

Original Article

Oral Hygiene Status of Mentally Challenged Adolescents in Chennai: A Cross-sectional Study

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ABSTRACT

Background: Oral health contributes significantly for the well-being and systemic health of human beings. Lack of oral hygiene can lead to several ailments that can impair the quality of life. Oral hygiene maintenance can be severely challenged in children with mental disorders. **Aim:** The aim of this study was to assess the oral hygiene status of mentally challenged adolescents in Chennai. **Materials and Methods:** Four residential schools housing mentally challenged children were selected for the study, and fifty children were chosen randomly from each school. Informed consent was obtained from the school authorities, local authorities, and parents. The oral hygiene status was evaluated by estimating decayed, missing, filled teeth (DMFT) index, and oral hygiene index (OHI)-simplified. **Results:** The mean age of the children included in the study was 15.3 ± 2.7 . Out of the 200 children, 128 were male and 72 were female. The mean DMFT for the males was 2.03 ± 0.45 and 1.96 ± 0.34 for females. The mean OHI value for males was 2.41 ± 1.2 and 2.22 ± 0.96 for females. **Conclusion:** The oral hygiene status is poor and inadequate among the mentally challenged adolescents, and hence, meticulous training and awareness programs need to be initiated to address this concern.

KEYWORDS: *Decayed missing filled teeth index, dental caries, mentally challenged adolescents, oral hygiene index*

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INTRODUCTION

Intellectual disability (ID), also known as general learning disability, and mental retardation (MR) are a generalized neurodevelopmental disorders characterized by significantly impaired intellectual and adaptive functioning. It is defined by an intelligence quotient (IQ) score under 70 in addition to deficits in two or more adaptive behaviors that affect everyday, general living. Once focused almost entirely on cognition, the definition now includes both a component relating to mental functioning and one relating to individuals' functional skills in their environments. As a result of this focus on the person's abilities in practice, a person with an unusually low IQ may not be considered to have intellectually disability.^[1] ID is subdivided into syndromic ID, in which intellectual deficits associated with other medical and behavioral signs and symptoms are present, and nonsyndromic ID, in which intellectual

deficits appear without other abnormalities. Down syndrome and Fragile X syndrome are examples of syndromic intellectual disabilities.^[2]

ID affects about 2%–3% of the general population. 75%–90% of the affected people have mild ID. Nonsyndromic or idiopathic cases account for 30%–50% of cases. About a quarter of cases are caused by a genetic disorder, and about 5% of cases are inherited from a person's parents. Cases of unknown cause affect about 95 million people as of 2013.

Dental caries and periodontitis are the most commonly seen oral diseases seen in almost all the age group in dentate humans. Several factors contribute to the varied prevalence of these two common oral diseases in the various human subpopulation. MR can markedly affect

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the oral hygiene practices in the affected individuals and subsequently the oral and systemic health.^[3] Maintenance of oral hygiene in such mentally challenged individuals poses a great challenge to the individuals and the health-care providers as well. Difficulties in cognitive learning, fluctuation in memory patterns, ability to understand and follow instructions can aggravate oral health issues in these participants.

The oral health status in mentally retarded adolescent children has been reported variedly in the literature and needs to be explored further.

Aim

The aim of this study was to assess the oral health status of mentally retarded adolescents in Chennai city, Tamil Nadu, India.

MATERIALS AND METHODS

Four residential schools housing mentally challenged children were selected for the study, and fifty children were chosen randomly from each school. Informed consent was obtained from the school authorities, local authorities, and parents. A pro forma was prepared and filled, comprising demographic data of the individual. IQ level for each participant was assessed using the Wechsler Intelligence Scale for Children for 5–16-year-old and Wechsler Adult Intelligence Scale for more than 16-year-old. The oral hygiene habits were also assessed based on questions of frequency of brushing and asked for usage of any auxiliary aids.

Following the pro forma, the oral hygiene status was evaluated by estimating decayed, missing, filled teeth (DMFT) index and oral hygiene index-simplified (OHI-S) index by a single operator. The examination was commenced which involved an intraoral examination to assess the oral hygiene levels. The children were examined in their schools with sufficient lighting. The data were collected and the mean values of OHI-S and DMFT were calculated.

RESULTS

The oral hygiene habits assessed revealed the following results. The mean age of the children included in the study was 15.3 ± 2.7 . Out of the 200 children, 128 were male and 72 were female. The study group reported a habit of brushing using tooth brush and paste, with a frequency of brushing once daily assessed to be 86% and twice daily to be 14% [Table 1]. The usage of auxiliary aids was reported in about 6% of the study population [Table 2]. The mean OHI value for males was 2.41 ± 1.2 and 2.22 ± 0.96 for females both being interpreted as a fair score [Table 3]. The mean DMFT

for the males was 2.03 ± 0.45 and 1.96 ± 0.34 for females [Table 4].

DISCUSSION

The results of the present study revealed compromised oral hygiene in the mentally challenged children. Mentally challenged participants exhibited moderate to poor levels of oral hygiene in many of the studies reported in the literature. Solanki *et al.*^[4] observed the OHI-S of mentally challenged individuals as 4.56 ± 1.236 . The study population in their survey had a wide age spectrum. However, this present study observed a mean OHI-S scores of 2.41 ± 1.2 in males and 2.22 ± 0.96 in females, which is relatively lesser than the observed values by Kumar *et al.* This could be attributed to the lesser age spectrum and relatively better systemic health of the study participants.

Kumar *et al.*^[5] observed a statistically significant difference in plaque and gingival indices in mentally disabled individuals among those who brushed the teeth themselves and those helped by others. The compromised levels of oral hygiene can be attributed to several factors such as lack of knowledge about oral hygiene practices, low priority given to oral health care in cities, inaccessibility to health-care centers, overall poor socioeconomic status of parents and guardians.

It was observed that the mentally challenged children are unable to maintain adequate oral hygiene levels

Table 1: Frequency of brushing

Frequency of brushing	Number of participants (n)	Percentage of participants
Once daily	172	86
Twice daily	28	14

Table 2: Usage of auxiliary aids

Use of auxiliary aids	Number of participants (n)	Percentage of study population
Usage	12	6
Nonusage	188	94

Table 3: Oral hygiene index simplified status

OHI-S index	Number of participants (n)	Mean value
Male	128	2.41±1.2
Female	72	2.22±0.96

OHI-S: Oral hygiene index-simplified

Table 4: Decayed, missing, filled teeth index status

DMFT index	Total number of participants (n)	Mean value
Male	128	2.03±0.45
Female	72	1.96±0.34

DMFT: Decayed, missing, filled teeth

by manual brushing techniques due to the limited motor skills, lack of comprehension about oral hygiene maintenance, and difficulty in learning brushing techniques. Electrical toothbrushes, trained dental hygienists, occupational therapist can be of great use in monitoring these children to improve oral health care.

Several studies on oral diseases in mentally challenged children clearly establish poor hygiene status in them. Kumar *et al.*^[5] and Chandra and Raja^[6] have done a similar study on oral hygiene status on mentally challenged children and reported similar results. Jain *et al.*^[7] and Allison *et al.*^[8] have also reported a 44.3% and 60% malocclusion in these participants. The presence of malocclusion can be greatly increase the risk of periodontitis and dental caries and can substantially aggravate oral health deterioration in the absence of adequate maintenance. However, Rao *et al.*^[9] have reported the occurrence of dental caries to be comparatively less than normal children. However, our study has observed a DMFT status of 2.01 ± 0.912 , which is poor. Kamatchy^[10] and Nunn *et al.*^[11] provided a correlation between severity of mental handicap and various levels of oral hygiene.

Kamen *et al.*^[12] did a multiple logistic regression analysis and had revealed a higher odds ratio for DMFT status among patients with Down syndrome which is similar to this study. However, in the present study, the DMFT was higher than the study performed by Jain M *et al.* when the OHI is taken in concern the values are marginally higher when compared to the present study. The present study also saw a similar inference with respect to OHI between males and females, where males had poor oral hygiene than female counterparts. Similar results were seen in Rao *et al.*^[9] in a study performed in mentally challenged children in Nigeria.

The other variables influencing oral hygiene practices among the mentally retarded children are the age, gender, type, and intensity of MR, socioeconomic status, and perception of oral health. In a diverse nation like India, there is an absolute need to maintain vigorous oral hygiene protocols to enhance the overall oral health of mentally challenged children. Most of the children are of poor socioeconomic strata and educational background and have no formal and proper techniques in oral hygiene maintenance. The dietary habits in mentally retarded children are also erratic and this could significantly influence oral health. This study also observed a very less usage of dental floss and mouth rinses in the mentally challenged children. Hence, enhanced dental awareness programs and camps catering

the needs of mentally challenged children need to be organized frequently to spread awareness and to enhance the quality of oral health maintenance.

CONCLUSION

This study concluded that the oral hygiene status and maintenance among the mentally retarded adolescent children were poor and inadequate. Hence, oral health education programs need to be initiated and implemented vigorously to address the concern.

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Conflicts of interest

There are no conflicts of interest.

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