

## ORAL HEALTH STATUS OF SPECIAL OLYMPICS ATHLETES SEEN AT ISLAMABAD DENTAL HOSPITAL

<sup>1</sup>SAQIB ARSHAD KHAN

<sup>2</sup>SAIMA AZAM

<sup>3</sup>BEENISH QURESHI

### ABSTRACT

*Good oral health determines the overall health of an individual. It can have a significant impact on the physical and mental well-being, quality of life, appearance and interpersonal relations of an individual. The dental health of patients with special needs is often ignored and requires special attention. The aim of the study was to determine the oral health status and dental needs of special olympic athletes. A HAS(healthy athlete software) form was used to collect demographic and clinical data regarding oral hygiene practices (e.g. brushing), oral health status (e.g. decayed, missing and filled teeth, gingival health status and fluorosis) and urgency of treatment need. The data collected was analyzed using SPSS version 21. Percentages and frequencies were calculated for categorical variables. A total of 191 special olympic athletes participated in the study. The majority of participants (86.4%) brushed their teeth regularly. Sixty percent of the participants were observed to have carious lesions and 36.1% had gingivitis. Traumatic tooth loss was observed in 8.9% of subjects. Fourteen (7.3%) subjects had fluorosis and preventive measures such as sealants were seen in only 2(1%) subjects. Nine (4.7%) subjects had fillings while the rest of 181 had no restorative work done. Urgency of treatment evaluation indicated that 45 (23.3%) subjects required urgent treatment.*

**Key Words:** Disabled Persons, Dental Care for Disabled, Dental Caries, Oral health, Athletes.

### INTRODUCTION

Oral health is an important component of overall health of adults as well as children. It can have a significant impact on an individual's physical and mental well-being, quality of life, appearance and interpersonal relationship.<sup>1</sup> Approximately 650 million people in the world live with a disability. American Health Association defines a child with disability as "a child who for various reasons cannot fully make use of all his or her physical, mental and social abilities".<sup>2</sup>

Patients with special needs have limitations in their abilities to perform activities of daily life. They may have limitations in performing oral hygiene practices due to their motor, sensory and intellectual disabilities. Manual dexterity difficulties in children or adults with special needs may lead to oral hygiene problems, which may result in plaque accumulation and development of carious lesions. It has been reported that special

individuals are at greater risk of developing dental diseases due to their preference for carbohydrate rich foods, frequent intake of sugary medicines and impaired salivary function.<sup>3</sup>

Studies on the oral health status of special patients have shown that patients with special health care needs have more dental problems and more untreated dental diseases compared to healthy controls.<sup>4</sup> These individuals cannot maintain good oral hygiene independently and depend on their parents and caregivers for general care. Moreover, medications taken by these individual for the treatment of underlying disease can cause gingival overgrowth, thus causing periodontal problems.<sup>5</sup>

It has been reported that provision of dental treatment is more challenging in these individuals. These individuals have altered general behavior and altered level of social functioning. Moreover they are often neglected either because of ignorance, fear, misconception, negative attitudes and lack of knowledge of parents and caregivers.<sup>6</sup> In Pakistan, few studies have been published on the oral health status of population with special needs. Therefore the aim of this study was to assess the oral health status and dental needs of special olympic athletes who reported Islamabad Dental Hospital.

<sup>1</sup> **Corresponding Author:** Dr Saqib Arshad Khan, PG Trainee, Operative Dentistry, Islamabad Medical and Dental College  
Email: sakib\_khan@live.com Cell: +92-312-2612200

<sup>2</sup> Prof Saima Azam, BDS, FCPS, Head of the Department of Operative Dentistry

<sup>3</sup> Dr Beenish Qureshi, BDS, FCPS, Associate Professor, Operative Dentistry

**Received for Publication:** April 20, 2017

**Revised:** June 13, 2017

**Approved:** June 13, 2017

**METHODOLOGY**

A cross-sectional study was conducted to assess the oral health status of the subjects of Special Olympic, Pakistan. Before starting the study, a letter was sent to the special olympic Pakistan, with detailed information on the study protocol and formal permission was obtained. Informed consent was obtained from the parents and caregivers of the participant.

Dental screening of special olympic athletes was conducted at Islamabad Dental Hospital as part of Healthy Athletes Special Smiles event. The HAS (Healthy Athlete Software) form was used for screening. The doctors were trained for standardized protocol of oral health screening of special olympic athletes. Two hundred and thirty three patients from special olympic Pakistan were screened. Information about socio-demographic characteristics and oral hygiene practices of special olympic athletes was also recorded.

Careful visual and tactile inspection was performed using a plain mouth mirror and explorer to gather following information:

- i Oral hygiene status
- ii Presence of any pain related to teeth or any other reasons
- iii Decayed, missing and filled teeth
- iv Preventive measures such as sealants
- v Gingival health status
- vi Injuries resulting in any tooth loss
- vii Urgency of treatment requirement.

Oral hygiene was categorized as poor, fair and good and correlated with age and gender. Data was entered in Statistical Package for the Social Sciences (SPSS) version 21 for statistical analysis. Frequencies and percentages were calculated for the categorical variables.

**RESULTS**

Two hundred and thirty three special olympic athletes participated in the study. After excluding incomplete forms, 191 forms were analyzed. Table 1 shows distribution of patients according to age and gender. Majority of the individuals (86.4%) were brushing their teeth regularly. Despite this, 136 (71.2%) participants had carious lesion. Moreover, 36.1% participants showed sign of gingivitis. Oral hygiene status of special athletes with different age group is shown in Fig 1.

Tooth loss due to injuries was also recorded. Trauma was one of the main reasons of their tooth loss. Fig 2 represents the frequency of missing teeth at different ages. Moreover, it was observed that only 4.7% subjects had fillings and preventive measures such as sealants were seen in only 1% subjects. Assessment of urgency of treatment need showed that 45(23.3%) subjects

TABLE 1: DEMOGRAPHIC CHARACTERISTICS

Characteristics	N	%
Male	140	73.3
Female	51	26.3
Total	191	100
<b>Age Range (years)</b>	<b>N</b>	<b>%</b>
5-10	39	20.4
11-15	112	58.6
16-20	35	18.3
More than 20	5	2.7
Total	191	100

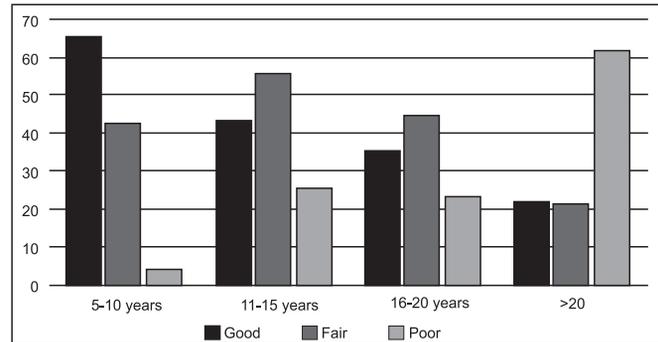


Fig 1: Oral Hygiene Status by Age Group

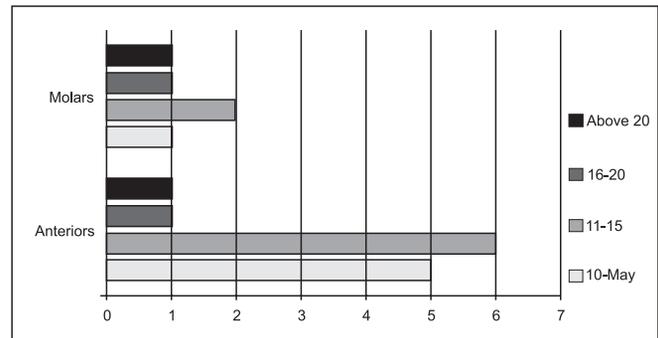


Fig 2: Number of Missing Teeth

needed urgent treatment whereas 47(24.6%) subjects were in need of maintenance and 98(51.3%) subject did not require urgent treatment.

**DISCUSSION**

Poor dental health and an increased need for oral health care have been reported among patients with disability as compared to their healthy counterparts.<sup>7,8</sup> This may be related to the underlying disability that compromises the ability to perform an oral hygiene procedure efficiently or may be due to the underlying medical condition or associated financial and social constraints.<sup>9</sup> The present study evaluated the oral health status among young athletes with special needs who attended the outpatient department of Islamabad Dental Hospital.

The data generated by this study clearly showed that despite the high frequency of tooth brushing, the prevalence of dental caries and periodontal disease was high. It was observed that irrespective of the type and severity of disability, most participants (86%) regularly brushed their teeth once a day under the supervision of their parents or caregiver. Frequency was highest in the age group of 11 to 16 years (96%) than in other age groups. Despite this, 65.8% of participants in the 11-16 years age group had dental caries. The rate of tooth decay observed in this study was well above the national index for this age group without disabilities. In addition, 45% of the participants had poor oral hygiene. The results of our study were in accordance with a study conducted at Belgium which reported 79.3% of the subject brushed their teeth at least once but the effectiveness of plaque removal was inadequate.<sup>10</sup> These results may reflect an inadequate brushing technique, aversion to oral care, long term consumption of medications in the form of sweetened syrup, decreased salivary function and preference for carbohydrates by these individuals.<sup>10,11</sup> Furthermore, ability to practice adequate oral hygiene was related to the training of parents and caregivers to remove plaque effectively as because patients with disability are dependent on their parents and caregivers.<sup>12</sup>

Previous studies have shown that special person with special needs have greater tendency to develop gingivitis.<sup>10</sup> According to a study conducted by Carla Fernandez Rojaz et al 70.4% of Romanian children with special needs had pronounced signs of gingivitis.<sup>12</sup> Post-examination data in this study showed that only 36.1% of participants had gingival signs. These results were encouraging and can be described by early intervention given to these patients during training.

Special olympic athletes may experience significant barrier in accessing comprehensive dental care. In this study, only a small portion of the participants had visited dentists. These results were consistent with previous studies.<sup>8,13</sup> Detailed analysis revealed that 4.7% of subjects had restorations and only 1% received pit and fissure sealants, thus highlighting the need for preventive treatment. Similar results were reported by Carla Fernandez Rojaz et al who stated that 4.3% Polish and 3.8% Romanian athletes received fissure sealants in contrast to 37.7% Slovenian athletes.<sup>12</sup> These results can be attributed to high cost of such procedures which can add an additional financial burden on the families. Furthermore, lack of incentives for the dentists and lack of training of dentists to treat patients with special needs can contribute to these findings.<sup>12</sup>

Traumatic injuries are often expected in athletes when practicing sports. For athletes with special needs, these injuries are often related to slow reflexes, poor lip closure or malocclusion such as increased over jet.

In addition, self-inflicted traumatic oral injuries are often reported in individuals with intellectual disability.<sup>14</sup> In this study, 8.9% of participants reported to have tooth loss due to traumatic dental injuries. In a similar study, 12.4% of participants were expected to have dental trauma.<sup>10</sup>

Some limitations of this study were that this study was targeting only special olympic athletes who attended the Healthy Athlete Special Smile event. Therefore, the study cannot be extrapolated for the entire population of patients with special needs. Furthermore, several studies have shown that athletes represent a better and more functional part of this population.<sup>14-16</sup> Despite the limitations, results of our study still highlight the high needs for comprehensive oral health care required by this population. The author recommends that similar studies should be conducted at national level to target all special schools to assess the oral needs of such individuals. This will encourage the government to take necessary steps to improve facilities and design programs to prepare dentists. Moreover, it will encourage parents and caregivers to regularly get dental checkup of their children to allow the implementation of successful dental care practices.

## CONCLUSION

In this study it was observed that the dental health of disabled person is poorer than that of general population. There was a high prevalence of dental caries and the need for restorative care among these subjects.

## REFERENCES

- 1 Kwan SY, Petersen PE, Pine CM, Borutta A. Health-promoting schools: an opportunity for oral health promotion. *Bulletin of the World Health organization*. 2005;83(9):677-85.
- 2 Altun C, Guven G, Akgun O, Akkurt M, Basak F, Akbulut E. Oral health status of disabled individuals attending special schools. *European journal of dentistry*. 2010;4(4):361-66.
- 3 Norwood KW, Slayton RL. Oral Health Care for Patients With Developmental Disabilities. *Pediatrics*. 2013;131(3):614-19.
- 4 Oredugba FA, Akindayomi Y. Oral health status and treatment needs of patients and young adults attending a day centre for individuals with special health care needs. *BMC Oral Health*. 2008;8(1):1-8.
- 5 Hall E. Prevention and treatment considerations in patients with drug-induced gingival enlargement. *Current opinion in periodontology*. 1996;4:59-63.
- 6 Pareek S, Nagaraj A, Yousuf A, Ganta S, Atri M, Singh K. Effectiveness of supervised oral health maintenance in hearing impaired and mute children- A parallel randomized controlled trial. *Journal of International Society of Preventive & Community Dentistry*. 2015;5(3):176-82.
- 7 Hennequin M, Moysan V, Jourdan D, Dorin M, Nicolas E. Inequalities in oral health for patients with disabilities: a French national survey in special schools. *PLoS One*. 2008;3(6):e2564.
- 8 Gardens SJ, Krishna M, Vellappally S, Alzoman H, Halawany HS, Abraham NB, et al. Oral health survey of 6-12-year-old patients with disabilities attending special schools in Chennai, India. *International journal of paediatric dentistry*. 2014;24(6):424-33.

- 9 Vellappally S, Gardens SJ, Al Kheraif A-AA, Krishna M, Babu S, Hashem M, et al. The prevalence of malocclusion and its association with dental caries among 12-18-year-old disabled adolescents. *BMC oral health*. 2014;14(1):123.
- 10 Fernandez C, Declerck D, Dedecker M, Marks L. Treatment needs and impact of oral health screening of athletes with intellectual disability in Belgium. *BMC oral health*. 2015;15(1):170.
- 11 Wiener RC, Vohra R, Sambamoorthi U, Madhavan SS. Caregiver Burdens and Preventive Dental Care for Patients with Autism Spectrum Disorder, Developmental Disability and/or Mental Health Conditions: National Survey of CSHCN, 2009–2010. *Maternal and child health journal*. 2016;20(12):2573-80.
- 12 Marks L, Fernandez C, Kaschke I, Perlman S. Oral cleanliness and gingival health among Special Olympics athletes in Europe and Eurasia. *Medicina oral, patologia oral y cirugia bucal*. 2015;20(5):e591.
- 13 Oredugba FA, Akindayomi Y. Oral health status and treatment needs of patients and young adults attending a day centre for individuals with special health care needs. *BMC oral health*. 2008;8(1):1.
- 14 Fernandez C, Kaschke I, Perlman S, Koehler B, Marks L. A multicenter study on dental trauma in permanent incisors among Special Olympics athletes in Europe and Eurasia. *Clinical oral investigations*. 2015;19(8):1891-98.
- 15 Reid BC, Chenette R, Macek MD. Special Olympics: the oral health status of US athletes compared with international athletes. *Special Care in Dentistry*. 2003;23(6):230-33.
- 16 Trihandini I, Wiradidjaja Adiwoso A, Erri Astoeti T, Marks L. Oral health condition and treatment needs among young athletes with intellectual disabilities in Indonesia. *International journal of paediatric dentistry*. 2013;23(6):408-14.

**CONTRIBUTIONS BY AUTHORS**

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| <b>1 Saqib Arshad Khan:</b> | Statistical Analysis and writer of the article |
| <b>2 Saima Azam:</b>        | Data collection, Methodology                   |
| <b>3 Beenish Qureshi:</b>   | Data collection, Data compilation              |