Research Article

Knowledge and awareness of caries status among speech impaired

M. Meenapriya, Dhanraj Ganapathy*, R. M. Visalaksh

ABSTRACT

Introduction: Oral health has a great impact on the overall health and well-being of an individual. The aim of the study is to assess the prevalence of dental caries, oral hygiene knowledge and awareness among the speech-impaired individuals. **Materials and Methods:** Assessment of caries status was done among the speech-impaired people for finding their knowledge and awareness toward the caries status. Information about the oral hygiene practices, previous dental visit, and oral health knowledge were obtained through a preformed questionnaire. **Results:** School students participated in the survey, of which 57% of students were male and 43% were female. Age groups of the participants who took part in the survey were from 5 to 16 years. 87% of the student's brushes their teeth only once a day. 85% of the students do not rinse their mouth after eating or drinking. Of those students, none are aware of the fluoride. 90% of the students have not visited the dental clinics. **Conclusion:** Although there are some studies that have explored the oral health of speech impairment population, the information available for speech impairment individuals is still scarce. Hence, more awareness needs to be created among the speech-impaired people.

KEY WORDS: Awareness, Caries status, Knowledge, Oral health, Speech impairment

INTRODUCTION

Dental caries, as defined by Shafer, is an irreversible microbial disease of the calcified tissues of the teeth, characterized by the demineralization of the inorganic portion and destruction of organic substance of the tooth. It is an infectious and communicable disease and is also defined as localized destruction of susceptible dental hard tissues by acidic by-products from bacterial fermentation of dietary carbohydrates. Dental caries have historically been considered the most important part in the global burden of oral diseases. Oral health is most important for the general health and well-being of an individual.[1]

Mute term is used for a person who could not speak. Disabilities are a wide term, which covers impairments, activity limitations, and participation restrictions that hamper function of body structure, create problems in performing a task and problem in involvement in the life situations. Disabilities may be physical, mental, or social. Deaf and mute children are one of the major population groups of disabled children. Around one in six hundred neonates are born with congenital hearing loss. Mute condition affects general behavior and impairs social functioning. Such children often neglected due to ignorance, fear, misconception, and negative attitudes.[2]

Data concerning the oral health condition of handicapped people are scarce. Reports of oral condition restricted to deaf and dumb children in specific are lacking. According to the National Sample Survey Organisation of India in 2002, 0.4% of 1065.40 million children suffered from hearing impairment.[3] Deaf and dumb individuals, though being a vital part of the society, a significant number of studies are not present for evaluating the awareness level regarding oral health status. Most of the scientific studies have focused on the general population for analyzing the awareness level regarding oral health and dental needs.[4] Earlier studies for the prevalence of caries status in rural areas and partially edentulous in urban population were conducted.[5,6]

The aim of this study was to assess the dental caries status, treatment needs, and their oral health behavior among speech impairment. The results of the study

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will be used to plan oral health programs to update the people's knowledge of oral diseases and to plan oral health programs for the prevention and control of dental caries.

MATERIALS AND METHODS

Questionnaire data collection was done using 25 closed-ended questions after the survey protocol was reviewed followed by clinical examination. Standardization for the collection of data for oral health examination, questionnaire and a demonstration of examination, and recording of data was done. For their speech-impaired children, they were to fill out the questionnaire on their own by reading it. Assistance was provided by sign language experts in case the children had doubts regarding any of the questions.

The variables included in the questionnaire were as follows:

1. Caries status among the speech impairment people
2. Awareness of gingival health, plaque, and tooth decay
3. Attitude toward professional dental care.[3]

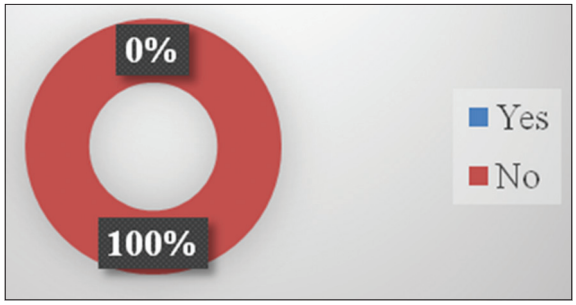
After finishing the questionnaire interview, the examination for dental caries was conducted using the decayed, missing, and filled teeth (DMFT) index and the modified oral health assessment form given by the World Health Organization. Only permanent teeth were considered excluding all permanent third molars, if present. The results of the survey and clinical examination were statistically analyzed.

RESULTS

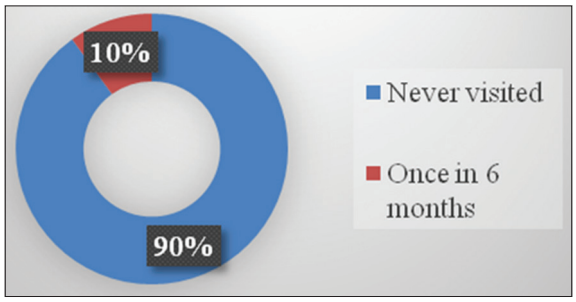
School students participated in the survey, of which 57% of students were male and 43% were female. Age groups of the participants who took part in the survey were from 5 to 16 years. Most (87%) of the student's brushes their teeth only once a day [Graph 1]. 95% of the students do not use mouthwashes. 85% of the students do not rinse their mouth after eating or drinking [Graph 2]. 60% of the students are aware that eating sweets or drinking fizzy drinks can affect the teeth adversely [Graph 3]. Of those students, none are aware of the fluoride [Graph 4]. 90% of the students have not visited the dental clinics [Graph 5]. 96% of the students think that good dental health is not important for optimum general health and they have no idea how to maintain their dental health. However, some of the students care about their teeth, as much as other parts of the body. The prevalence of dental caries was more among the age groups of 11–15 years [Graph 6].

DISCUSSION

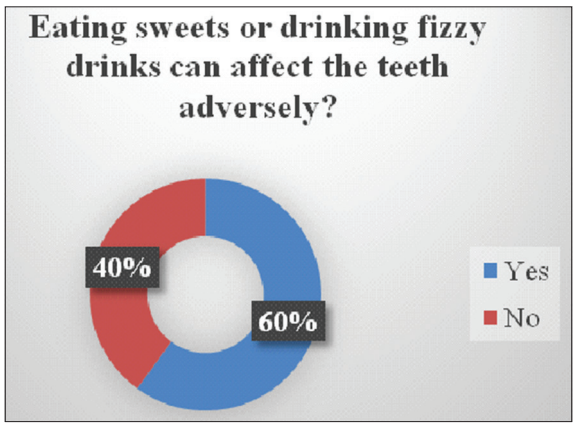
In a study conducted by Vaishnavi *et al*.,[7] the frequency of brushing (twice a day) was only 9% among the overall population. Less percentage of the participants has the habit of rinsing their mouth after



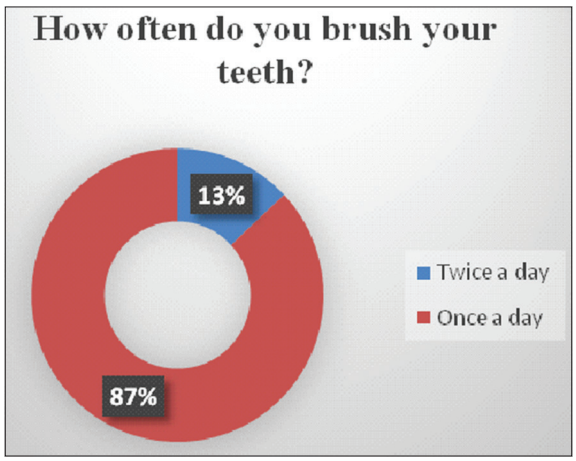
Graph 1: Knowledge of fluoride among speech-impaired individuals



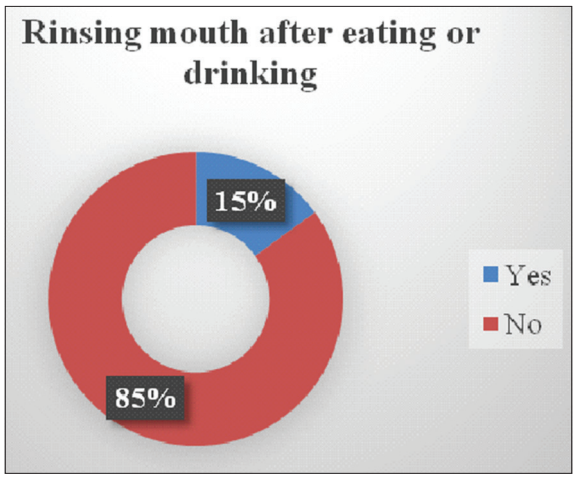
Graph 2: Dental visits of the speech-impaired individuals



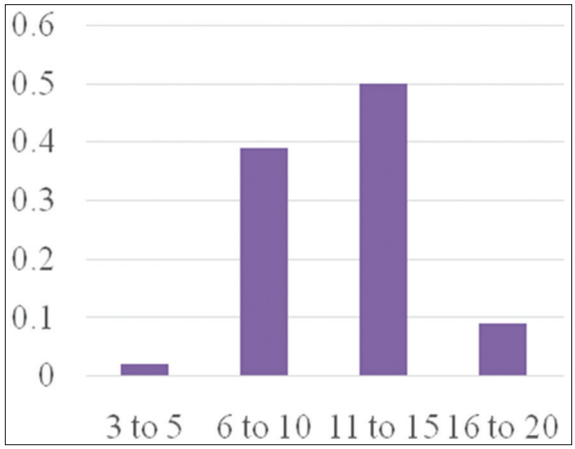
Graph 3: Dietary habits of the speech-impaired individuals



Graph 4: Oral hygiene practices among the speech-impaired individuals



Graph 5: Oral hygiene practices after meal



Graph 6: Prevalence of dental caries among speech-impaired individuals

eating. 20.2% of the speech impaired have the habit of taking sweets thrice daily. Oral hygiene status was better among the study population compared with the other disabled people. Results were similar to the present study. 13% of the speech impaired brush their teeth twice a day. Only 15% of the population have the habit of rinsing their mouth after eating or drinking.

A study was conducted by Hong *et al*. in a senior high school among deaf-mute students.[8] The prevalence of dental caries among them was 55%. The prevalence of dental caries and gingivitis in deaf-mute students was high which was also accompanied by unhealthy oral habits. Similarly, in the present study, the caries status was more among the age groups of 11–15 years (50%). The knowledge of the dental caries and oral hygiene was poor among the speech impaired.

The study was conducted by Hong *et al*., Yu-Mei *et al*., and Wei *et al*., and Wei *et al*. on special schools and school for deaf and dumb, respectively. Results were that the dental caries status was about 55% and 65% and 56%, respectively. All the three studies had the same result that the oral health status, behavior, and awareness among the impaired, deaf and dumb students were very poor.[9-11]

Studies conducted among hearing impaired and people with other disabilities are as follows. Oral health status among hearing impaired in Bhimavaram has showed the prevalence of 65% of dental caries.[12] Dentition status among institutionalized disabled individuals showed the result that the age categories (13–17 years) and disability types were more likely associated with dental caries.[13] The study conducted among hearing impaired and blind children in Udaipur showed that the mean DMFT was greater, only 24% of the people were periodontally healthy.[14]

A study by Liliya states that the high scores of "success" after administration of caries infiltration technique in permanent dentition can explain with the following: Children with permanent dentition have higher efficiency of caries prevention, consciousness for food and oral prevention, and generally, they are more responsible.[15] The prevailing poor oral health may be due to a lack of communication; hence, appropriate oral health education is needed to these students with the support of their teachers and their parents.[16] Oral health media for persons with impairment are greatly needed to increase their knowledge on oral health information. Various methods can be used to communicate with this population including sign language videos. Dental professionals should be aware of the lack of accessibility to dental services in this population.[17] The level of treatment or care by the society of its neglected. Children with special needs deserve special attention in the area of oral health.[18] Same as the revealing of the present study, the alarming situation needs attention. Parents should be educated to improve the oral health of the children.[19]

CONCLUSION

The knowledge and awareness of caries status among speech-impaired people were poor. Several studies have explored the oral health of speech impairment population; the information available for speech impairment individuals is still scarce. Hence, suitable awareness programs and remedial measures should be initiated.

REFERENCES

1. Acharya J, Chansatitporn N, Narkasawat K. Dental caries status and oral health needs among disabled children living in care centers in Kathmandu valley, Nepal. WebmedCentral Dent 2014;5:WMC004539.
2. Yadav OM, Shavi GR, Panwar M, Rana S, Gupta R, Verma A. Prevalence of dental caries and periodontal disease in deaf and mute children attending special schools in Jaipur, Rajasthan. J Dent Health Oral Disord Ther 2017;7:00252.
3. Suma G, Das UM, Akshatha BS. Dentition status and oral health practice among hearing and speech-impaired children: A cross-sectional study. Int J Clin Pediatr Dent 2011;4:105-8.

4. Mustafa M, Asiri FY, AlGhannam S, AlQarni IA, AlAteeg MA, Anil S. Extent of awareness regarding oral health and dental treatment needs among individuals with hearing and speech impairments in Saudi Arabia. J Int Soc Prev Community Dent 2018;8:70-6.
5. Meenapriya M, Dhanraj G. Caries prevalence in rural areas of Kancheepuram district a pilot study. Int J Curr Adv Res 2017;6:2661-3.
6. Priyadharshini M, Dhanraj M. Status of partial edentualism and its restoration: A study in the age group of 30-60 years among the urban population. Int J Curr Adv Res 2017;6:2691-3.
7. Vaishnavi S, Chaly PE, Shalini P, Nijesh J, Priyadharshini VI. Oral health care awareness among differently abled children attending special schools in Chennai. Int J Community Public Health Dent 2015;5:1-10.
8. Hong W, Yan C, Na CX, Qin TW. Survey and analysis of deaf-mute students' oral health condition in a senior high school. Chin J Conserv Dent 2010;20:648-50.
9. Hong S, Wenjing CH, Xuefeng CH. Survey on Oral Health of two Special Schools Students in Wuhu. Wuhu: Stomatology 2014-11.
10. Sun H, Chen W, Chen X. Survey on oral health of two special schools students in Wuhu. Stomatology 2014;11:18.
11. Wei H, Wang YL, Cong XN, Tang WQ, Wei PM. Survey and analysis of dental caries in students at a deaf-mute high school. Res Dev Disabil 2012;33:1279-86.
12. Sandeep V, Kumar M, Vinay C, Chandrasekhar R, Jyostna P. Oral health status and treatment needs of hearing impaired children attending a special school in Bhimavaram, India. Ind J Dent Res 2016;27:73-7.
13. Chand BR, Kulkarni S, Swamy KV, Bafna Y. Dentition status, treatment needs and risk predictors for dental caries among institutionalised disabled individuals in central India. J Clin Diagn Res 2014;8:ZC56-9.
14. Jain M, Bharadwaj SP, Kaira LS, Chopra D, Prabu D, Kulkarni S. 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.
15. Doichinova L, Peneva M. Prevalence of dental caries in hearing impaired children than 5 to 12 years old in sofia. Int J Sci Res 2015;4:1088-91.
16. Kumar S, Dagli RJ, Mathur A, Jain M, Duraiswamy P, Kulkarni S. Oral hygiene status in relation to sociodemographic factors of children and adults who are hearing impaired, attending a special school. Spec Care Dentist 2008;28:258-64.
17. Vichayanrat T, Kositpumivate W. Oral health conditions and behaviours among hearing impaired and normal hearing college students at ratchasuda college, Nakhon Pathom, Thailand. Southeast Asian J Trop Med Public Health 2014;45:1228-35.
18. Mehta A, Gupta R, Mansoob S, Mansoori1 S. Assessment of oral health status of children with special needs in Delhi, India. RSBO 2015;12:244-51.
19. Jain M, Mathur A, Kumar S, Dagli RJ, Duraiswamy P, Kulkarani S. Dentition status and treatment needs among children with impaired hearing attending a special school for the deaf and mute in Udaipur, India. J Oral Sci 2008;50:161-5.

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