

ORIGINAL ARTICLE

Assessment of Dental Caries in Visually Impaired Children- A Clinical Study

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ABSTRACT:

Background: Visually impaired children have high prevalence of dental caries. The present study was conducted to assess dental caries in visually impaired children. **Materials & Methods:** The present study was conducted on 160 visually impaired children. The prevalence of dental caries was recorded in partial and total blind children with the help of mirror, probe, twizzer. **Results:** Out of 160 subjects, boys were 70 and girls were 90. The difference was non-significant (P- 0.5). Out of 70 boys, 45 were partial blind and 25 were total blind, 60 girls were partial blind and 30 were total blind. The difference was significant (P- 0.05). 4-6 years had 25 boys and 30 girls, 7-9 years had 30 boys and 40 girls and 10-12 years had 15 boys and 20 girls. The difference was significant (P- 0.01). Out of 45 boys with partial blindness, 35 had caries. Out of 25 total blind boy, 20 had caries. Out of 60 partial blind girls, 52 had caries and 22 total blind girls had dental caries. **Conclusion:** Visually impaired children have higher prevalence of dental caries. There is need to assess the oral cavity carefully in order to prevent progression of dental caries.

Key words: Dental caries, Partial blind, visually impaired

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INTRODUCTION

Visual impairment, also known as vision impairment is a decreased ability to see to a degree that causes problems not fixable by usual means, such as glasses. "Partially sighted" indicates some type of visual problem has resulted in a need for special education. Low vision generally refers to a severe visual impairment, not necessarily limited to distance vision.¹ Low vision applies to all individuals with sight who are unable to read the newspaper at a normal viewing distance even with the aid of eyeglasses or contact lenses. They use a combination of vision and other senses to learn, although they may require adaptations in lighting, the size of print, and, sometimes, Braille. Legally blind indicates that a person has less than 20/200 vision in the better eye or a very limited field of vision.²

The most common causes of visual impairment globally are uncorrected refractive errors, cataracts, and glaucoma etc. Some other conditions that cause vision loss at the time of birth or in infancy include genetic or metabolic diseases, coloboma, infections, such as cytomegalovirus (CMV). According to the Indian National Sample Survey of 2003, about 1.8% were physically, visually, or hearing impaired

and visual impairment was the most frequently occurring disability.

Partially sighted is usually used in educational contexts to describe a visual impairment that requires special education services.³ The partially sighted student meets the challenge of disability in much the same way as a totally blind student. People who are legally blind may have some useful vision. Total visual impairment is one disorder that may result in frequent hospitalization, separation from family, and slow social development.

Studies have shown that people with disability have a higher incidence of dental caries and consistently poorer state of oral hygiene with various levels of periodontal diseases. The main reason for higher prevalence of dental caries is their inability to visualize plaque and its inadequate removal during oral hygiene procedures which also results in the progression of inflammatory diseases of the periodontium.^{4,5} The present study was conducted to assess dental caries in visually impaired children.

MATERIALS & METHODS

The present study was conducted in the department of Pedodontics. It included 160 visually impaired children of

both gender. Parents were informed regarding the study and informed written consent was obtained. Ethical clearance was taken from institutional ethical committee.

General information such as name, age, gender etc, was recorded. Examination of oral cavity was done with the help of mirror, probe, twizzer. The prevalence of dental caries was recorded in all subjects (Partial and total blindness). Results were tabulated and subjected to statistical analysis using chi- square test. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of subjects

Total- 160		
Boys	Girls	P value
70	90	0.5

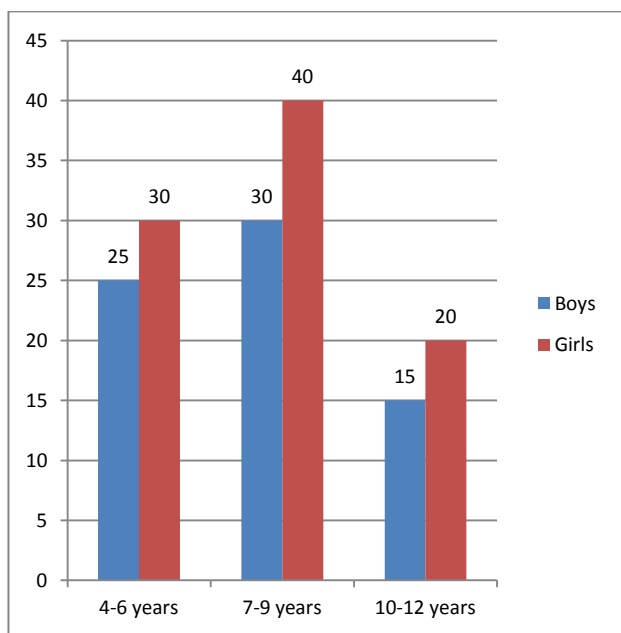
Table I shows that out of 160 subjects, boys were 70 and girls were 90. The difference was non- significant (P- 0.5).

Table II Distribution according to blindness

Blindness	Boys	Girls	P value
Partial	45	60	0.05
Total	25	30	
Total	70	90	

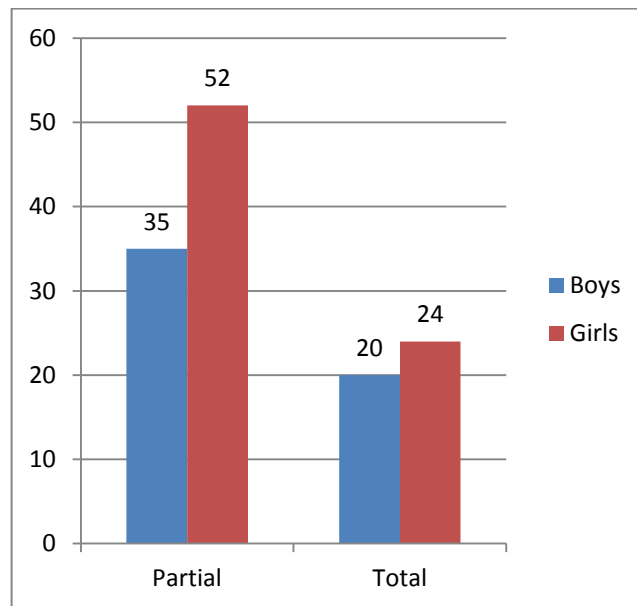
Table II shows that out of 70 boys, 45 were partial blind and 25 were total blind, 60 girls were partial blind and 30 were total blind. The difference was significant (P- 0.05).

Graph I Age wise distribution of patients



Graph I shows that 4-6 years had 25 boys and 30 girls, 7-9 years had 30 boys and 40 girls and 10-12 years had 15 boys and 20 girls. The difference was significant (P- 0.01).

Graph II Prevalence of caries in subjects



Graph II shows that out of 45 boys with partial blindness, 35 had caries. Out of 25 total blind boy, 20 had caries. Out of 60 partial blind girls, 52 had caries and 22 total blind girls had dental caries.

DISCUSSION

The effect of visual problems on a child’s development depends on the severity, type of loss, age at which the condition appears, and overall functioning level of the child. Many children who have multiple disabilities may also have visual impairments resulting in motor, cognitive, and/or social developmental delays.

A young child with visual impairments has little reason to explore interesting objects in the environment and, thus, may miss opportunities to have experiences and to learn. This lack of exploration may continue until learning becomes motivating or until intervention begins. Because the child cannot see parents or peers, he or she may be unable to imitate social behavior or understand nonverbal cues. Visual disabilities can create obstacles to a growing child’s independence. The present study was conducted to assess dental caries in visually impaired children.⁶

In this study, out of 160 subjects, boys were 70 and girls were 90. Out of 70 boys, 45 were partial blind and 25 were total blind, 60 girls were partial blind and 30 were total blind. This is in agreement with the results of Rao et al.⁷ We found that 4-6 years had 25 boys and 30 girls, 7-9 years had 30 boys and 40 girls and 10-12 years had 15 boys and 20 girls. Out of 45 boys with partial blindness, 35 had caries. Out of 25 total blind boys, 20 had caries. Out of 60 partial

blind girls, 52 had caries and 22 total blind girls had dental caries. This is similar to Jain et al.⁸

Total visual impairment affects more than 15 million people. The prevalence of visual impairments, ranging from total blindness to slight limitation in vision is 3 children in 1000. The overall incidence of blindness in children is about 1 in 3000, 46% of these children were born blind, and an additional 38% lost their sight before the age of 1 year. The effects of blindness are many, but one of the most common is the inability of the individual to maintain oral health. The oral health of people who are visually impaired can be disadvantaged, since they are not in a position to detect and recognize early oral disease and may be unable to take immediate action unless informed of the situation. The individual's ability to cope with everyday tasks of personal hygiene, including oral hygiene, is critical to the maintenance of an independent existence.⁹The high level of caries in children may be explained by the fact that visual impaired children have poor access to the oral cavity and they are not able to maintain oral hygiene.¹⁰

Visual impairment is the consequence of a functional loss of vision, rather than the eye disorder itself. Eye disorders which can lead to visual impairments can include retinal degeneration, albinism, cataracts, glaucoma, muscular problems that result in visual disturbances, corneal disorders, diabetic retinopathy, congenital disorders, and infection.¹¹

CONCLUSION

Visually impaired children have higher prevalence of dental caries. There is need to assess the oral cavity carefully in order to prevent progression of dental caries.

REFERENCES

1. Naveen N, Reddy CV. A study to assess the oral health status of institutionalized blind children in Mysore City, Karnataka. *J Orofac Sci* 2010; 2:12-5.
2. Priyadarshini P, Pushpanjali K, Sagarkar A, Rathore B, Shenoy S. Assessment of oral health status among visually impaired children. *J Dent Orofac Res* 2015; 11:3-6.
3. Tagelsir A, Khogli AE, Nurelhuda NM. Oral health of visually impaired schoolchildren in Khartoum state, Sudan. *BMC Oral Health* 2013;13:33.
4. Al-Qahtani Z, Wyne AH. Caries experience and oral hygiene status of blind, deaf and mentally retarded female children in Riyadh, Saudi Arabia. *Odontostomatol Trop* 2004; 27:37-40.
5. Al-Alousi JM. Oral health status and treatment needs among blind children in Iraq. *Mustansiria Dent J* 2009; 6:313-24.
6. Reddy K, Sharma A. Prevalence of oral health status in visually impaired children. *J Indian Soc Pedod Prev Dent* 2011; 29:25-7.
7. Rao DB, Hegde AM, Munshi AK. Caries prevalence amongst handicapped children of south Canara district, Karnataka. *J Indian Soc Pedod Prev Dent* 2001;19:67-73.
8. Jain M, Bharadwaj SP, Kaira LS, Bharadwaj SP, Chopra D, Prabu D, et al. Oral health status and treatment need among institutionalised hearing-impaired and blind children and young adults in Udaipur, India. A comparative study. *Oral Health Dent Manag* 2013; 12:41-9.
9. Greene JG, Vermillion JR. The simplified oral hygiene index. *J Am Dent Assoc* 1964; 68:7-13.
10. Bakland LK, Andreassen JO. Dental traumatology: Essential diagnosis and treatment planning. *Endod Top* 2004; 7:14-34.
11. Basha S, Swamy HS. Dental caries experience, tooth surface distribution and associated factors in 6- and 13- year- old school children from Davangere, India. *J Clin Exp Dent* 2012;4: 210-6.

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