

Puerto Rican Athletes With Special Health Care Needs: An Evaluation of Oral Health Status

*Lydia M. López del Valle, DMD, MPH, H. Barry Waldman, DDS, MPH, PhD
Steven P. Perlman, DDS, MScD*

ABSTRACT

Purpose: Limited data are available regarding the oral health of individuals with disabilities who reside in Puerto Rico. The Special Olympics Special Smiles oral health screening, education, and referral program provides an opportunity to explore the dental status and needs of Special Olympics athletes with intellectual and developmental disabilities. The purpose of this paper was to evaluate the oral health status of Special Olympics athletes participating in an event in Villalba, Puerto Rico in 2004.

Methods: A total of 161 self-selected athletes with intellectual disabilities were screened by 4 trained and calibrated dentists utilizing the criteria standards of the National Institute of Dental and Craniofacial Research, Special Olympics Special Smiles, and the Centers for Disease Control and Prevention developed for decayed, filled, and missing teeth. Oral hygiene, reports of oral pain, and sociodemographic information were recorded. The statistical test used was the chi-square test to establish associations and logistic regressions. Data were analyzed using EPI-INFO and SPSS programs.

Results: Almost 45% of examined athletes (mean age=19 years) had untreated dental decay; 33% had missing teeth, 60% had gingival signs of periodontal disease, and 16% reported dental pain.

Conclusion: Results of clinical examinations indicate a population with intellectual disabilities that is in significant need of preventive and restorative oral health needs. (J Dent Child 2007;74:130-2)

KEYWORDS: SPECIAL CARE PATIENTS, ORAL HEALTH, EPIDEMIOLOGY

More than 51 million US civilian noninstitutionalized residents (almost 20% of the population) have some form of long-lasting disability, including almost 1 million residents of Puerto Rico (27% of the Commonwealth's residents).¹⁻³ An extended series of reports, including the Surgeon General's study, Oral Health in America,⁴ The National Survey of Children with Special

Health Care Needs (SHCN),⁵ National Survey of Children's Health,⁶ and reports from Special Olympics⁷—detail the untreated oral health conditions of special health care need (SHCN) patients.

Additional writings cite the numerous barriers, including:

1. limited educational opportunities to prepare dental professionals for the care of Special Health Care Needs (SHCN) patients;
2. added time requirements;
3. inadequacies of third-party financial remuneration;
4. paperwork requirements; and
5. possible behavioral disturbances in the private office setting.⁸⁻¹⁴

Nevertheless, an increasing number of SHCN patients have become residents of local communities (and dependent upon local health practitioners) as state-run facilities have discharged the overwhelming majority of their residents.

*Dr. del Valle is professor and researcher, Deanship of Research, University of Puerto Rico School of Dentistry, Puerto Rico, and local coordinator of the Special Olympics Special Smiles program, San Juan, Puerto Rico; Dr. Waldman is Distinguished Teaching Professor, Department of General Dentistry, Stony Brook University Stony Brook, NY; Dr. Perlman is professor, pediatric dentistry department, and senior global clinical advisor and founder, Special Olympics Special Smiles, Boston University, Boston, Mass.
Correspond with Dr. del Valle at llopez@rcm.upr.edu*

The dental residency program of the University of Puerto Rico, San Juan, Puerto Rico, is currently carrying out a survey of dentists throughout the island regarding the particular obstacles and barriers that may be specific to the Commonwealth or quite similar to those reported in other jurisdictions. The survey also aims to record practitioner willingness to provide services.¹⁵

The current study was carried out to describe and evaluate the oral health status and treatment needs of the SHCN patients who participated in the Special Smiles component of the Special Olympics Program. The Special Olympics provides year-round sports training and athletic competition to more than 2.25 million people with intellectual disabilities in more than 150 countries.

The Healthy Athlete program (including Special Smiles, Opening Eyes, Healthy Hearing, Fun Fitness, and Health Promotion) was conducted during a Special Olympics Event in Villalba, Puerto Rico in 2004. The Healthy Athlete program provides a review of the general health status of athlete participants with intellectual disabilities and prevention and health education services.

METHODS

The Special Smiles volunteers (including dentists, dental hygienists, and dental school students) reviewed the oral health status of the participating athletes who were willing to participate in the program. Noninvasive oral examinations (using mouth mirrors and flashlights) reviewed oral hygiene, gingival status, dental restorations, dental caries, and missing teeth. The examined athletes (or parents-guardians) were questioned regarding a series of basic sociodemographic items the frequency of dental visits, and the presence of oral pain. Each examined athlete was provided with a one-on-one oral health educational session on brushing and flossing teeth and given an oral hygiene package, including a toothbrush, toothpaste, and floss. At selected sites, where sufficient numbers of volunteers were present, fluoride varnish was applied and mouthguards were fabricated, this was not carried out at the Villalba, Puerto Rico site. In those instances where an athlete needed dental services and had no family dentist, referrals were made to participating practitioners in the individual's locale.

The research protocol for reviewing the oral health status of the participating athletes was considered and approved by the Institutional Review Board of the University of Puerto Rico. Of the 250 participants in the Special Olympic Games, 161 athletes with intellectual disabilities volunteered to participate in the Special Smiles examination study. All data for the study were based upon the results of dental screenings and questionnaires of these 161 individuals.

Four dentists, who had been trained and calibrated using Center for Disease Control and Prevention and Special Smiles Program criteria, recorded untreated caries, missing and filled teeth, oral pain and hygiene, and a series of sociodemographic factors.

Statistical analyses were carried out using Epi-Info v. 3.4 (Centers for Disease Control, Atlanta, Ga.) and SPSS v. 6.0 (SPSS Inc., Chicago, IL). Significance was determined at the $P=.05$ level.

FINDINGS

The average age of the screened athletes was approximately 19 years, and approximately two thirds were male. Of the examined athletes: more than half (60%) of the examined athletes had gingival signs of periodontal disease; almost half had untreated dental caries; one third had missing teeth; 16% reported dental pain; and half needed preventive mouthguards for sports activities (Table 1).

Comparisons using chi-square tests and regression analyses verified significant relationships can be seen in Table 2.

Table 1. Oral Health Findings of the 161 Examined Athletes

Oral health conditions	Proportion (%)
Gingival signs of periodontal disease	60
Untreated dental caries	45
Missing teeth	33
Oral pain	16
Required mouthguards for sports activities	52
Dental restorations	65

Table 2. Probability Associations Between Specific Variables of the Study

Study variable	P-value
Pain report at the time of examination and type of sport practiced	.05
Age group and filled teeth	.05
Region of Puerto Rico and missing teeth and report of injury at the time of dental exam	<.05
Type of sports and use of mouthguards	<.01
Gender and untreated decay	.05

In some instances, mouthguards had been fabricated for athletes participating in contact sports. In most instances, these athletes reported that they had used the services of a pediatric dentist.

DISCUSSION

This is the first report on the oral health of SHCN patients in Puerto Rico with data obtained from the 2004 Special Olympics event. Since the examined population represents a convenience sample of Special Olympic participants (who themselves, may not be a representative of all SHCN patients), the results may differ from the oral health status of the general Puerto Rican population with intellectual disabilities.²

Nevertheless, a lack of oral health services is suggested by the:

1. high prevalence rate of untreated dental caries;
2. periodontal disease;
3. oral pain;
4. limited use of protective mouthguards; and
5. relationship between older ages and more severe dental disease.

The limited availability of dental practitioners to provide general and specialized dental services and the lack of the dental insurance are also contributory factors.

These findings indicate the need for increased accessibility for Puerto Rican SHCN residents to preventive and restorative dental services, methods to ensure the use of safety measures for SHCN patients who participate in active sports programs, efforts to bring together the Puerto Rico Dental Association, private dentists, and the Public Health Department to develop procedures to increase access to services for the young (and not-so-young) SHCN patients.

The 2006 modification of standards for accreditation of dental and dental hygiene schools to ensure the preparation of new graduates to provide care for SHCN patients should help with this effort.^{8,16} Studies of dental practitioners and students indicate that those individuals with clinical experiences during their years of training were more likely to provide services to SHCN patients.^{17,18}

CONCLUSIONS

The results of numerous reviews of SHCN patients are similar to the oral health conditions of the Special Olympic athletes found in this study. These conditions include: (1) extensive gingival signs of periodontal disease; (2) high levels of untreated dental caries; (3) large numbers of missing teeth; and (4) many cases of reported dental pain. The report on the findings from the National Survey of Children with Special Health Care Needs specified that "the service most commonly reported as needed but not received was dental care..."⁷⁵ A recent report of the Special Olympics and the US General Surgeon emphasized the significant disparities and unmet health needs encountered by persons with disabilities.¹⁹ The current need is to now develop plans to provide these services.

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