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# Oral health and nutritional status of semi-institutionalized persons with mental retardation in Brazil

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### ABSTRACT

Association between oral health status and nutritional status was investigated in 200 semi-institutionalized persons with mental retardation aged 5–53 years, 45.5% female, in the cities of Florianópolis and São José, province of Santa Catarina, Brazil. In this cross-sectional study, clinical-odontological examination revealed a high percentage of individuals (68%) with heavily compromised dentition. The index of decayed, missing and filled deciduous and permanent teeth, which increased from  $2.85 \pm 2.87$  in children to  $20.5 \pm 6.86$  units in adults, was used to classify the individuals' oral health status. Anthropometric evaluation revealed the prevalence of suboptimal nutritional status in 52% of children and adolescents [22% underweight, 30% at risk of overweight or overweight], and in 60% of adults [7% underweight, 53% overweight or obese]. Significant association was found between unsatisfactory oral health status and overweight in children ( $\chi^2 = 4.627$ ;  $p = 0.031$ ). Findings evidenced the existence of a relationship between oral health status and nutritional status in persons with mental retardation.

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In 2001, the World Health Organization (WHO) published a report noting that 10% of the population from developing countries exhibited some type of disability (WHO, 2001). In Brazil, data on prevalence and assistance to this population reveal a prevalence of nearly 24.5 million people with mental and physical disabilities, which corresponds to 14.5% of the Brazilian population (Brazilian

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Institute of Geography and Statistics, 2004). Persons with mental retardation have poorer oral health than the general population (National Institute of Dental and Craniofacial Research, 2008). They require assistance from caregivers, engage in behavior that can adversely affect their oral health (such as lip biting and tongue thrusting), and present oral problems which affect systemic health (Davies, Bedi, & Scully, 2000; Pezzementi & Fisher, 2005). There is also evidence that, among those with an intellectual disability, many dental caries go untreated and extractions are more often used as a means of treatment than in the general population (Balogh, Ouellette-Kuntz, & Hunter, 2004; Stanfield, Scully, Davison, & Porter, 2003). Even though the widespread use of fluoride has dramatically reduced the prevalence of dental caries in many countries (Anderson, 1989; Rajic, Radionov, & Raji-Mestrovic, 2000; Souza, Bastos, & Peres, 2006), in Brazil the prevalence is still high (Antunes, Narvai, & Nugent, 2004; Antunes, Peres, Campos, & Waldman, 2006).

The occurrence of dental caries, one of many diseases which compromise oral health across the lifespan, requires interaction between host, microbiota, diet, and time (Sgan-Cohen, 2005), and involves a dynamic health-disease process (Sgan-Cohen & Mann, 2007). Nutrition issues play an especially important role in this situation, since inadequate dietary habits may contribute to a higher prevalence of caries and influence one's oral health status (Touger-Decker, Mobley, & American Dietetic Association [ADA], 2003, 2007; Touger-Decker, 2004). On the other hand, they may also affect growth and development, influencing the individual's nutritional status (WHO, 2003).

It is our opinion that this interaction should be investigated and understood, and due to lack of epidemiological data relating the prevalence of oral diseases to nutrition aspects in mentally challenged individuals, this study aimed to investigate the association between oral health status and nutritional status in semi-institutionalized persons with mental retardation from two Brazilian southern cities.

## 1. Method

### 1.1. Study design

This was a cross-sectional study. Collection of data was carried out over a 3-month period in 2005 at two Associations of People with Physical and Intellectual Disabilities in the cities of Florianópolis and São José, province of Santa Catarina, Brazil's South Region. The protocol was revised and approved by the Institutional Review Board (Ethics Committee of Federal University of Santa Catarina, protocol # 288/2004) and is in accordance with the [World Medical Association's Declaration of Helsinki \(2000\)](#). Variables studied were age, sex, oral health status, and nutritional status. Demographic and socioeconomic data were obtained from the institution's files. According to the purchase power and level of instruction of the family head, individuals were classified as pertaining to A (best condition), B, C, or D class (worse condition) ([Brazilian Association of Research Enterprises, 2003](#)).

### 1.2. Study population

Study population included all semi-institutionalized individuals (aged 5–53 years) attending Associations of People with Physical and Intellectual Disabilities in the cities of Florianópolis (303 individuals) and São José (124 individuals). Sampling procedure consisted of obtaining signed informed consent from parents or caretakers (95 individuals were not included). Persons with autism and physical disabilities (60 and 72 individuals, respectively) were also not included in sample. Finally, 200 people constituted the study's sample, 139 (69.5%) from Florianópolis and 61 (30.5%) from São José.

### 1.3. Oral health status evaluation

Clinical-odontological examination under natural light was conducted to detect the presence not only of dental caries (decay), but also of treated (filled) and extracted (missing) teeth as a consequence of caries (WHO, 1997). Codes, criteria, as well as biosafety standards recommended by WHO (1997) were applied, and data obtained were recorded on an odontogram. Oral health status was determined according to the number of decayed, missing and filled primary teeth (dmft index), and the number of decayed, missing and filled permanent teeth (DMFT index) (WHO, 1997).

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