



Hindawi Publishing Corporation

International Journal of Dentistry

International Journal of Dentistry
Volume 2009 (2009), Article ID 846081, 6 pages
doi:10.1155/2009/846081

Research Article

Poor Dental Status and Oral Hygiene Practices in Institutionalized Older People in Northeast Brazil

Luciene Ribeiro Gaião,¹ Maria Eneide Leitão de Almeida,² José Gomes de
Peter Leggat,^{3,4} and Jorg Heukelbach^{1,3}

¹Department of Community Health, School of Medicine, Federal University of Ceará, Fortaleza, Ceará 60430-140, Brazil

²Department of Clinical Dentistry, School of Pharmacy, Dentistry and Oral Health, Federal University of Ceará, Fortaleza, Ceará 60430-140, Brazil

³School of Public Health, Tropical Medicine and Rehabilitation Sciences, Curtin University, Perth, Western Australia

⁴School of Public Health, University of the Witwatersrand, Johannesburg, South Africa

Received 2 July 2008; Revised 14 December 2008; Accepted 9 March 2009

Academic Editor: W. Murray Thomson

Copyright © 2009 Luciene Ribeiro Gaião et al. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract

In this study we describe the dental status and oral hygiene practices and factors associated with poor dental status. A cross-sectional study was conducted in the capital of Ceará State (northeast Brazil). The number of decayed teeth among the residents of the nursing home ($n=167$; mean age = 76.6 years) was 28.4. Ninety-three (58.1%) were elderly. Only about half used a toothbrush. Only 8% had visited a dentist in the last year. Oral hygiene habits (such as the use of toothbrush, brushing after meals) did not show any significant association with general literacy level, and practice of oral hygiene were independent of literacy level. Institutionalized older people in northeast Brazil have poor dental status. Dental health education is needed focusing on the special needs of this population to improve their quality of life.

1. Introduction

Throughout the world, the proportion of older people in the geriatric population in addition to other general health issues there are tremendous implications. High level of tooth loss, dental caries, periodontal disease, xerostomia and poor general health are often interrelated.

There are several studies on the dental status of institutionalized older people. Studies have been reported from the United States [3], Australia [10], Croatia [11], the Fiji Islands [12], Hong Kong [13] and Singapore. The dental status of institutionalized older people is generally poor, with a high decayed

In Brazil, the demographic transition has been particularly accelerating the demand for long care facilities for older people. Despite this, data are scarce. Some reports from south Brazil suggest that the oral health status of older people is generally poor. Data on the dental status of institutionalized older people from different regions of Brazil are scarce and is virtually nonexistent. In particular, there is no data on the factors influencing the dental status of special populations and the state of oral hygiene practices. To assess the oral health status of institutionalized older people, a study was performed assessing oral status and hygiene practices of residents in a long-term care facility in northeast Brazil.

2. Methods

This cross-sectional study was performed in the institution “Lauro de Souza Lima” in the capital of Ceará State in northeast Brazil. Fortaleza has a population of 2.5 million. “Lauro de Melo” is the largest institution for older people in the State. All individuals residing in the institution and who matched the WHO definition of older people were included. Of the 220 residents, 167 (75.9%) met this inclusion criterion of ≥65 years of age.

The study consisted of a clinical oral examination; a structured interview on oral hygiene practices, such as frequency of oral hygiene, type of toothbrush used, use of toothpaste, and patients' records to obtain data on age, marital status, time of residence in the institution, (years of schooling), and retirement status. Professional carers were interviewed. Individuals who were not in the physical or mental condition to answer questions were excluded. The assessment of the DMFT using Brazilian standard procedures, which is a widely used index for dental caries assessment, was performed.

To reduce interobserver bias, all clinical examinations were done by two examiners. Detailed clinical data, including periodontal diseases and the use of antibiotics, were recorded and published elsewhere [19].

Data were double entered into a database using the Epi Info software (Centers for Disease Control and Prevention, Atlanta, USA) and checked for entry errors. Statistical analysis was done using the Wallis test, appropriate multiple linear regression, using the DMFT as the dependent variable. Variables with a significance level of $P < .25$ were included in the regression analysis. Regression analysis was done with STATA™ software (Version 8; StataCorp., College Station, TX, USA). The study was approved by the Ethical Review Board of the Federal University of Ceará. Written informed consent was obtained from study participants or the appropriate legal guardian.

3. Results

One hundred and sixty individuals were included in the study (95 76.6 years (standard deviation = 8.6 years), with a maximum ; institution was 8.2 years (range: 1 month - 50 years). Many were ; are detailed in Table 1.

Table 1: Demographic and socioeconomic characteristics of institutionalized older people in northeast Brazil.

Ninety-three (58.1%) were edentulous, and the mean number of teeth among participants was 29.7 (SD = 4.4; edentulous participants were all edentulous; among dentate individuals was 26.6 (SD = 5.3); 16 (23.9%) of these (68.1%) had a DMFT of 32, which meant that they did not have a single natural tooth.

Oral hygiene practices are detailed in Table 2. Almost 90% practiced oral hygiene, but these did not need the help of a professional carer. Only about 10% of participants had visited a dentist in the preceding three months, 16% perceived a need for treatment; however, clinical examination revealed the need for treatment in all 160 cases.

Table 2: Oral hygiene practices of institutionalized older people.

In the bivariate analysis, only sex, age, and general literacy level were significantly associated with DMFT (sex, $P = .03$; age, $P = .003$; literacy level, $P = .003$). Females presented with a higher DMFT. However, this variable was higher than that of males). In the multiple regression analysis, age ($\beta = 0.03$; $P = .003$), literacy level ($\beta = -0.79$ for each additional year of schooling; $P = .003$), and sex ($\beta = 2.5$; $P = .02$) were independently significantly associated with DMFT. The DMFT could be accounted for by these three independent variables (adjusted $R^2 = 0.18$).

Table 3: Bivariate analysis of variables associated with DMFT in institutionalized older people.

A lower DMFT was observed among individuals who performed oral hygiene practices. However, these and other variables regarding oral hygiene habits, such as frequency of oral hygiene, cleaning the tongue, and regular tooth brushing, were not significantly associated with the DMFT.

4. Discussion

Our study shows that the experience of dental caries (as represented by DMFT) is high among institutionalized older people.

people in northeast Brazil is extremely high. The data also found that this special population. Similar to most studies on institutionalized proportion of the population was edentulous.

The oral health status in the general older people population has the oral health of institutionalized older people and underprivileged [20 - 23]. The DMFT varies considerably not only between different countries and cultures, and it is consistently higher in institutionalized populations [4 - 15, 17, 24]. For example, in Hong Kong, the DMFT was 20.7 compared to 17.7 in noninstitutionalized older people [24]. A study also indicates that the oral health status of institutionalized as well as noninstitutionalized older people is poor [15, 17, 25]. In southern Brazil, the DMFT in institutionalized was 29.7, compared to 29.7 in the study population from the northeast (DMFT = 29.7). A representative study of oral health conditions in the Brazilian population revealed a mean DMFT of 29.7.

Oral hygiene practices in the study population were inadequate, and access to dental health care. In all residents, a need for treatment by a dentist was perceived, but only 44% had perceived that need. In Brazil, residents in these conditions, and the findings of the present study indicate that dental care needs more attention. Initially, these issues were discussed with the residents, and they regularly perform preventive and curative oral health care activities.

On the public health level, health education programs focusing on oral health care are mandatory. An integrated approach is needed, and oral health care should be provided. Additionally, it is necessary to implement curative and rehabilitative dental services to meet the need for future dental treatment [27].

Due to the cross-sectional design, causal and temporal relationships cannot be clearly established. In addition, a possible limitation of the study is that it was conducted in a nursing home, although this was the largest nursing home in the state.

In conclusion, this study shows that the dental status of institutionalized older people is poor. There is a lack of perceived need for dental services and of access to dental care. It is also needed focusing on the special needs of this neglected and their quality of life.

Acknowledgments

L.R.G. held a scholarship from the National Council for Scientific and Technological Development (Conselho Nacional de Desenvolvimento Científico e Tecnológico - CNPq), Brazil. The authors thank the staff of the nursing home "de Melo" for their kind cooperation. The assistance of the staff of the nursing home is appreciated. We wish to especially thank all the residents of the nursing home, who participated in this study.

References

1. P. E. Petersen and T. Yamamoto, "Improving the oral health of older people: The Oral Health Programme," *Community Dentistry and Oral Epidemiology*, vol. 32, no. 2, pp. 103-108, 2004.
2. S. R. da Silva and A. Valsecki, Jr., "Evaluation of oral health status of institutionalized older people," *Revista Panamericana de Salud Pública*, vol. 8, no. 4, pp. 26-30, 2002.

3. A. G. Ellis, "Geriatric dentistry in long-term-care facilities: a review," *Care in Dentistry*, vol. 19, no. 3, pp. 139 - 142, 1999.
4. C. Stubbs and P. J. Riordan, "Dental screening of older adults in Perth," *Australian Dental Journal*, vol. 47, no. 4, pp. 321 - 323, 2002.
5. R. Saub and R. W. Evans, "Dental needs of elderly hostel residents," *Australian Dental Journal*, vol. 46, no. 3, pp. 198 - 202, 2001.
6. C. C. Wyatt, "Elderly Canadians residing in long-term care facilities," *the Canadian Dental Association*, vol. 68, no. 6, pp. 359 - 361, 2002.
7. A. Rao, P. Sequeira, S. Peter, and A. Rajeev, "Oral health status of elderly in India," *Indian Journal of Dental Research*, vol. 10, no. 2, pp. 105 - 108, 1999.
8. E. Bitetti, A. Senna, and L. Strohmeier, "Oral health comparison of institutionalized elderly," *Minerva Stomatologica*, vol. 53, no. 1, pp. 1 - 5, 2003.
9. I. F. Angelillo, G. Sagliocco, S. J. H. Hendricks, and P. Villari, "Oral health of elderly in Italy," *Community Dentistry and Oral Epidemiology*, vol. 32, no. 2, pp. 105 - 110, 2004.
10. D. Triantos, "Intra-oral findings and general health conditions of institutionalized elderly in Greece," *Journal of Oral Pathology and Medicine*, vol. 35, no. 1, pp. 1 - 5, 2005.
11. V. Vucićević-Boras, A. Bosnjak, I. Alajbeg, A. Cekić-Arambašić, and M. Vukobratović, "Oral health status of elderly in retirement homes of two cities in south Croatia—a cross-sectional study," *Journal of Oral Rehabilitation*, vol. 29, no. 5, pp. 550 - 554, 2002.
12. T. King and D. Kapadia, "Oral health status and treatment needs of the elderly population in Fiji (1997)," *Pacific Health Dialog*, vol. 10, no. 1, pp. 1 - 5, 1997.
13. E. C. Lo, Y. Luo, and J. E. Dyson, "Oral health status of institutionalized elderly in Hong Kong," *Dental Health*, vol. 21, no. 3, pp. 224 - 226, 2004.
14. G. Soh, Y. H. Chong, and G. Ong, "Dental state and needs of elderly in an Asian community," *Social Science and Medicine*, vol. 34, no. 1, pp. 1 - 10, 1992.
15. R. M. Carneiro, D. D. da Silva, M. L. de Sousa, and R. S. Wasth, "Oral health status of elderly in the eastern zone of São Paulo, Brazil, 1999," *Cadernos de Saúde Pública*, vol. 15, no. 1, pp. 1 - 10, 1999 (Portuguese).
16. S. R. da Silva and A. Valsecki, Jr., "Evaluation of oral health status of elderly in Brazil," *Revista Panamericana de Salud Pública*, vol. 8, no. 4, pp. 26 - 30, 2002.
17. J. Jorge, Jr., O. P. de Almeida, L. Bozzo, C. Scully, and E. Granger, "Oral health status of institutionalized elderly in Brazil," *Community Dentistry and Oral Epidemiology*, vol. 19, no. 1, pp. 1 - 5, 1991.
18. Brasil—Ministério da Saúde, "Projeto SB Brasil 2003—Condições de Saúde Bucal, 2003," Resultados principais, Brasília, 2004.
19. L. R. Gaião, M. E. L. de Almeida, and J. Heukelbach, "Epidemiology and need of prostheses in the elderly living in a nursing home in Brazil," *Revista Brasileira de Epidemiologia*, vol. 8, no. 3, pp. 316 - 321, 2005.
20. A. H. Guay, "The oral health status of nursing home residents in Quebec," *Journal of Dental Education*, vol. 69, no. 9, pp. 1015 - 1017, 2005.
21. A. H. Guay, "Improving access to dental care for vulnerable populations," *Journal of Dental Education*, vol. 69, no. 9, pp. 1018 - 1020, 2005.

- 9, pp. 1045 - 1048, 2005.
22. A. H. Guay, "Access to dental care: solving the problem for *American Dental Association*, vol. 135, no. 11, pp. 1599 - 1602, 2005.
 23. A. G. Ellis, "Geriatric dentistry in long-term-care facilities: *Care in Dentistry*, vol. 19, no. 3, pp. 139 - 142, 1999.
 24. A. S. McMillan, M. C. M. Wong, E. C. M. Lo, and P. F. Allen, "Dental health in institutionalized and non-institutionalized elderly in Hong Kong," *Community Dentistry and Oral Epidemiology*, vol. 31, pp. 46 - 54, 2003.
 25. A. C. Pereira, R. A. Castellanos, S. R. da Silva, M. G. Watanabe, "Dental health and periodontal status in Brazilian elderly," *Brazilian Dental Journal*, vol. 14, pp. 100 - 104, 1999.
 26. D. W. Matear, "Demonstrating the need for oral health education in long-term care facilities," *Journal of Oral Rehabilitation*, vol. 26, pp. 66 - 71, 1999.
 27. Y. Shimazaki, I. Soh, T. Koga, H. Miyazaki, and T. Takehara, "Dental health in institutionalized elderly people in Japan," *Journal of Oral Rehabilitation*, vol. 31, pp. 100 - 104, 2004.