

ORAL HEALTH STATUS AND PRACTICE OF CHILDREN WITH HEARING AND VISUAL IMPAIRMENTS IN BAFOUSSAM-CAMEROON

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ABSTRACT

Background:

People with disabilities often need extra help to achieve and maintain good health, with oral health care not being an exception. Most African countries are not materially equipped and privileged to provide accessible oral health services to its people talk less of providing oral health care to the disables. The aim of the current study was to determine the oral hygiene status and practice of children with disabilities in some centers for people with disabilities in Bafoussam, Cameroon.

Methods:

This was a cross-sectional descriptive study on schoolchildren from 2 private rehabilitation centres and adults that took place between January to March 2019 in Bafoussam the regional headquarters of the Western Region of Cameroon. The study was carried out using structured questionnaires and clinical examinations.

A total of 180 children participated in this study, 102 (57%) were females and 77 (43%) were males. More than half 90 (50.3%) of the participant had total hearing loss, 50 (27.9%) were totally blind, 30 (16.8) were partially blind and the rest 9 (5%) had partial hearing loss. One third 56(31.3%) of the participants were within the 5-10 years age group and 105(58.7%) of the children carried out tooth brushing themselves, 160(89.2%) brush their teeth everyday while 19(10.8%) were not consistent with their brushing, 102(57%) of the participants brush their teeth once a day while 70(39%) of the participants brush their teeth twice a day. Three quarters of the participants 133 (74.7%) brush their teeth in the morning before breakfast and 45 (25.3%) brush their teeth in the morning after breakfast. Three quarters 132(73%) of the participants brush their teeth on their own while 48(27%) of the participants were assisted when brushing. Half of the children 107(57.6%) were assisted by their teachers, 36.2% were assisted by their relations while 6.4% were assisted by their friends. More than a third 81 (45%) oral health problems interfered with their eating habits, while for 41 (22.8%) interfered with their sleep pattern, 15 (8.3%) of the respondents reported that these problems decreased their ability to study and 2 (1.1%) interfered with their ability to smile or their self-confidence. Two thirds 108(60%) of the participants had never been to a dentist, 34(19%) had visited a dentist once,

while 23(13%) had visited a dentist twice and 14(8%) had visited a dentist more than twice. Half of the children 107(57.6%) were assisted by their teachers, 36.2% by their relations while 6.4% were assisted by their friends during brushing. Half 101(56%) of the participants had poor oral hygiene, 45(25%) good oral hygiene and 34(19%) was very good. Three quarters 127(77.3%) of the participants had dental caries, 77(44%) missing teeth 18(11%) filled teeth and by other pathologies 9(5.3%).

A third 59(33%) of the participants needed dental fillings, 59(33%) scaling and polishing, 32(18%) tooth extraction, 14(8%) needed RCT and orthodontic treatments each.

Conclusion.

The prevalence of dental caries was high and majorities of the participants in the study were in need of specific dental care. The oral health status of the deaf and dumb affected their quality of life. Good oral hygiene practices are not respected among respondents. Manual dexterity was not a major problem in the blind and deaf.

Recommendations

The funders of these schools should invite the dentists and the dental therapists to provide dental education to the parents and care givers of blind and deaf children concerning the importance of the preventive approach and regular dental checkup in the dental clinic.

The government should establish relevant oral health promotion and treatment programs for patients with special needs . More attention has to be directed by the oral health authorities to establish school- based dental care programs especially for high risk patients.

Keywords. Oral health, practice, children, visual impairment, hearing impairment, Cameroon

INTRODUCTION

It has been estimated that a tenth of the world's population or 650 million people live with a disability. This figure is increasing through population growth, medical advances and the ageing process (1). According to the United Nations Development Program (UNDP), around 80% of people with disabilities live in developing countries (1).

These developmental and intellectual disabilities present during childhood or adolescence and last a lifetime. They affect the mind, the body, and the skills people use in everyday life. Skills like thinking, talking, and self-care. People with disabilities often need extra help to achieve and maintain good health, with oral health care not being an exception (2).

For someone with disability to maintain a good oral health, s(he) should be able to carry out gestures unassisted on his oral cavity so that his teeth, gums, and oral mucosal tissues are intact and free of disease (3).

In organized communities, approximately 80 percent of those with developmental disabilities live in community-based group residences or at home with their families. These people with disabilities and their caregivers utilize the services of providers in the community for dental services (3).

Although individuals who are disabled are entitled to the same standards of health and care as the general population, these individuals and their families constantly experience barriers to their health care and their inclusion in society violating their human rights.

In areas where resources are limited, the additional burden placed on families with children having disabilities, weakens their economic prowess, which may further perpetuate discriminatory attitudes towards these groups (4).

Children with developmental disabilities presenting conditions that affect their behavior and cognition often have limitations in their abilities to perform

activities of daily living and as such are more likely to have unmet dental needs than are typical in developing children (2,5,6). As a result, these children are more likely to have unmet oral health needs than other children (6,7) as a result they are considered to be at greater risk of developing dental diseases. The reasons for this high risks of developing dental diseases include frequent use of medicine high in sugar, dependence on a caregiver for regular oral hygiene, reduced clearance of foods from the oral cavity, impaired salivary function, preference for carbohydrate-rich foods, a liquid or puréed diet, and oral aversions (7).

Medications used in the management of seizures may cause gingival overgrowth. Other medications often used amongst these groups of individuals, such as glycopyrrolate, trihexyphenidyl, and some attention deficit/ hyperactivity disorder medications (amphetamine, atomoxetine) can result in xerostomia, which increases the risk of dental caries.

In addition, recent policies promoting community based living arrangements and increased independence for people with developmental disabilities may contribute to the increased risk of dental caries by decreasing direct caregiver supports (7, 8, 9, 10).

Visual impairment may impact on oral health through physical, social or informational barriers related to the impairment, attendant medical conditions or lack of information in a suitable format (11). There is little or no information available on the oral health status, the management and practice of people with disabilities in many developing countries especially in Africa. This is because treatment of oral diseases is costly. This is complicated with limited oral health care accessibility in most low income and middle-income countries in Africa (12). It has been reported that approximately 80 % of African countries are not materially equipped and privileged to provide accessible oral health services to its people (12, 13) talk less of providing oral health care to the disables. Thus the aim of the current study was to determine the oral hygiene status and practice of children with disabilities in some centers for people with disabilities in Bafoussam, Cameroon.

Methodology

This was a cross-sectional descriptive study on schoolchildren and adults that took place between January to March 2019 in Bafoussam the regional headquarters of the Western Region of Cameroon.

This study was conducted in the center for the blind and visual impaired also known in

the French acronym as CISPAM (Centre d'Intégration Sociaux Professionnel pour Aveugle et Malvoyant) and the Centre for the rehabilitation of the deaf and the hearing impaired known in the French acronym as CERSOM (Centre d'Education Spécialisé et de Réhabilitation des Sourds et Malentendant) which are the only centers for the care and rehabilitation of blind and deaf patients in Bafoussam, the Regional capital of West Region of Cameroon.

Both centers are all private institutions, offering boarding facilities for children except for a few of the children who stay with their families. They also have basic educational facilities for the children but no health facility.

Data collection

An open ended and closed ended questionnaire and a data capture sheet were used to collect data from children living in boarding facilities in the rehabilitations centers. Children living with their parents were excluded. Both the questionnaire and the data capture sheet were filled by the principal investigator (AMA) after interviewing the participants and after clinical examinations.

The study was subdivided into two parts; *Predesigned pretested questionnaire* composed of two parts;

The first part was concerned with general information of the respondents which included area of impairment, demographic data such as level of education, and marital status.

The second section was concerned with oral health care information, especially oral health practices that is whether they brush their teeth, how they brush, how often they brush, why they brush, if someone helps them to brush, if they have had dental problems before and their utilization of dental services.

Oral examination.

Intra-oral examination was carried out under bright light using a portable dental to assess the oral health status and unmet treatment needs of the children. All information from the clinical evaluation collected using a data captured sheets.

Data analysis

All information from the questionnaires and data captured and analyzed using by Epi info 7.

The results were presented using Microsoft Word and Excel 2010.

Ethical consideration

Authorization to carry out this study was obtained from the ministry of higher Education and scientific research. The study was approved by the authorities of the schools.

The procedure followed and the questions asked were within the reach of the respondents.

Consent forms were shared or read to respondents who willingly signed them in order to participate in the study.

RESULTS

A total of 180 children participated in this study, 102 (57%) were females and 77 (43%) were males. More than half 90 (50.3%) of the participant had total hearing loss, 50 (27.9%) were totally blind, 30 (16.8) were partially blind and the rest 9 (5%) had partial hearing loss (Fig 1.)

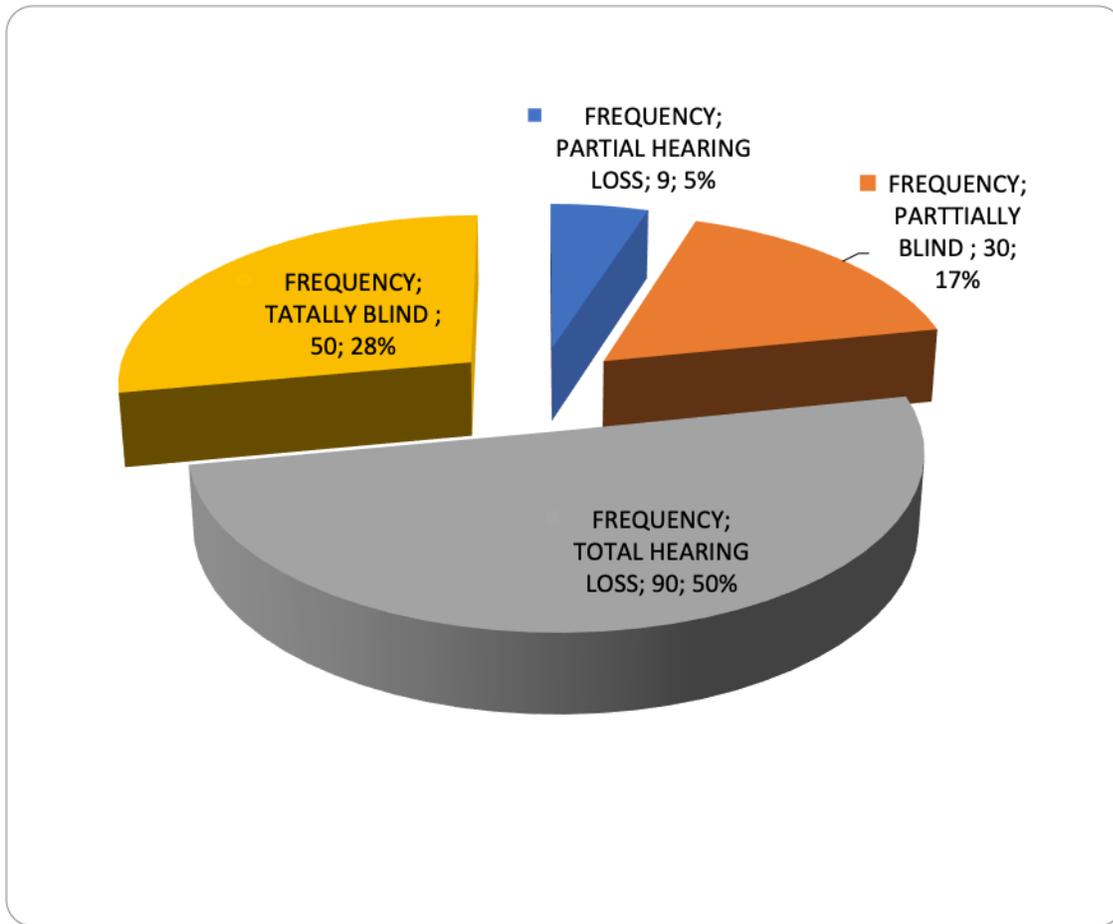


Figure1. Types of impairments.

One third 56(31.3%) of the participants fall within the 5-10 years age group, followed by that of 10-15 years 52(29.1%), 16-20 years 50(27.9%). (Table 1.).

Table 1. Age distribution of participants.

Age range	N(%)
5-10	56(31.3)
11-15	52(29.1)
16-20	50(27.9)
21-25	14(7.8)

26-30	4(2.2)
31-35	2(1.1)

More than half 105(58.7%) of the children carried out tooth brushing themselves, 160(89.2%) brush their teeth everyday while 19(10.8%) were not consistent with their brushing.

More than half 102(57%) of the participants brush their teeth once a day while 70(39%) of the participants brush their teeth twice a day and only 6(3.4%) brush trice a day (Figure 2).

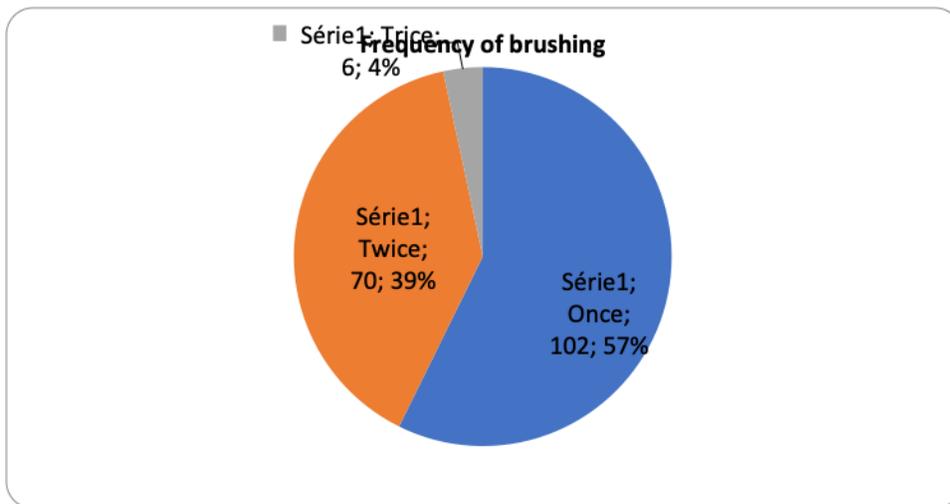
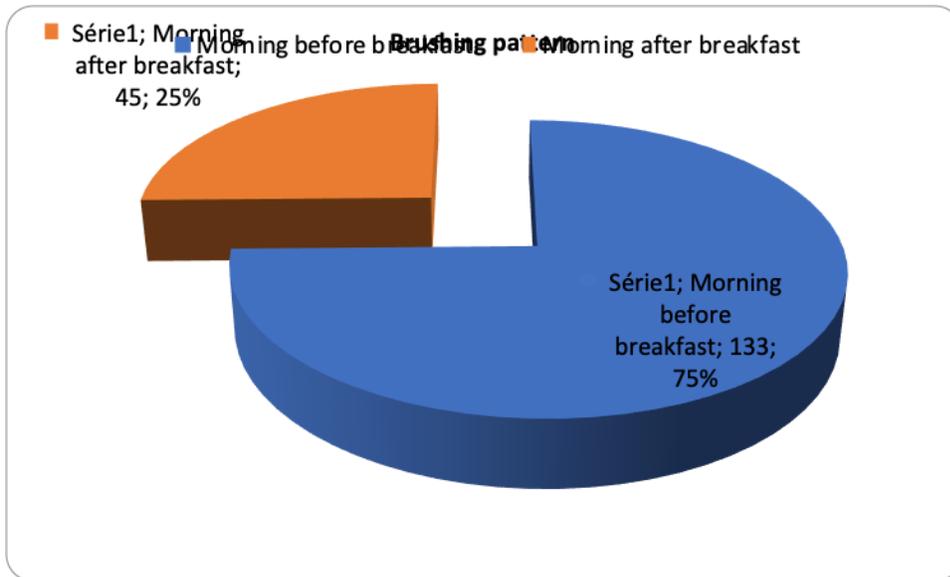


Fig 2. Frequency of brushing

Three quarters of the participants 133 (74.7%) brush their teeth in the morning before breakfast and 45 (25.3%) brush their teeth in the morning after breakfast (Figure 3).



Three quarters 132(73%) of the participants brush their teeth on their own while 48(27%) of the participants were assisted when brushing (Figure 3).

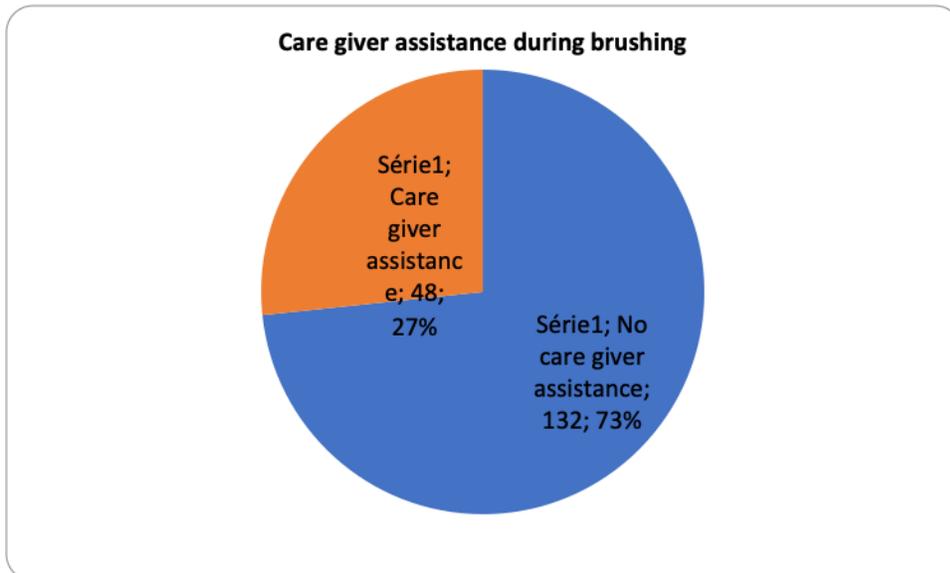


Figure 3. Distribution of respondents with respect to whether caregivers assist them in brushing.

Half of the children 107(57.6%) were assisted by their teachers, 36.2% were assisted by their relations while 6.4% were assisted by their friends (Table 2).

Table 2. Distribution of respondents with respect to carers who help them in brushing up.

CARER GIVER	N(%)
Teachers	104(57.6)
Relations	65(36.2)
Friends	12(6.4)

Effects of oral health problems on their quality of life.

More than a third 81 (45%) oral health problems interfered with their eating habits, while for 41 (22.8%) interfered with their sleep pattern, 15 (8.3%) of the respondents reported that these problems decreased their

ability to study and 2 (1.1%) interfered with their ability to smile or their self-confidence.

Dental visit. Two thirds 108(60%) of the participants had never been to a dentist, 34(19%) had visited a dentist once, while 23(13%) had visited a dentist twice and 14(8%) had visited a dentist more than twice

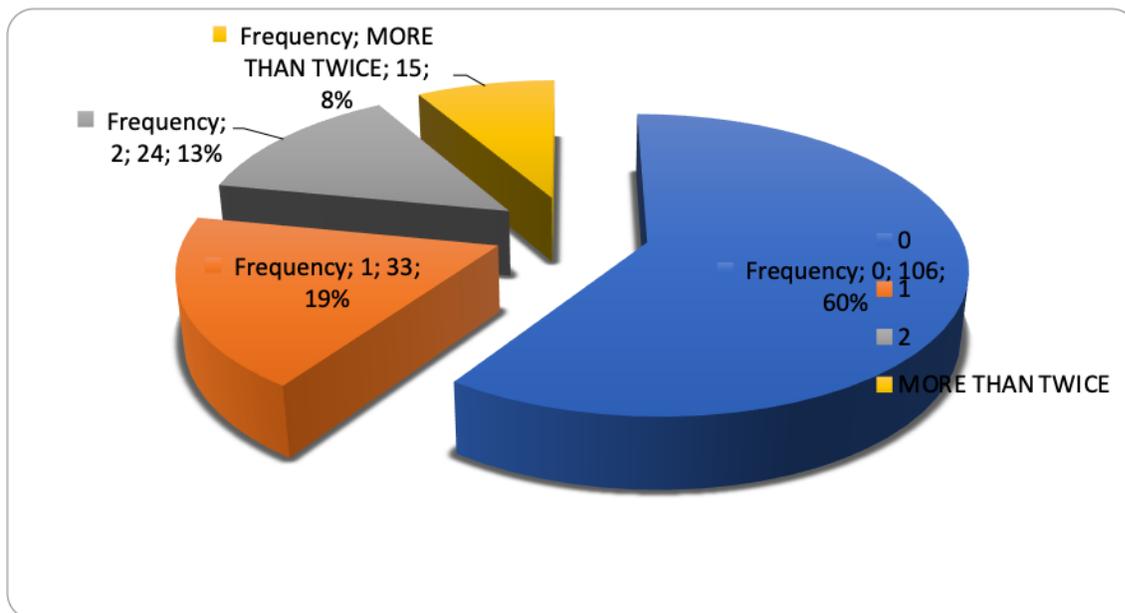


Figure 4. Distribution with respect to visit to a dentist.

Oral hygiene, oral pathologies and treatment needs.

Half 101(56%) of the participants had poor oral hygiene, 45(25%) good oral hygiene and 34(19%) was good.

Three quarters 127(77.3%) of the participants had dental caries, 77(44%)

missing teeth 18(11%) filled teeth and by other pathologies 9(5.3%).

A third 59(33%) of the participants needed tooth filling and scaling and polishing, 32(18%) tooth extraction, 14(8%) needed RCT and orthodontic treatments each. (Table 3)

Table 3. Oral hygiene, oral pathologies and treatment needs.

Oral hygiene	N(%)
Poor	101(56%)
Fair	45(25%)
Good	34(19%)
Oral pathologies	
Caries	127(77.3)
Missing teeth	77(44)
Filled teeth	18(11)
Other pathologies	9(5.3)
Treatment needs	
Scaling and polishing	59(33%)
Dental extraction	32(18%)
Root canal treatment	14(8%)

Orthodontic treatment	14(8%)
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DISCUSSION

This is the first study carried out in Cameroon on people with disabilities. This is important because developmental disorders and their associated disabilities is on the rise worldwide. These disabilities are associated with some oral health challenges, as people with disabilities do not have the independence of taking care of their oral health. Individuals presenting with disability associated with loss of dexterity can lead to some complications that directly or indirectly affect their quality of life. The current study demonstrated the participants of the study presented with poor oral hygiene, which in long term affected the quality of life.

The current study showed a greater proportion of females than males with disabilities. This discrepancy globally is proportionately acceptable taking into consideration that our general population is predominantly females though it demonstrate a slight deviation of the Cameroonian population where 52% is made up of female and 47% males(13).The

results of the current study contradicts a report in the USA where it was reported that data from the National Health Interview Surveys in the USA over 12 years (1997–2008), revealed a higher prevalence of disabilities in boys compared to girls (14). In our study, the majority of the participants were between 5 to 16 years old which in Cameroon represent the dependent group that are under control of their parents and guidance. The 16-20 age groups were moderately represented because this group represents the transitional group that are initiated into adulthood. In these centers, which is also a rehabilitation centre, the people with disabilities are supposed to acquired skills and education that will allow them to be intergrated into the society. That is why there is a persistent decrease of other age groups with the least found in the age group that is greater than 35years old.

Oral hygiene practices. In this study, more than half of the participant presented with poor oral hygiene. However, more than half of the students in the current study had significantly poorer oral hygiene. Another study carried out in India also reported poor

levels of oral hygiene among visually and hearing impaired children (15).

The current study also revealed that more than half of the participants brushed their teeth once a day. Lack of dexterity was the reason given by half of the participants. Though their oral health education knowledge was poor, most of the participants in the current study were motivated to brush their teeth to avoid mouth odour. Other studies in the USA and South Africa revealed that children with disabilities present with poor oral health as well as their level of oral health education have been found to be very low(16,17). This might be due to associated learning disabilities associated with deafness and blindness. It is suggested that oral hygiene education should be added to their health education lessons as a measure of prevention.

Prevalence of dental caries.

The proportion of caries-free children in this study was higher than those reported from a comparable population in Turkey and India (18,19) but lesser than that in Kuwait (19). These discrepancies could be attributed to differences in dietary patterns and accessibility to sweet snacks of these

populations. Shetty and colleagues in the latter study stated that the higher the consumption of sweets and in between snacking, in addition to the daily serving of a sweet dishes at school could be the reason of the very high proportion of blind and deaf children with decayed teeth (20). Other studies on visually and hearing impaired children reported higher caries severity (21, 22). These substantial unmet dental needs should prompt efforts by the dental profession to facilitate health care for individuals with blindness and hearing loss by improving on oral health education to both parents and school authorities and to seek ways to increase their access to dental services.

The oral self-care practices of the participants of the current study was very poor as only a third of them were assisted during brushing mostly by their teachers and their parents. Caregivers and guardians of people with disabilities have a great role to play concerning their oral hygiene as they need to be educated enough to take care of their oral hygiene needs. The current study has shown that manual dexterity (a useful tool in tooth brushing) is not much problem with people with visual and hearing impairment. What they need is just training

and education at an early age in life. This will make them to adapt over time.

The current study demonstrated that oral health quality of life of the greatly affected as more than a third of the respondents were not able to eat, sleep, study and faced difficulties in smiling. Concerning smiling especially for the blind because they do not see, they cannot see the impact in quality of life. All these factors affecting the quality of life can be placed under control if preventive and curative measures are put in place, Though the concern for esthetics for the blind is reduced, it is mandatory for people with visual impairment to enjoy maximum oral care.

Unmet oral treatment needs. The frequency of unmet treatment needs was high especially for dental caries. Dental care is the most frequently unmet health care need for children with special health care needs (23). This is reflected in the current study where more than half of the participants needed urgent dental treatment like extraction, RCT, and fillings indicating a serious lack of access to oral health care facilities and poor motivations towards dental care. The current study also showed that the majority of the study population had

never visited a dentist. This low oral health care seeking behavior can be attributed to low motivation and due to other barriers to receiving dental care such as cost of the service, transportation, lack of trained and experienced dentists (24). Restricted financial resources and access to facilities for complex treatment needs requiring special care should be responsible. Negligence on the part of parents and school authorities in facilitating dental treatment for blind and deaf children are very determinants to be considered in the oral health of these children.

Primary health care providers may influence access to dental care by oral health assessment and prompt dental referral (24). One of the current themes in disability policy is the promotion of partnership with all key stakeholders including people with disabilities and their families and carers (24) such as this screening exercise. The establishment of relationships with family support groups to reach parents and other caregivers will improve the oral health of the children (24).

CONCLUSION

The prevalence of dental caries among the blind and deaf subjects is poor and

majorities of the participants in the study were in need of specific dental care. The oral health status of the deaf and dumb affect their quality of life.

Good oral hygiene practices are not respected among respondents. Manual dexterity is not a major problem in the blind and deaf. Therefore, the practice of good oral hygiene can be improved through health education and practices of both participants and carers. There is a clear need to involve the dental profession more actively in dietary counseling and provision of preventive oral health care and implemented for these high-risk patients.

RECOMMENDATIONS

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Based on the results of this study, the following recommendations are advanced:

The funders of these schools should invite the dentists and the dental therapists to provide dental education to the parents and care givers of blind and deaf children concerning the importance of the preventive approach and regular dental checkup in the dental clinic.

For the government, relevant oral health promotion and treatment programs need to be established urgently. More attention has to be directed by the oral health authorities to establish school- based dental care programs especially for high risk patients.

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