

Prevalence of Dental Caries Among Physically Disable Students of Primary School in Lahore

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ABSTRACT

Objective: This study aimed to report the incidence of dental caries among deaf students of primary school in Lahore

Method: This descriptive crosssectional study was conducted at 2 private primary schools for deaf students in Lahore. Sample of the study was 150 students who were completely deaf. Data was collected by screening of oral health maintenance of students by two dentists. Chi Square test was used to explore the age wise difference in occurrence of dental caries among deaf students of primary school in Lahore

Results: Overall incidence of dental caries is quite high among deaf students of primary school in Lahore (112(74.67%). Results of chi square test revealed no significant difference of incidence of dental caries in terms of age ($X^2=4.597$, $P=.204$).

Conclusion: In Lahore, incidence of dental caries among primary school deaf students is quite high which need to be address. Moreover, age has no significant effect on the incidence of dental caries among primary school deaf students.

Keywords: Dental caries, Deaf students, Primary school, Oral health maintenance

INTRODUCTION

Regeneration of dental enamel after damage is not possible due to the exposure of many systemic factors as well as local factors.¹⁻³ Enamel defects could be cause by many factors which start during fetal development up to adulthood, known as odontogenesis.¹ Based on the type of trauma along with the amelogenesis stage, the abrasions could be limited to small area or seen all around the teeth. The cause of localized defects could be any traumatic injuries, irradiation and infections. On the other hand, cause of generalized lesions is genetic disorders, systemic disturbances such as pre and post birth issues, exposure to infectious diseases, malnutrition, other medical issues as well as the exposure to environmental toxins, for instance, dioxins and fluoride.^{1,4-7} Alteration in amelogenesis has also be seen due to the neurological disruption.²

Defects of enamel linked with numerous levels of intellectual abilities are representative of many diseases caused at genetic level.^{8,9} Literature has evident the relationship of brain development and risk of developing defects of enamel. It was reported in research that among children with low IQ level, prevalence of defects of enamel is high.¹⁰ Level of enamel defects may provide information about the period of insults which may affect the development of organs originated from ectoderm, especially brain.^{2,3,11,12} It is often observed that real cause of trauma remains uncover as the response of ameloblasts are similar to various stimuli.

Though, literature has evidence that the sequentially disseminated developmental defects of enamel helps in the detection of neurological disorders.¹⁰⁻¹³ So, dental inspection may be helpful in establishing the period of the predicted harmful health problem causative of mental health issues especially, mental retardation. It was evident that hypo-mineralization of molar incisors and enamel hypoplasia raised the occurrence of dental caries.^{14,15} Dental caries' occurrence and progression could be an outcome of abnormal structure and teeth morphology due to abnormality during amelogenesis.^{14,15}

Among physically disable primary school students, data regarding the incidence of dental caries is very rare.^{2,3,11,12} So to fulfill this requirement of the hour, this study aimed to report the incidence of dental caries among deaf students of primary school in Lahore.

METHODOLOGY

This descriptive crosssectional study was conducted at 2 private primary schools for deaf students in Lahore. Sample of the study was 150 students who were completely deaf. After the approval of the study from the review committee of institution, permission was taken from the principal of schools for data collection. Two days dental camp was arranged in the each school to screen students' oral health as well as the dental caries status. Data was collected by screening of oral health maintenance of students by two dentists. For screening of dental caries, explorer, forceps and mouth mirror. Data was entered collected on the data sheet which was later on, transferred to SPSS version 25.0 for data analysis. Frequencies and percentages were calculated for gender, age and incidence of dental caries among the sample. Chi Square test was used to explore the age wise difference in occurrence of dental caries among deaf students of primary school in Lahore.

RESULTS

Among 150 students, 67(44.67%) were male students whereas 83(55.33%) were female students.

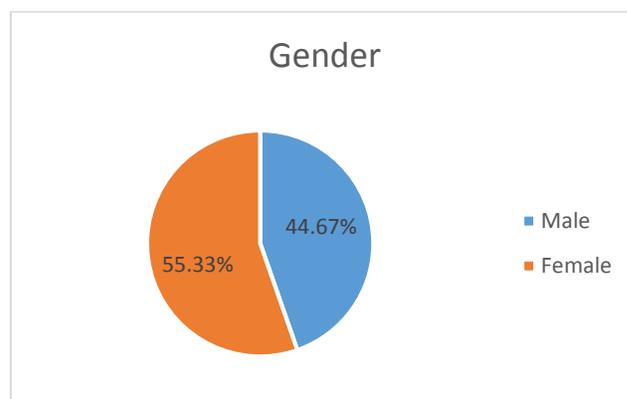


Figure 1: Gender wise data distribution

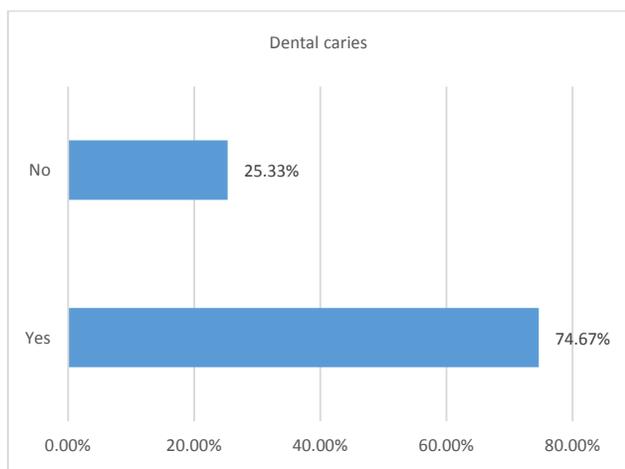
The mean age was 6.40 ± 1.54 years. Age of the students was between 5 to 8 years. Male deaf students of 5 years were 7(10.45%), and females were 12(14.46%). Male deaf students of 6

years were 15(22.39%), and females were 28(33.73%). Male deaf students of 7 years were 29(43.28%), and females were 25(30.12%). Male deaf students of 8 years were 16(23.88%), and females were 18(21.68%).

Table 1: Demographic data of age and gender.

Age	Gender	Frequency (%)
5 years	Male	7(10.45%)
	Female	12(14.46%)
6 years	Male	15(22.39%)
	Female	28(33.73%)
7 years	Male	29(43.28%)
	Female	25(30.12%)
8 years	Male	16(23.88%)
	Female	18(21.68%)

Overall incidence of dental caries is quite high among deaf students of primary school in Lahore (112(74.67%).



Graph 1: Incidence of Dental caries among deaf primary school students

Results of chi square test revealed no significant difference of incidence of dental caries in terms of age ($X^2=4.597$, $P=.204$). High incidence of dental caries was observed in deaf students who were 5 years old (17 students), 6 years old (34 students), 7 years old (39 students), and 8 years old (22 students).

Table 2: Age-wise incidence of dental caries among deaf students

Age	Dental Caries		X ²	Sig.
	Yes	No		
5 Years	17	2	4.597	0.204
6 Years	34	9		
7 Years	39	15		
8 Years	22	12		

DISCUSSION

Overall, wellbeing and health is based on the oral health of an individual. Focus on the oral health needs of individuals with special needs is also as important as focusing on any other individual's oral health. But, It was found that among majority of cases of individuals with special needs, the dental problems remains undiagnosed which later on leads to the increased dental care demand.¹⁶ While having this thought, the current study was planned and conducted to explore the incidence of dental caries among primary school deaf students in Lahore.

It is found that deaf children could be taught the ways of maintaining oral health if the awareness and knowledge of caregiver is good.¹⁶

The findings of current study revealed the incidence of dental caries as 74.67% which is quite high as compare to the findings of a similar study which reported 49% dental caries incidence.¹⁷ In Bhopal, occurrence of dental caries among children with special needs was 59%.¹⁸ In Mysore, incidence of dental

caries among children with special needs was 69%¹⁹ whereas in Bhimavaram, it was reported as 65%²⁰ which is lower than the findings of current study.

As the incidence of dental caries was observed among primary students with special needs, there is a need to develop dental instructions workshops for the care givers as well as instructors while keeping in mind the aim that the output will be to make the deaf students learn the importance of maintaining oral health as well as helping them in achieving the goals of oral wellbeing.²¹ Current study focused on the deaf students who are unable to maintain their oral health due to the lack of awareness about the deposits on the tooth surface which remain unreported as they take it normal. But they can appreciate dental esthetics and can practice oral health maintenance ways as deaf children can learn and maintaining oral health better as compared to visually impaired children. Very less empirical data is available on oral health maintenance among visually and auditory disabled children is available in Pakistan. More studies will be helpful in developing the baseline for devising awareness plans to enhance the oral health maintenance among visually and auditory disabled children in Pakistan. Moreover, studies on rural areas also scare, exploration of which will be appreciated.

To conclude, in Lahore, incidence of dental caries among primary school deaf students is quite high which need to be address. Moreover, age has no significant effect on the incidence of dental caries among primary school deaf students.

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