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PREVALENCE OF EARLY CHILDHOOD CARIES AMONG SCHOOL CHILDREN IN TAJ ABAD PESHAWAR, PAKISTAN

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Abstract

Background: *Dental caries is described as an infectious microbiologic disease of the teeth, with Streptococcus mutans likely to be the primary causative agent. The condition causes the calcified tissues to dissolve and break down locally.*

Material and Methods: *There were 272 participants in this descriptive cross-sectional study, A non-probability convenience sampling technique was used. The institutional ethical review committee given its approval to this project. The community received a thorough explanation of study procedures and data usage for research. A Proforma consisting of ten questions was distributed to the participants. SPSS version 27 was used to analyze the data, and the results were shown as percentages and frequencies.*

Results: *The prevalence of Early Childhood Caries was diagnosed in (49%) participants out of 272 participants. There was (33.1%) age group 3-4 years, (33.8%) age group 4-5 years and (33.1%) age group 5-6 year. The (51.8%) participants were male and (48.2%) were female. The (50.7%) participants were breast feeding and (49.3%) participants were bottle feeding. (21.3%) participants were affected anterior teeth and (19.5%) participants were posterior teeth and (59.2%) participants are involved the anterior and posterior teeth (both).The (62.1%) participants have used proper tooth brush and (37.9%) participants do not use tooth brush. The participants that's involved upper jaw (18.8%) and participants involved lower jaw (8.8%) and participant that's involved the upper and lower jaw (both)(72.4%) in caries. The (62.5%) were used sweets and (37.5%) participants do not use the sweets.*

CONCLUSION: *In our study, early childhood caries primarily affected both upper and lower jaw, with 197(72.4%) participants affected. The caries mostly involved both the anterior posterior teeth of the participants. The ECC was most commonly observed in participants who brushed their teeth less frequently and did not maintain proper oral hygiene.*

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1.1 Introduction

Early childhood caries (ECC) is a common infectious disease affecting the primary teeth of young children and is characterized by the progressive demineralization and destruction of dental tissues. It commonly affects surfaces such as the labial surfaces of maxillary incisors and the buccal, lingual, and occlusal surfaces of primary molars. The disease may initially appear as dull white or brown spots along the gingival margin of the maxillary incisors and can progress to extensive destruction of the tooth crown. *Streptococcus mutans* is considered an important causative microorganism in dental caries, which remains one of the most prevalent oral health conditions worldwide (1).

The American Academy of Pediatric Dentistry (AAPD) defines ECC as the presence of one or more decayed, missing due to caries, or filled tooth surfaces in any primary tooth in a child aged 71 months or younger (2). ECC is particularly important during early childhood because untreated disease may result in pain, bacterial infection, impaired growth and development, premature tooth loss, speech difficulties, increased treatment costs, reduced confidence, and possible effects on the subsequent permanent dentition (3).

Children aged 12–30 months may demonstrate a characteristic pattern of ECC that differs from that of older children. The maxillary primary incisors and first primary molars are particularly susceptible, whereas the mandibular anterior teeth receive greater protection from the tongue and salivary glands (4). Several clinical patterns of ECC have been described, including nursing habit-associated caries, molar occlusal pit-and-fissure caries, and molar proximal caries. ECC may also present as smooth-surface, proximal/labial-lingual, or rampant caries, depending on its clinical distribution and severity (5,6).

The development of ECC is multifactorial and involves interactions between cariogenic microorganisms, fermentable carbohydrates, susceptible tooth surfaces, and time. Other contributing factors include the child's age and sex, socioeconomic status, birth order, feeding practices, oral hygiene, and oral healthcare-seeking behavior (11). Sweet foods, sugary toffees, bottle-feeding, visible plaque, and inadequate tooth cleaning may increase the risk of disease. Parental education is also associated with children's oral health, as greater parental education may improve health awareness and preventive practices (9).

Feeding practices may also influence the development of ECC. Frequent breastfeeding, particularly prolonged daytime and nighttime feeding, has been associated with ECC in some studies. During nighttime feeding, reduced salivary flow may allow milk residues to remain in the oral cavity and contribute to the development of dental caries (10). If ECC progresses, premature loss of primary teeth may contribute to malocclusion, speech difficulties, oral anxiety, and difficulties associated with dental treatment and school attendance (12).

The prevalence of ECC varies considerably between countries and populations. Reported prevalence ranges from 6.8–12% in England, 11–53.1% in the United States, and 36–85% in Asia (14). Studies from different countries have reported prevalence ranging from 40% in Nigeria to as high as 98% in Cambodia and Bosnia and Herzegovina (21). In Pakistan, studies conducted in Karachi have reported ECC prevalence of 29.1% and 50.1%, while studies conducted in dental hospitals in Peshawar have reported prevalence ranging from approximately 55% to 85% (5).

Given the high prevalence and preventable nature of ECC, early identification and prevention are essential. Preventive efforts should begin during pregnancy and continue throughout the perinatal period and early childhood through appropriate feeding practices, oral hygiene, fluoride use, and parental education (13). Therefore, assessing the prevalence of ECC in Taj Abad, Peshawar, is important for understanding the magnitude of the problem and for increasing awareness among parents, educators, and healthcare providers regarding early oral health and preventive practices.

1- MATERIAL AND METHODS:

This study follows descriptive cross sectional

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design which involves non probability convenient sampling technique consisted of 272 participants. This study was approved by institutional ethical review committee. Study protocols and the use of data for research were fully explained to the community. The participants were given a Performa of ten questions. This preform includes personal information such as gender and age. This perform is about oral health which covered topics such as tooth brushing, habits and clinic visit.

1.1 Study Setting:

The study was conducted at Private Schools in Taj Abad Peshawar.

1.2 Study Duration:

The duration of the study was 6 months (July 2024 to December 2024) and data was collected in August.

1.3 Study design:

This was a descriptive cross sectional study.

1.4 Statistical Analysis:

This data is statistically analyzed through spss 27 version excel and data is presented in the form of tables, graphs and pie charts.

1.4.1 Sample Size:

A total of 272 participants were selected for the study.

1.4.2 Sample size calculation:

The sample size for the study was be 272 using statistical formula n=p% (1-p %) (Z/e) 2
n=? , p= 23.5%= 0.23, z=1.96, e=0.05 Putting the value in formula, n=0.23(1-0.23) (1.96/0.05)
n=0.23(0.77) (3.84/0.0025) n= (0.177) (1536)
n=272

n =sample size, p=population size, z=level of confidence, e=marginal error

1.4.3 Sampling Technique:

A non-probability convenience sampling technique was used to collect data from the targeted population.

1.4.4 Inclusion Criteria:

(1) Children aged between 3- 6 years attend a private school in Taj Abad.

(2) Children whose parents or guardians provide information.

1.4.5 Exclusion Criteria:

(1) Children with developmental disorder of teeth.

(2) Children with erosion, abrasion and bruxism of this teeth.

1.4.6 Data Collection Procedure:

The study was approved by the Research Committee of School of Health Sciences Peshawar. Consent was issued upon acceptance which was submitted for data collection after approval by the concerned department, the data was collected through Proforma from parents of the children's. The information was collected through a pre- design Proforma from every participant in study.

1.4.7 Statistical Analysis

Statistical Package for Social Sciences (SPSS) version 27 was used for the analysis of the data. Percentage and frequencies are used in the current study to analyze for the results. Analyze data is presented in the form of graphs, charts and tables.

2- RESULTS

The prevalence of Early Childhood Caries was diagnosed (49%) participants out of 272 participants. There was (33.1%) age group 3-4 years, (33.8%) age group 4-5 years and (33.1%) age group 5-6 year. The (51.8%) participants have a male and (48.2%) are female participants. The (50.7%) participants are breast feeding and (49.3%) participants have bottle feeding. (21.3%) participants have affected anterior teeth and (19.5%) participants were posterior teeth and (59.2%) participants are involved the anterior and posterior teeth (both).The (62.1%) participants have used proper tooth brush and (37.9%) participants do not use tooth brush. The participants that's involved upper jaw (18.8%) and participants involved lower jaw (8.8%) and

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participant that's involved the upper and lower jaw (both)(72.4%) in caries. The (62.5%) were used sweets and (37.5%) participants do not use the sweets.

About the (10.7%) participants in every six months visit to the clinic and (34.9%) participants visit to the clinic in every twelve months and (54.4%) participants can never visit to clinic. The (41.2%) participants have used t tooth brush once a day and (27.2%) participants have used twice a day tooth brush and (31.6%) participants have rarely used. The (76.5%) have used soft tooth brush, (5.1%) participants used hard tooth brush and (18.4%) participants none used. The (32.0%) participants have use oral product other than toothpaste and (68.0%) do not used oral product other than toothpaste.

2.1 Age of the participants

This table presents the age distribution of participants in the study. Participants aged 3-4 years and 5-6 years each constitute 33.1% of the total sample, while those aged 4- 5 years represent 33.8%. The total number of participants is 272, accounting for 100% of the sample population.

Table 3.1: Age of the participants

Age in year	Frequency	Percentage%
3-4	92	33.1%
4-5	90	33.8%
5-6	90	33.1%
Total	272	100.0%

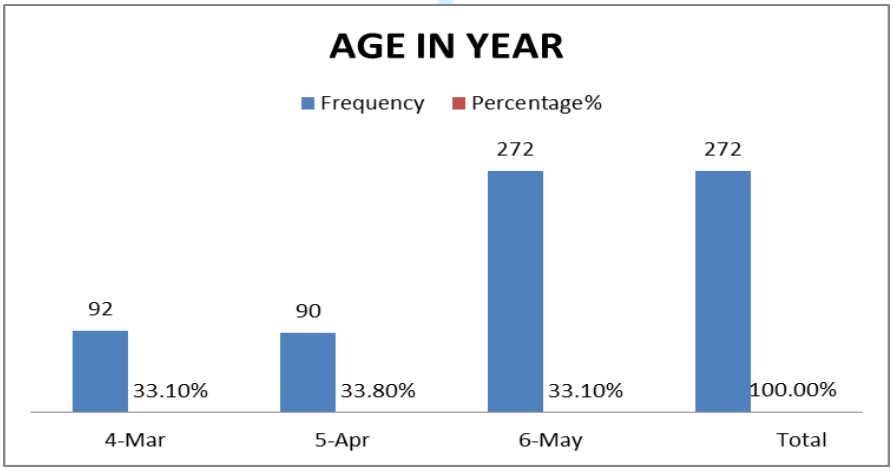


Figure 3.1: Age of the participants

2.2 Gender of the participants.

Out of 272 participants, 141(51.8%) were male and 131(48.2%) were female.

Table 3.2: Gender of participants.

Gender	Frequency	Percentage
Male	141	51.8
Female	131	48.2
Total	272	100.0

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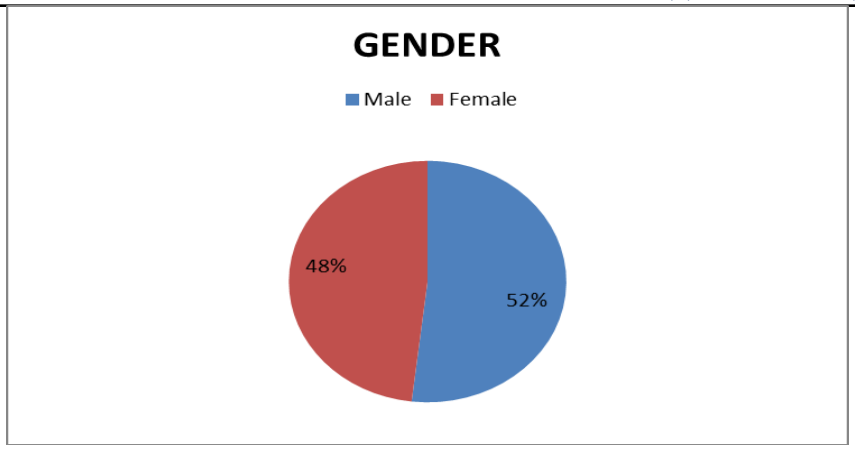


Figure 3.2: Gender of participants.

2.3 Frequency of ECC:

Out of 272 participants, (49.3%) of the children had experience ECC, while (50.7%) had not ECC.

Table 3.3: frequency of ECC

Early of childhood caries(ECC)	Frequency	Percentage
Yes	134	49.3
No	138	50.7
Total	272	100.0

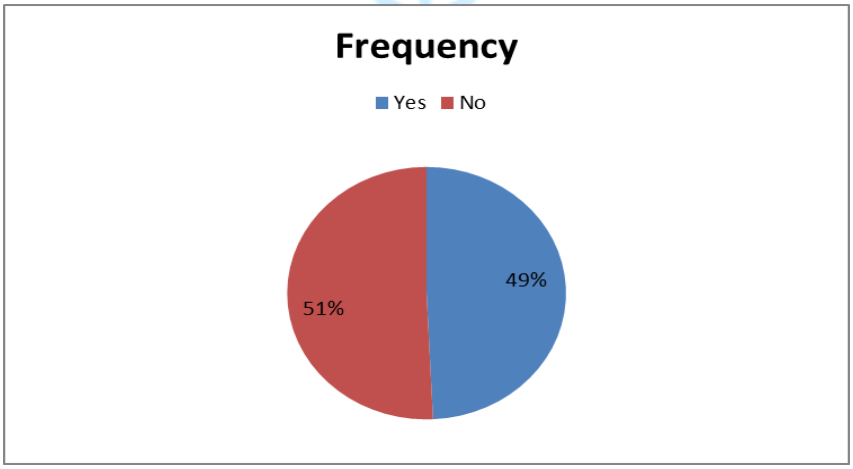


Figure 3.3: frequency of ECC

2.4 Habits of child feeding.

Out of 272 participants, (50.7%) of the children were breastfed, while (49.3%) were bottle fed.

Table 3.4 Habits of child feeding.

Habit of child feeding	Frequency	Percentage
Breast feeding	138	50.7
Bottle feeding	134	49.3
Total	272	100.0

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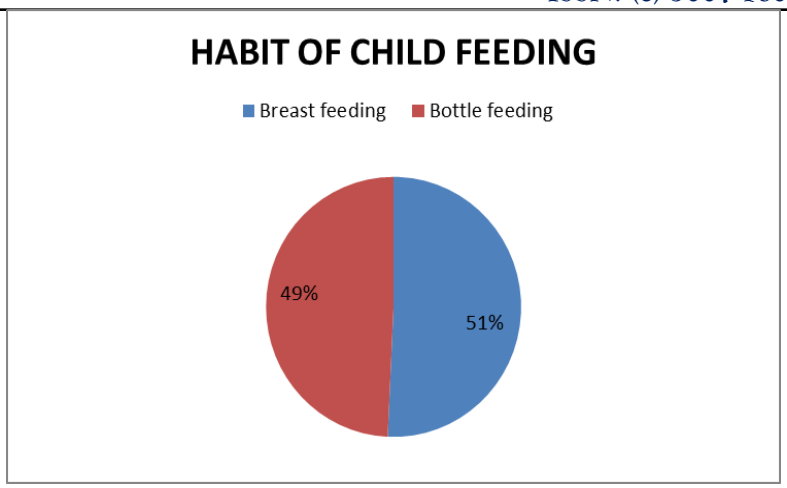


Figure 3.4 Habits of child feeding

2.5 Tooth Affected by ECC.

Out of 272 participants, (21.3%) of the children had anterior teeth affected, (91.5%) had posterior teeth affected, and (59.2%) had both anterior and posterior teeth affected.

Table 3.5 tooth Affected by ECC.

Affected anterior and posterior by Early childhood caries ECC	Frequency	Percentage
Front anterior	58	21.3
Back posterior	53	19.5
Both	161	59.2
Total	272	100.0

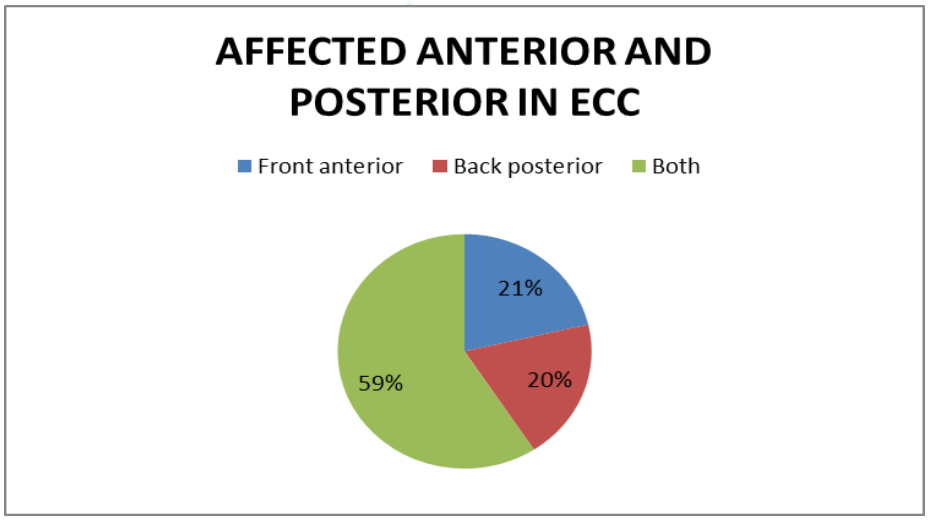


Figure 3.5 tooth Affected by ECC.

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2.6 Brushing habit.

Out of 272 participants, (62.1%) of the children used a proper tooth brush, while (37.9%) did not.

Table 3.6 Brush your teeth's.

Teeth Brushing	Frequency	Percentage
Yes	169	62.1
No	103	37.9
Total	272	100.0

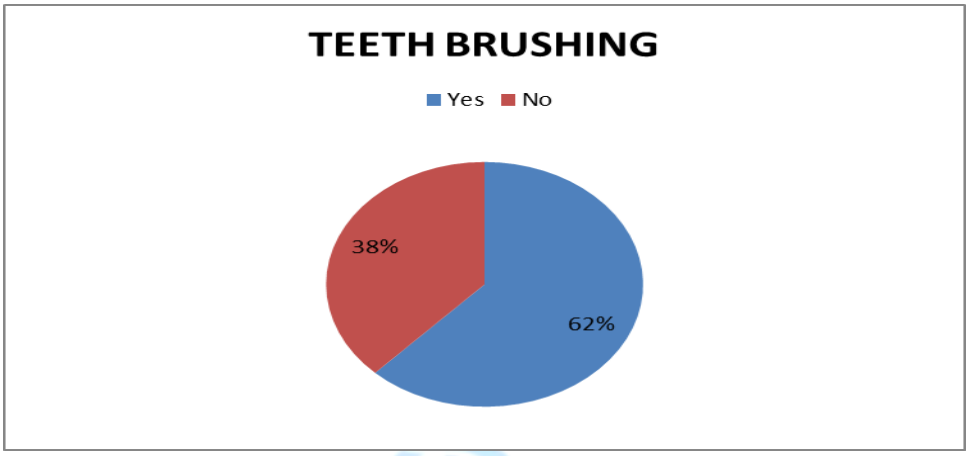


Figure Table 3.6 Brush your teeth's

2.7 Jaw affected by ECC.

Out of 272 participants, 51 (18.8%) children had caries in the upper jaw, 24 (8.8%) had caries in the lower jaw, and 197 (72.4%) had caries in both upper and lower jaw.

Table 3.7 jaws affected by Ecc.

Jaw involved in Early childhood caries	Frequency	Percentage
Upper	51	18.8
Lower	24	8.8
Both	197	72.4
Total	272	100.0

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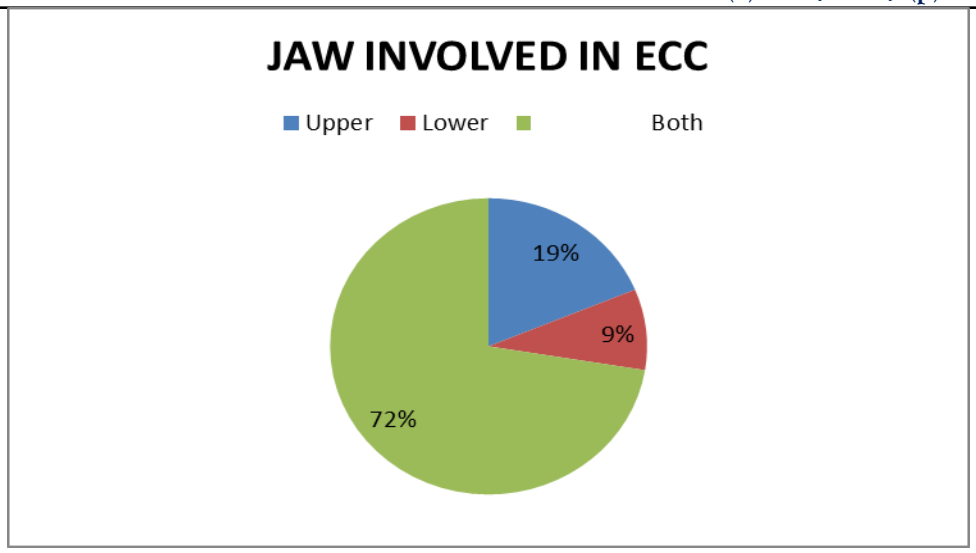


Figure 3.7 jaws affected by Ecc.

2.8 Sweet consumption.

Out of 272 participants, (62.5%) of the children consumed sweets, while (37.5%) did not.

Table 3.8: Eaten any sweets.

Eaten any sweet	Frequency	Percentage
Yes	170	62.5
No	102	37.5
Total	272	100.0

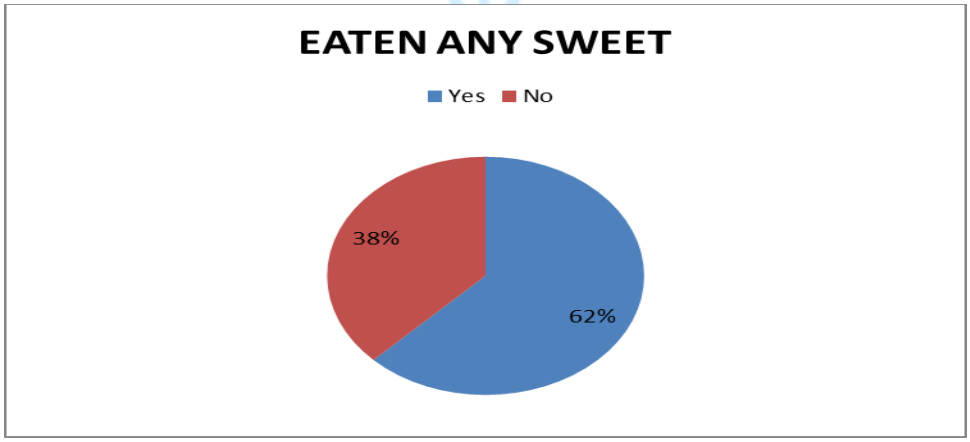


Figure 3.8: Eaten any sweets

2.9 Children visit to clinic.

Out of 272 participants, (10.7%) of the children visit the clinic every six months, (34.9%) visit the clinic every twelve months, and (54.4%) have never visited the clinic.

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Table 3.9 children Visit to clinic.

Visit to clinic	Frequency	Percentage
Every 6 month	29	10.7
Every 12 month	95	34.9
Never	148	54.4
Total	272	100.0

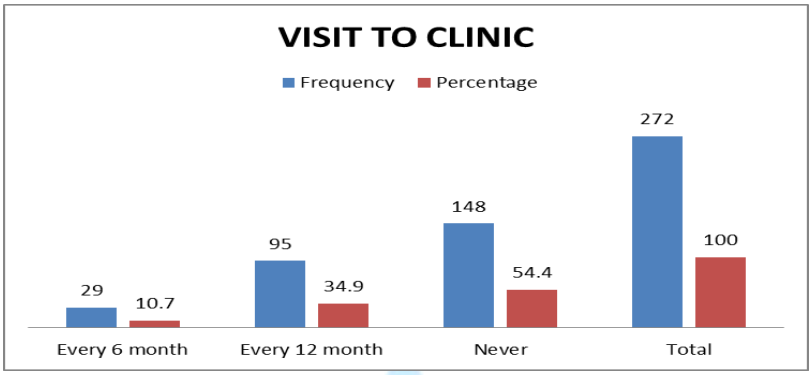


Figure 3.9 visit to clinic

2.10 Children brush their teeth /day.

Out of 272 participants, (27.2%) of the children brush their teeth twice a day, (41.2%) brush once a day, and (31.6%) rarely brush their teeth.

Table 3.10 children brush their teeth/day.

Children brush their /day	Frequency	Percentage
Twice a day	74	27.2
0nce a day	112	41.2
Rarely	86	31.6
Total	272	100.0

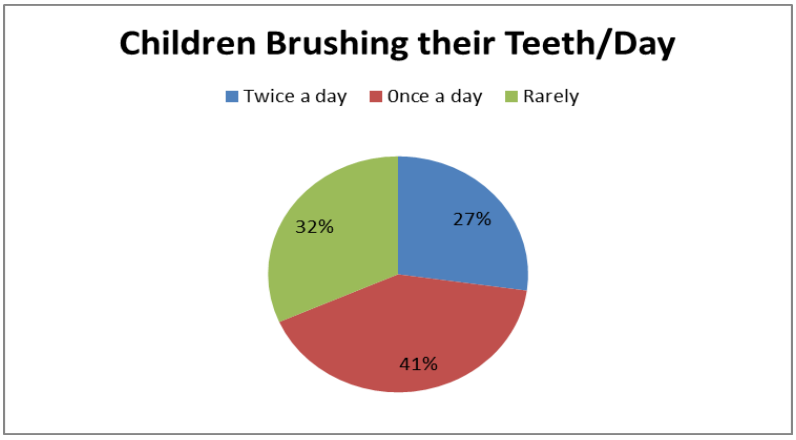


Figure 3.10 children brush their teeth/day

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2.11 which type of tooth brush is used.

Out of 272 participants, (76.5%) of the children use a soft tooth brush, (5.1%) use a hard tooth brush, and (18.4%) do not use a tooth brush.

Table 3.11 which type of tooth brush is used.

brush your teeth	Frequency	Percentage
Soft tooth brush	208	76.5
Hard tooth brush	14	5.1
None	50	18.4
Total	272	100.0

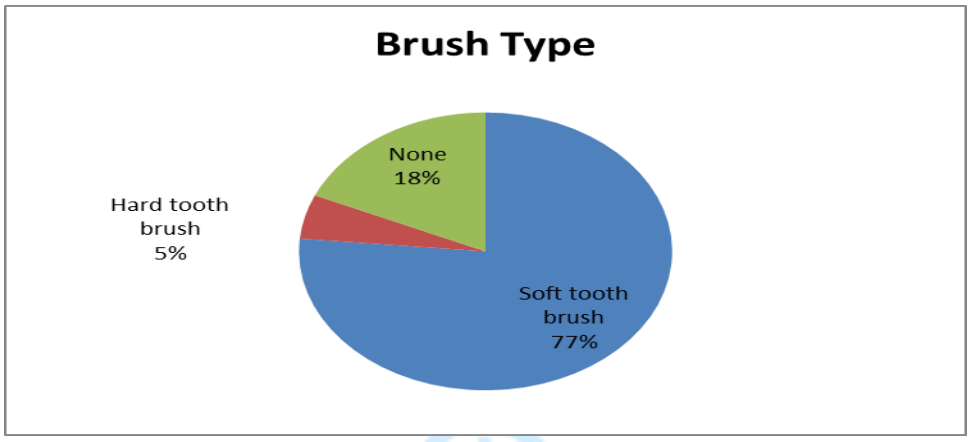


Figure 3.11 which type of tooth brush is used.

2.12 Use oral products other than toothpaste.

Out of 272 participants, (32.0%) of the children use other products, while (68.0%) do not use any other products.

Table 3.12 Use oral products other than toothpaste.

Toothpaste	Frequency	Percentage
Yes	87	32.0
No	185	68.0
Total	272	100.0

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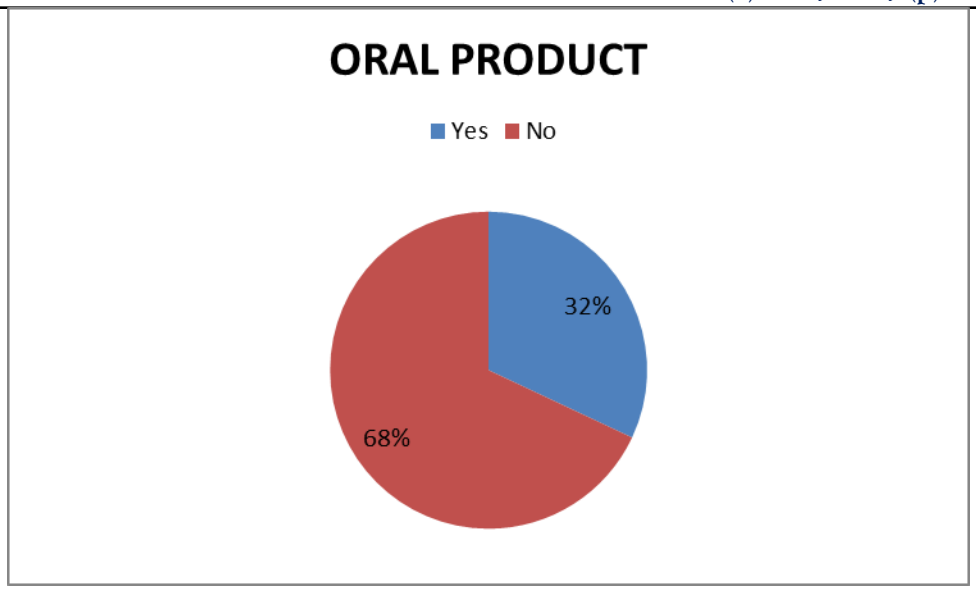


Figure 3.12 Use oral products other than toothpaste

3- DISCUSSION

ECC is the term for in advance, mild, and severe dental decay that can affect a baby's main teeth. Dental cavities are less likely to affect the lingual and buccal surfaces of maxillary and mandibular molars, as well as the labial surfaces of maxillary incisors. It has been suggested that a Streptococcus mutant is the main cause of dental caries, an infected micro-biologic condition that affects teeth and results in the local breakdown and disintegration of calcified structures. ECC begins on the maxillary incisor gingival border as dull brown or white patches and spreads until the entire crown is removed.

The prevalence of early childhood caries was studied in a group of 272 participants, with 134 (49.3%) individual diagnose with the conduction. Out of these 272 participants, 141 were male and 131 were female.

We conduct the data from school Taj Abad Peshawar the age from 3-6 were included in the study. There were 90 (33.1%) patients of age 3-4 years, 92 (33.8%) of age 4-5

years and 90 (33.1%) patients of age 5-6 years.

In many nations, kids between the ages of three and six are diagnosed with early childhood caries. It is 25–53.1%; 36–45% in Asia; 44% in India; 44.4% in Sweden; and percent in Italy(14)

Although caries can appear in individuals of any age, it is a pathological condition frequently found in children. Those between the ages of three to six are particularly vulnerable to this problem, with the highest prevalence occurring in the age range of four to five, which is also the most prevalent time for early childhood caries. The findings were derived from a sample study of early childhood caries participants, of whom 51.8% were male and 48.2% were female.

The age of subject ranged from 3-6 of age with the mean of 4.5 years (+/_ 3.5 years standard deviation). The highest proportion of cases (43.3%) was young (4.5%) year of age. Female constituted a slightly higher proportion (53.9%) than males Six or more carious teeth were present in 7% of one-year-olds, 22% of two-year-olds, Asia and Arabia 41% of three-year-olds, 57% of four-year-olds, and 63% of five-year-olds(23).

The majority of individual in this study who are between the age of 3to6 are highly effective and there are some difference in the results because of sample size our sample size was greater.

Out of 272 participants (32.0%) patients were using other product and (68.0%) participants were not using other products.

Around 55% in the years that follow. According to recent research, the DMFT at 6 years in Brazil is 2.3 for fluoridated and 3.4 for non-fluoridated

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cities, representing a roughly 30% discrepancy(19)

The study also looked into the oral hygiene practice of the participants out of the 272 participants only 169(62.1%) use tooth brushes while 103(37.9%) did not tooth brushes.

"Tooth brushing use" was associated with significantly (< 0.05) higher caries at two 35% and three years 3.6, 45% Africa and South Asia Similar findings were seen for caries development at age five 4.5, 55% –3-5 45% when reporting "major/minor difficulties to perform tooth brushing" at ages three to five(24).

In the population lack of understanding about oral hygiene practice, there for the use of toothbrushes are decreases in there are need of free camp about oral hygiene practices.

3.1 Conclusions

- Childhood caries most commonly affect patients aged 4-5 years.
- Early of childhood caries are most common in the upper jaw of patients.
- Early of childhood caries are more likely to occur in patients who brush their teeth less
- Frequently, while they occur less frequently in those who brush their teeth more often.
- Participants who consume large amounts of sweets are more affected, while those who do not consume sweets are least frequently affected.

6. RECOMMENDATION & LIMITATION:

6.1 Recommendation

A large sample size and is required for future research; studies that focus only on age will produce better finding.

For Parents: Schools can provide parent education sessions that highlight the value of good diets, early oral hygiene habits, and routine dental examinations.

For Students: To educate children about the advantages of brushing, flossing, and avoiding sweet foods, age-appropriate dental education programs can be included in the curriculum.

When a child's first tooth erupts, parents should be advised to make an appointment for dental.

In order to detect early indications of decay, schools can work with nearby dental practitioners to provide kids with routine dental screenings.

6.2 Limitations:

The current study has potential limitation. There is a small sample size population and only 272.

Participants are included in the study due to specific time duration from June to December early of childhood caries are include in the study.

7. REFERNCES

Anil S, Anand PS. Early childhood caries: Prevalence, risk factors, and prevention. Vol. 5, Frontiers in Pediatrics. Frontiers Media S.A.; 2017.

Stephen A, Krishnan R, Ramesh M, Kumar V. Prevalence of early childhood caries and its risk factors in 18-72 month old children in Salem, Tamil Nadu. J Int Soc Prev Community Dent. 2015;5(2):95.

Alazmah A. Early childhood caries: A review. Vol. 18, Journal of Contemporary Dental Practice. Jaypee Brothers Medical Publishers (P) Ltd; 2017. p. 732–7.

Congiu G, Campus G, Lugliè PF. Early Childhood Caries (ECC) Prevalence and Background Factors: A Review. Oral Health Prev Dent [Internet]. 12(1):71–6. Available from: http://www.ncbi.nlm.nih.gov/pubmed/24619785

Article O, Ahmad S, Khan H, Khan M, Maryam W. Prevalence and Patterns of Early Childhood. 2015;6(1):1–4.

Vandana K, Raju S, Badepalli R, Narendrababu J, Reddy C, Sudhir K. Prevalence and risk-factors of early childhood caries among 2-6-year-old Anganwadi children in Nellore district, Andhra Pradesh, India: A cross- sectional survey. Indian J Dent Res. 2018;29(4):428–33.

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J. W, A. A, X.-L. B, J. Z. Risk determinants associated with early childhood caries in Uygur children: a preschool-based cross-sectional study. BMC Oral Health [Internet]. 2014;14:136. Available from: http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=emed13&NEWS=N&AN=25407041

Lalloo R, Tadakamadla SK, Kroon J, Tut O, Kularatna S, Boase R, et al. Salivary characteristics and dental caries experience in remote Indigenous children in Australia: A cross-sectional study. BMC Oral Health. 2019;19(1):1–9.

Foláyan MO, Schroth RJ, Duangthip D, Al-Batayneh OB, Virtanen JI, Sun IG, et al. A scoping review on the association between early childhood caries and life on land: The Sustainable Development Goal 15. PLoS One. 2024;19(7 July):1–14.

Majorana A, Cagetti MG, Bardellini E, Amadori F, Conti G, Strohmenger L, et al. Feeding and smoking habits as cumulative risk factors for early childhood caries in toddlers, after adjustment for several behavioral determinants: A retrospective study. BMC Pediatr. 2014;14(1).

Onyejaka NK, Amobi EO. Risk factors of early childhood caries among children in Enugu, Nigeria. Pesqui Bras Odontopediatria Clin Integr. 2016;16(1):381–91.

Candan M, Buldur B. Primary tooth extraction pattern among Turkish children with severe early childhood caries treated under general anesthesia. Pesqui Bras Odontopediatria Clin Integr. 2020;20:1–7.

Achmad H, Chandha HH, Harun S, Sudjarwo I, Yunus M, Rusdi RK, et al. Prevalence of medically compromised children regarding dental caries and treatment needs in Wahidin Sudirohusodo hospital. J Int Dent Med Res. 2017;10(3):915–20.

Jamshidi M, Sistani MMN, Boushehri N, Hamzeh M. Prevalence of Early Childhood Caries and the Related Factors among 3-5-Year-Old Children in Babol, Iran. J Dent. 2022;23(2):137–43.

Castillo JL, Palma C, Cabrera-Matta A. Early Childhood Caries in Peru. Front Public Heal. 2019;7(November):1–7.

Retnakumari N, Cyriac G. Childhood caries as influenced by maternal and child characteristics in pre-school children of Kerala-an epidemiological study. Contemp Clin Dent. 2012;3(1):2–8.

Wang X, Wei Z, Li Q, Mei L. A longitudinal study of early childhood caries incidence in Wenzhou preschool children. BMC Oral Health. 2017;17(1):1–5.

Luz S. e sugestões para prevenção. 1981;1–7.

Cury JA, Tenuta LMA, Ribeiro CCC, Paes Leme AF. The importance of fluoride dentifrices to the current dental caries prevalence in Brazil. Braz Dent J. 2004;15(3):167–74.

Boustedt K, Dahlgren J, Twetman S, Roswall J. Tooth brushing habits and prevalence of early childhood caries: a prospective cohort study. Eur Arch Paediatr Dent [Internet]. 2020;21(1):155–9. Available from: https://doi.org/10.1007/s40368-019-00463-3

Devan I, Ramanarayanan V, Janakiram C. Prevalence of early childhood caries in India: A systematic review and meta-analysis. Indian J Public Health. 2022;66(5):3–11.

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Ibrahim NA, Nor NAM, Azizi NZ, Hamzah TNNT, Dziaruddin N, Musa S. Retrospective analysis of dental treatment under general anesthesia among children with early childhood caries in Malaysia. J Clin Pediatr Dent. 2023;47(4):46–53.

Igic M, Obradovic R, Filipovic G. Prevalence and progression of early childhood caries in Niš, Serbia. Eur J Paediatr Dent. 2018;19(2):161–4.

Chouchene F, Masmoudi F, Baaziz A, Maatouk F, Ghedira H. Early Childhood Caries Prevalence and Associated Risk Factors in Monastir, Tunisia: A Cross- Sectional Study. Front Public Heal. 2022;10(February):1–9.