6	7(4:8)	2:11	
work	house-wife	7.5+3.1	8(5:9)	0:18	<0.001*
	working mother	5.5+3.6	4(3:8)	0:16	
Order among siblings	Eldest	7.1+3.1	8(5:9)	0:18	0.5
	middle	7.2+3.1	8(5:9)	1:18	
	youngest	7.6+3.4	8(5:9)	0:18	
number of brothers/sisters	less than 2	7.5+3	8 (6:9)	02:18	0.870
	2 or more	7.3+3.2	8 (5:9)	00:18	

There was a statistically significant negative correlation between dental caries and parental education. As the level of maternal or paternal education increases; the dental caries index decrease. There was a weak statistically significant correlation between dental caries index and age (Table 3).

Table 3. Showing the correlation index and age between dental caries

		Age
Dental Caries Index	**Correlation Coefficient***	0.213
	p-value	<0.001*

Correlation between dental caries index and DNS

The study results revealed significant strong positive correlation between dental caries and all items of dental neglect scale except "Does your child need dental care, but you postpone it?" (Table 4)

Table4.Showing relation between dental caries index and each question of dental neglect scale(n=297)

Dental Caries Index		mean (sd)	median (IQR)	range	p-value*
your child maintains his home dental care?	Definitely no	11.9+2.6	11(10:13)	9:18	<0.001*
	No	9.1+1.4	9(9:9)	8:16	
	In between	7.6+1.4	8(8:8)	3:9	
	Yes	5.6+1.9	6(4:7)	2:8	
	Definitely yes	4.4+1.8	5(3:6)	0:7	
your child receives dental care he/she should?	Definitely no	11.5+2.6	11(10:12)	9:18	<0.001*
	No	9.2+1.6	9(8:9)	8:16	
	In between	7.7+1.3	8(7:8)	2:9	
	Yes	5.8+1.9	6(4:7.5)	0:8	
	Definitely yes	4.2+1.7	4(3:5)	0:7	
	Definitely no	7.4+3.6	8(5:9)	0:18	0.724
Dental Caries Index		**mean (sd)**	**median (IQR)**	**range**	**p-value***
your child needs dental care but you put it off?	No	7.3+2.7	8(5:9)	2:16	
	In between	6.7+2.7	7(5:9)	2:13	
	Yes	7.3+2.8	8(6:8)	1:16	
	Definitely yes	7.9+2.6	9(5:10)	3:11	
your child need dental care but he/she puts it off?	Definitely no	3.1+1.2	3(3:4)	0:5	<0.001*
	No	6.2+1.6	6(5:8)	2:8	
	In between	6.9+1	7(6:8)	4:8	
	Yes	9.1+1	9(8:9)	8:12	
	Definitely yes	11+2.8	10(9:12)	8:18	
your child brush as well as he/she should?	Definitely no	3.3+1.3	3(3:4)	0:5	<0.001*
	No	5.3+1.3	5(5:6)	3:9	
	In between	6.9+1.1	7(7:7)	4:9	
	Yes	8.4+1.3	8(8:9)	7:16	
	Definitely yes	10.6+2.6	10(9:12)	8:18	
Your child controls meal snacking as well as he/she should?	Definitely no	12+2.8	11(10:13)	6:18	<0.001*
	No	8.9+0.8	9(9:9)	6:10	
	In between	7.8+1	8(8:8)	4:9	

Correlation between dental caries index and Food consumption frequency

A statistically significant relation was revealed between dental caries index and all items of food consumption frequency except " How many times a week does your child eat cake or other soft drinks that contain sugar?"

The study revealed a significant positive correlation between dental caries and sweets consumption. While there was a significant negative correlation between dental caries and fruit and vegetable consumption (Table 5).

Table 5. Showing the correlation between dental caries, fruits, vegetables and sweet consumption

		Fruits	vegetables	Sweats
Dental Caries Index	**Correlation Coefficient**	-0.299	-0.214	0.504
	p-value	<0.001*	<0.001*	<0.001*

Correlation between dental caries index and ST

A moderate Statistically significant correlations was revealed between dental caries index and each of average TV watching time, average smart screen watching time, average electronics watching time (Table 6).

Table 6. Showing the correlation between dental caries and average screen-watching time (TV, smart phones and electronics)

		Average screen-watching time		
		TV	**Smart phones**	**Electronics**
Dental Caries Index	**Correlation Coefficient***	0.479	0.444	0.481
	p-value	<0.001*	<0.001*	<0.001*

Correlation between ST, demographic characteristics of the study participants and DNS

The study results showed a statistically significant positive correlation between age and average screen-watching time (P<0.001). The study also revealed that children of working mothers had an average watching-screen time less than that of children of non-working mothers, which was statistically significant (P<0.001). Regarding ST and DNS a moderately positive statistically significant relation was found (P<0.001).

DISCUSSION

Dental caries is a complex condition that is impacted by a number of biological, behavioral, social, and genetic factors as well as interactions between teeth, biofilm, and dietary factors. It is no longer considered an infectious disease but rather a non-communicable disease (NCD) strongly related to modifiable behavioral risk factors. [17-18]

Given the increasing incidence and prevalence of dental caries and its detrimental effects on people's health and quality of life, it's critical to create efficient oral health management plans.[18]

The present study design was an observational cross-sectional which is the most suitable type of study for determining the prevalence of relatively persistent conditions like dental caries. The participants were chosen based on inclusion and exclusion criteria, and the outcome was measured once at a single point in time. Thus providing a hypotheses generating associations between exposure and outcome.[19]

After the completion of the diagnosis, a detailed explanation of each chart was given to the parent/guardian explaining the amount and severity of the decay, appropriate treatment options, preventative measures, oral hygiene instruction, and proper dieting advices in order to avoid future caries development, as many studies have suggested that educating the parents led to better dental and oral health behaviors and significantly enhanced their cooperation.

In this study, the prevalence of dental caries was 100%, which was in agreement with the results of Ingle et al., 2014 [20], This finding could be attributed to the fact that the study sample was collected from patients waiting for treatment at the Outpatients' Clinic of the Pediatric Dentistry and Dental Public Health Department, Faculty of Dentistry, Cairo University. These findings were not in compliance with Bassa et al., 2023[21] who reported a prevalence of 15.6% among children in southern Ethiopia. This prevalence was lower than what was reported by the WHO on oral health among school children (60–90%) worldwide.[22] This is probably due to economic, socio-demographic, and dietary behaviors. [21] Regarding gender distribution, 53.50% of the participants were males while 46.50% were females. The results of this study showed no statistically significant difference between both genders regarding the prevalence of dental caries. These results were in accordance with Kirthiga et al., 2019.[26] which may be attributed to the fact that young children with primary dentition lack the choice regarding their dietary habits and were not accountable for their

daily oral hygiene.

This showed that risk factors were directly affected by parents or guardians, which might indicate that gender susceptibility to dental caries is absent.[27] On the other hand Sai et al., 2023 reported a statistically significant correlation between gender and dental caries prevalence, with females showing a higher prevalence than males.[28]

The mean age of children in the present study was 6.7 ± 0.89 years showing the importance of early caries detection especially in newly erupted first permanent molars.[5] In this study there was a positive correlation between age and dental caries, which was in accordance with Benelli et al., 2022 & Mohammed & Mohamed, 2020. [23-24.] This was probably due to the cumulative effect of dental caries.[25]

Concerning the order of children in the family, 114 (38.4%) of the study sample were the first child, while 93 (31.3%) children were the middle children and 90 (30.3%) were the youngest children. No statistically significant relation was found between dental caries and order of children among family which was in compliance with Mohammed & Mohamed, 2020.[24] This might be attributed to the fact that caries risk is more family-dependent rather than directly related to birth order itself. [29] In contrast to Yahya, 2024 which revealed that childbirth order had a significant impact on dental caries.[30] This might be due to the DMFS index used in this study which gives more details and a higher score.

In this study, it was observed that the mean DNS was 19.4, which was high, and was in accordance with Ishani Sharma et al., 2019, [31] and was found to be statistically associated with higher DMFT and deft scores, emphasizing that an increase in caries severity correlates with a higher dental neglect score.[32] Untreated dental caries could be a hint of a general neglect[33].This could be attributed to the low socioeconomic status that makes dental treatment unaffordable [34], and low maternal educational levels. [32]

Slightly more than 16% of the study participants answered "no" to the item " controlling snacking between meals correctly as it should " or "definitely no"; while only 21.2% and 22.9% answered "yes" and "definitely yes" respectively. There was a strong positive, statistically significant relation between the frequency of snacking and dental caries, which was in accordance with Boekoesoe et al., 2023 who suggested that snacks, irrespective of their sugar content, might aid in the colonization of S. mutans, thereby increasing the risk of dental caries.[35] In contrast, Kiftiyah & Nur Rosyidah, 2022 found no relationship between the frequency of snacking and the incidence of dental caries in preschool children. This was attributed to the fact that not all snacks can cause dental caries, snacking on fresh fruit may reduce the prevalence of dental caries .[36]

Concerning screen time, over 80% of children used screen media devices for more than two hours every day. These findings were in line with Rodrigues et al., 2020 who revealed widespread usage of screen- based media among Portuguese children. [37] This increase in screen time was attributed to the COVID-19 pandemic that led to schools' closure and thus making children depend on screens for education and social interactions, and with the lockdown and the limited outdoor activities, children were forced to use screens for their entertainment. [38]

A statistically significant relation was found between screen time and mothers' employment status, where children of non-working mothers had longer screen time compared to those with working mothers. This came in accordance with Fujii et al., 2023 who attributed this to the fact that children with working mothers spend less time at home or have a stricter routine regarding screen time[39]. On the contrary, Xie et al., 2023 found that maternal employment was linked with increased children's Screen time[40].This difference might be due to the different working hours and job responsibilities and duties in China. According to this study the majority of mothers work informally and are more prone to work outside regular workdays and on weekends.

There was a statistically significant relationship between screen time and dental caries, which was in accordance with Xue et al., 2024 who claimed that children who use screens for over two hours daily had a higher dental caries index.[41] This could be explained by that children with higher screen time consumed more sugary and cariogenic foods as they were exposed to more advertisements about junk and sugary food, as well as snacking habits during screen use, and frequent and prolonged eating episodes, which further increased their caries development. [42] Additionally, food accumulation allowed for extended periods of food adhering to the less mineralized newly erupted teeth, increasing the acid attacks and leading to dental decay.[43]

Strengths and Limitations

The nature of the cross-sectional design restricted the ability to confirm the causality. The study relied on parental self–reported data only.

The sample was collected from the Outpatients' Clinic of Pediatric Dentistry and Dental Public Health Department, Faculty of Dentistry, Cairo University, which influenced the dental caries score and limited the generalization of the results of other less developed areas.

CONCLUSION

The caries prevalence using DMFT\deft in Egyptian children was 100%, and was positivelycorrelated with age, parental education, frequency of tooth brushing, type and frequency of snacking , DNS and ST. The caries prevalence using DMFT\deft in Egyptian children showed no correlation between gender, order of children among sibling and the residential area. Minimizing sugar consumption and enhancing nutritional knowledge were considered helpful measures to reduce the risk of dental caries and enhance oral health in children.

DECLARATIONS

Ethical statement

This study was reviewed and approved by the Dental Research Ethics Committee, Faculty of Dentistry, Cairo University on 28th of May, 2024, with approval number 27-5-24

Funding

This research did not receive any specific funding.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper

REFERENCES

1.Amza, O. E., Totan, A., Imre, M. M., Bencze, A., Maria, A., & Tancu, C. New aspects detached from the molecular landscape of dental caries process. Rjmp.Com.RoA TOTAN, MM IMRE, OE AMZA, A BENCZE, AMC TANCURomanianJouRnal of Medical PRactice, 2020•rjmp. Com.Ro, XV (4).

2.Quritum, S. M., Dowidar, K., Ahmed, A. M., & Omar, T. E. Impact of Oral Health Behaviours On Dental Caries In Children with Cerebral Palsy: A Case-Control Study. Alexandria Dental Journal, 2019; 44(1),1–6.

3.Ahmed, Y., Abd, M., & Rahman, E. Prevalence of Dental Caries Among a group of Preschool Children in El Suez City A dentist officer in the Egyptian armed forces,2019.

4.Abbass, M. M. S., Mahmoud, S. A., El Moshy, S., Rady, D., Abubakr, N., Radwan, I. A., Ahmed, A., Abdou, A., & Jawaldeh, A. Al. The prevalence of dental caries among egyptian children and adolescences and its association with age, socioeconomic status, dietary habits and other risk factors. A cross-sectional study, 2019; F1000Research, 8.

5.Babaei, M., Rueksomtawin Kildegaard, K., Niaei, A., Hosseini, M., Ebrahimi, S., Sudarsan, S. Angelidaki, I., & Borodina, I. Engineering Oleaginous Yeast as the Ortega, F. B., Ruiz, J. R., Martinez-Gómez,

6.Spohn, C.C. and Brennan, P.K. eds., 2020. Handbook on sentencing policies and practices in the 21st century. Routledge.

7.Bull, F. C., Al-Ansari, S. S., Biddle, S., Borodulin, K., Buman, M. P., Cardon, G., Carty, C. Chaput, J. P., Chastin, S., Chou, R., Dempsey, P. C., Dipietro, L., Ekelund, U., Firth, J., Friedenreich, C. M., Garcia, L., Gichu, M., Jago, R., Katzmarzyk, P. T., … Willumsen, J. F. World Health Organization 2020 guidelines on physical activity and sedentary behaviour. British Journal of Sports Medicine, 2020; 54(24), 1451–1462.

8.WOLD HEALTH ORGANIZATION. Guidelines on physical activity, sedentary behaviour and sleep. World Health Organization, 2019; 4.

9.Martines, R. M., Machado, P. P., Neri, D. A., Levy, R. B., & Rauber, F. Association between watching TV whilst eating and children's consumption of ultraprocessed foods in United Kingdom. Maternal & Child Nutrition, 2019; 15(4).

10.Shqair, A. Q., Pauli, L. A., Costa, V. P. P., Cenci, M., & Goettems, M. L. Screen time, dietary patterns and intake of potentially cariogenic food in children: A systematic review. Journal of Dentistry, 2019; 86, 17–26.

11.Silva, R. de N. M. T., Duarte, D. A., & de Oliveira, A. M. G. The influence of television on the food habits of schoolchildren and its association with dental caries. Clinical and Experimental Dental Research, 2020; 6(1), 24–32.

12.Nieto, A. and Suhrcke, M., 2021. The effect of TV viewing on children's obesity risk and mental well-being: Evidence from the UK digital switchover. *Journal of Health Economics*, *80*, p.102543.

13.Aydinoğlu, S., Arslan, İ., Bilgir, B. S., Yazar, M., & Karan, N. B. Do Parents' Dental Neglect and Anxiety Affect Their Children's Dental Neglect and Anxiety. Necmettin Erbakan Universitesi Dis Hekimligi Dergisi (NEU Dent J), Necmettin Erbakan,2024.

14.Yilmaz, N., & Avci, G. Exposure to screen time and dental neglect. Journal of Paediatrics and Child Health, 2022; 58(10), 1855–1861.

15.Vereecken, C. A., & Maes, L. A Belgian study on the reliability and relative validity of the Health

Behaviour in School-Aged Children food-frequency questionnaire. Public Health Nutrition, 2003; 6(6), 581–588

16.Rey-López, J. P., Vicente-Rodriguez, G., Ortega, F. B., Ruiz, J. R., Martinez-Gómez, D., De Henauw, S., Manios, Y., Molnar, D., Polito, A., Verloigne, M., Castillo, M. J., Sjöström, M., De Bourdeaudhuij, I., & Moreno, L. A. Sedentary patterns and media availability in European adolescents: The HELENA study. Preventive Medicine, 2010; 51(1),50–55.

17.Giacaman, R. A., Fernández, C. E., Sandoval, C. M., León, S., Manríquez, N. G., Echeverría, C., Valdés, S ,Castro, R. J., & Tessini, K.G. Understanding dental caries as a non- communicable and behavioral disease: Management implications. Frontiers in Oral Health, 2022; 3.

18.Kim, J.-G. Strategies for the Prevention of Dental Caries as a Non-Communicable Disease, 2023. Mukherjee, D., & Roy, S. Cross-sectional study. Translational Radiation Oncology, 2023; 237–241.

19.Mukherjee, D., & Roy, S. Cross-sectional study. Translational Radiation Oncology, 2023; 237–241.

20.Ingle, N. A., Dubey, H. V., Kaur, N., & Gupta, R. (2014). Prevalence of dental caries among school children of Bharatpur city, India. Journal of International Society of Preventive and Community Dentistry, 4(1), 52–55

21.Bassa, S., Workie, S. B., Kassa, Y., & Tegbaru, D. W. Prevalence of dental caries and relation with nutritional status among school-age children in resource limited setting of southern Ethiopia. BMC Oral Health, 2023; 23(1), 1–10.

22.World Health Organization, 2022. Global oral health status report: towards universal health coverage for oral health by 2030. Executive summary. World Health Organization.

23.Benelli, K. da R. G., Chaffee, B. W., Kramer, P. F., Knorst, J. K., Ardenghi, T. M., & Feldens, C. A. Pattern of caries lesions and oral health-related quality of life throughout early childhood: A birth cohort study. European Journal of Oral Sciences, 2022; 130(5), e12889.

24.Mohammed, M., & Mohamed, Y. S. A. Birth Order Effect on Oral Health In A Group Of Egyptian Children. Egyptian Dental Journal, 66(Issue 1-January (Orthodontics, Pediatric & Preventive Dentistry)), 2020; 35–40.

25.Elamin, A., Garemo, M., & Mulder, A. Determinants of dental caries in children in the Middle East and North Africa region: a systematic review based on literature published from 2000 to 2019. BMC Oral Health, 2021; 21(1), 1–30.

26.Kirthiga, M., Murugan, M., Saikia, A., & Kirubakaran, R. Risk Factors for Early Childhood Caries: A Systematic Review and Meta-Analysis Case Control and Cohort Studies. Pediatric Dentistry, 2019; 41(2), 95.

27.Papadaki, S., Pilalas, I., & Kang, J. Does Gender Contribute to Any Differences in Caries and Periodontal Status in UK Children? Archives of Intern. Medicine Research,2022;5(3),463–474.

28.Sai, A., Madhuri, N., & Kalla, K. Discrepancy in Caries Prevalence by Gender Among School-Going Children in the Population of Hyderabad: A Cross-Sectional Study. International Journal of Science and Healthcare Research (Www.Ijshr. Com), 2023; 8, 2455–7587.

29.Grieshaber, A., Haschemi, A. A., Waltimo, T., Bornstein, M. M., & Kulik, E . M. Caries status of first- born child is a predictor for caries experience in younger siblings. Clinical Oral Investigations, 2022; 26(1), 325–331.

30.Yahya, A. A. (2024). Impact of Child Birth Order on Dental Caries and Anxiety Level. Al-Salam Journal for Medical Science, 4(1), 83–87

31.Ishani Sharma, Pooja Chauhan, Virat Galhotra, Himanshu Duhan, & Manpreet Kaur. Dental Neglect among Children And Their Parents In District Panchkula. International Healthcare Research Journal, 2019; 2(11), 265–269.

32.Celikel, P., Ozturk, A. B., & Sengul, F. Dental Neglect Among Children in Eastern Turkey. Oral Health & Preventive Dentistry, 2025; 23, 135.

33.Kiatipi, M., Davidopoulou, S., Arapostathis, K., & Arhakis, A. Dental Neglect in Children: A Comprehensive Review of the Literature 2021.

34.Naga, S., Ambati, M., & Kalla, K. Dental Neglect in Pediatric Population — A Critical Issue Necessitating Revolutionary Solution Strategies: Assessment by Tools Like Dental Caries, Prostheses and Restorations in Primary Teeth. Journal of Oral Health and Community Dentistry 2024.

35.Boekoesoe, L., Amalia, L., Lareko, J. I., & Ahmad, Z. F. Hubungan Antara Jenis Makanan, Frekuensi Makan Dan Hygiene Gigi Dengan Kejadian Karies Gigi Pada Siswa. Madu: Jurnal Kesehatan, 2023; 12(1), 76–76.

36.Kiftiyah, K., & Nur Rosyidah, N. Relationship Between Cariogenic Food Consumption Patterns and Brushing With the Event of Dental Caries in Early Childhood. Jurnal Midpro, 2022; 14(1), 82–92.

37.Rodrigues, D., Rodrigues, D., Gama, A., Gama, A., Machado-Rodrigues, A. M., Nogueira, H., Silva, M. R. G., Silva, M. R. G., Rosado-Marques, V., Rosado-Marques, V., & Padez, C. Social inequalities in traditional and emerging screen devices among Portuguese children: A cross-sectional study. BMC Public Health, 2020; 20(1), 1–10.

38.Toombs, E., Mushquash, C. J., Mah, L., Short, K., Young, N. L., Cheng, C., Zhu, L., Strudwick, G., Birken, C., Hopkins, J., Korczak, D. J., & Perkhun, A. Increased screen time for children and youth during the COVID-19 pandemic. Covid19- Sciencetable.CaE Toombs, CJ Mushquash, L Mah, K Short, NL Young, C Cheng, L Zhu, G StrudwickScience Briefs of the Ontario COVID-19 Science Advisory Table, 2022•covid19- Sciencetable.Ca.

39.Fujii, M., Kawanishi, Y., Niwa, F., Hirabayashi, K., Kanatani, K. T., & Nakayama, T. Maternal factors and one-year-olds' screen time: A cross-sectional study using birth cohort data from the Japan Environment and Children's Study (JECS). Journal of Children and Media, 2023, 17(4), 523–537.

40.Xie, Q. W., Luo, X., Chen, R., & Zhou, X. Associations between parental employment and children's screen time: A longitudinal study of china health and nutrition survey. Ssph-Journal.OrgQW Xie, X Luo, R Chen, X ZhouInternational Journal of Public Health, 2023•ssph-Journal.Org, 67.

41,Xue, H., Wang, X., Lai, L., Li, Y., Huang,F., Ni, X., Tian, Y., Li, M., Fan, L., Yang, J., & Du, W. An Instrumental Analysis of the Triad Association Between Sugar-Sweetened Beverages, Screen Time, and Dental Caries in Adolescents. Future 2024, Vol. 2, Pages 149-163, 2(4), 149–163.

42.Gadhia, P. Impact of screen time, green time, exposure of cariogenic foods, and its association with dental caries in children up to 13 years: A cross- sectional study. Journal of Indian Society of Pedodontics and Preventive Dentistry, 2024; 42(Suppl 1), S98.

43.Garg, N., Khatri, A., Kalra, N., & Tyagi, R. The association of screen time with intake of potentially cariogenic food and oral health of school children aged 8–14 years—a cross-sectional study. Journal of Clinical Pediatric Dentistry, 2023; 47(5), 116–123.