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Dentists' perceptions and barriers to provide oral care for dependent elderly at home, long-term care institutions or hospitals

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Aim: The aim of this study was to assess the perceptions and barriers to providing oral health care for the dependent elderly in unconventional settings as reported by dentists in the State of São Paulo, Brazil. The Brazilian elderly population is rapidly growing, and a larger elderly population implies an increasing number of dependent elderly patients. Therefore, investigating the perceptions and barriers reported by dentists for caring for these patients becomes important. **Methods:** An online survey was sent by e-mail to dentists of a metropolitan area in the State of São Paulo, Brazil. **Results:** The response rate was 3.65% (n = 125). Only 14.4% of respondents offered home care to the elderly. Lack of experience or training (60.7%) and the small number of home visits (42.9%), were the main reported barriers to providing care for the dependent elderly. Most of the respondents (82.4%) agreed that the age of the patient did not influence their decision to provide care, and 96.8% agreed that delivering care to the elderly could be a rewarding experience. **Conclusion:** Few respondents offered care to the elderly and some of the most relevant factors considered in the decision to offer care were, experience and training, personal satisfaction and having gerodontology as a stand-alone course during dental school.

Keywords: Geriatric dentistry. Aged. Oral health. Health services accessibility.

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Introduction

Life expectancy is increasing worldwide and it is estimated that the Brazilian population will increase by a rate of 0.3% per year over the next four decades, while the Brazilian elderly population is estimated to grow tenfold more, at a rate of 3.2% per year. From an economic point of view, the elderly population will increase their participation in the so-called economically active population from 11% in 2005 to 49% in 2050, while the school-age population will decrease from 50% to 29%[1]. The metropolitan region of Vale do Paraíba e Litoral Norte (MRVP) is one of the five metropolitan regions of the state of São Paulo. MRVP is composed of 39 municipalities subdivided into 5 sub-regions. The overall population of the MRVP is 2,430,392 (1.2% of the total Brazilian population), with 13.5% being considered elderly (60+ year-old). By 2025, the estimated share of the elderly population will be 17.5% for an overall population of 2,573,268[1,2].

This elderly group makes up 10% of the functionally dependent population and are usually institutionalized or at-home elders presenting with many co-morbidities, polypharmacy and poor oral health[3-18]. The term oral health defined by WHO as "a state of being free from chronic mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss, and other diseases and disorders that limit an individual's capacity in biting, chewing, smiling, speaking, and psychosocial wellbeing"[19]. As so, it should be emphasized that elderly patients may have physical disabilities that result in the lack of manual dexterity or impaired range of motion[20], which may hinder the oral hygiene of such patients. Considering dependent elderly, these problems are more critical, since the oral health related activities are often outsourced for a nurse or a family member. Also, access to appropriate oral health care is lacking for this vulnerable group, especially in developing countries[21].

Dentists report many barriers and difficulties to the provision of appropriate oral health care for the dependent elderly. However, this has not been adequately investigated in Brazil and very little is known about the number and characteristics of Brazilian dentists that offer this type of service[7,16,18,21-24]. Among the difficulties, a previous study reported that dentists face different types of difficulties, which varies from the unwillingness toward treatment, problems when communicating to the patients due to communication and cognitive problems as well as in obtaining radiographs and in other diagnostic tests, and physical problems where sometimes these patients are unable to open their mouth or keep it open for long time[25]. The most commonly reported barriers to providing care for the dependent elderly refer to the lack of adequate equipment, low demand, inadequate reimbursement, the need to leave the office and also the inexperience and lack of training for providing this type of care[7,16,18].

There is a crucial need to provide appropriate oral health care to dependent elderly patients and a lack of publications regarding dentists' perceptions about this type of care in Brazil. Thus, the purpose of the present study was to evaluate the barriers and perceptions of professionals regarding the provision of oral health care to the dependent elderly in unconventional settings such as patients' homes, long-term care institutions or geriatric hospitals.

Materials and methods

Subjects

This study was approved by the Ethics and Research Committee of The University of Taubate (CAAE: 51491615.0.0000.5501) and the research has been conducted in full accordance with the World Medical Association Declaration of Helsinki.

An online survey was sent to the Regional Dental Council of the State of São Paulo, who approved and subsequently forwarded the questionnaire to 4,626 dentists of the MRVP by email. The inclusion criteria adopted in this study was to be registered as a professional in the Regional Dental Council of the State of São Paulo. There were no exclusion criteria.

Survey

The survey was comprised of questions regarding personal and professional information and only the participants who gave written consent were included in the study.

When asked about their perceptions and barriers to providing care for the elderly and reasons for not offering care, dentists could respond using a five or seven-point Likert scale, as reported by Chowdhry et al.[7]. The questions from the Chowdhry et al.[7] questionnaires were translated to Portuguese and then back translated to English to confirm the accuracy of the translation. It was then tested by 30 volunteer dentists prior to the survey to check for incongruences and after statistical checking it was regarded as having appropriate language translation.

The respondents of such questionnaire were subdivided into different groups according to their answers; Group A – respondents who offered care to the elderly in long-term care institutions, at-home or hospitals; Group B – respondents who discontinued care for the elderly in long-term care institutions, at-home and hospitals; Group C – respondents who did not offer care to the elderly in long term-care institutions, at home or hospitals, but had the intention to do so; and Group D – respondents who have never offered oral health care for the dependent elderly in long-term care institutions, at-home or hospitals and did not intend to do so.

Data analysis

The seven-item Likert scale questions were scored as follows: totally agree = 1; agree = 2; partially agree = 3; neutral = 4; partially disagree = 5; disagree = 6; totally disagree = 7. The five-item Likert scale questions were scored as follows: very important = 1; important = 2; neutral = 3; not important = 4; unimportant = 5. The answers received were initially tabulated in a Microsoft Excel 2010 spreadsheet. SPSS V17 and Minitab 16 were used for statistical analysis. One-way ANOVA was used to compare the results and all tests were performed considering an alpha level of 0.05.

Results

Of the 4,626 invited dentists, 169 responded (response rate of 3.65%). Forty-four respondents were excluded (one refused to participate, three were not working in the MRVP

anymore, 10 were pediatric dentists, and 30 were orthodontists), resulting in a final number of 125. These remaining respondents were subdivided into: Group A (n= 18; 14.4%) - respondents who offered care to the elderly in long-term care institutions, at-home or hospitals; Group B (n= 21; 16.8%) - respondents who discontinued care for the elderly in long-term care institutions, at-home and hospitals; Group C (n= 30; 34.88% 24%) - respondents who did not offer care to the elderly in long term-care institutions, at home or hospitals, but had the intention to do so; Group D (n= 56; 65.12% 44.8%) - respondents who have never offered oral health care for the dependent elderly in long-term care institutions, at-home or hospitals and did not intend to do so (Figure 1).

In regard to the specialties, a statistical difference between groups was observed only in the distribution of the "Patients with special needs" specialty, with a higher prevalence of Group A respondents (27.8%) when compared to groups B (4.8%; p= 0.047) , C (0.0%; p= 0.002) and D (0.0%; p< 0.001).

In the comparison of dentists' perceptions regarding performing oral health care for the dependent elderly, respondents from all groups had different opinions regarding the question "patient's age did not influence their decision to provide oral health care." (Table 1).

The comparison of responses from dentists in each group, regarding factors that influence their decision to provide oral health care for the dependent elderly, is presented in

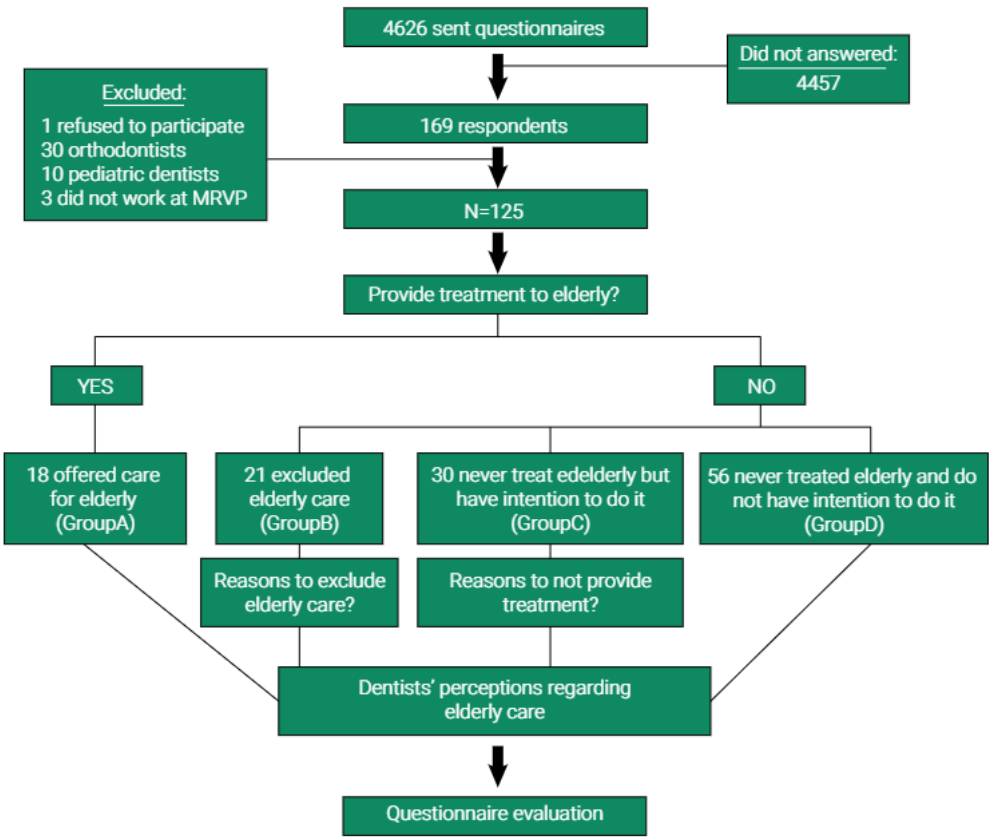

Figure 1. Questionnaire flowchart.

Table 1. Comparison among groups regarding dentists' reported perceptions of providing oral health care for the dependent elderly. The asterisk (*) indicates statistical significant differences (One-way ANOVA).

	Group A (n=18)	Group B (n=21)	Group C (n=30)	Group D (n=56)	*P*-value
Treating elderly patients is a pleasant experience	1.61 (0.28)	1.48 (0.22)	1.30 (0.17)	1.70 (0,21)	0.067
A patient's age does not influence my decision to provide services	1.39 (0.32)	1.90 (0.52)	2.63 (0.69)	2.41 (0,44)	0.037*
Elderly patients rarely follow recommended treatment	4.50 (0.68)	3.86 (0.73)	4.67 (0.53)	4.11 (0,42)	0.236
It is hard to improve the oral health of elderly patients	4.00 (0.94)	4.57 (0.83)	4.47 (0.70)	4.07 (0,45)	0.602
Elderly patients present difficulties because of medical problems or dementia	4.06 (0.85)	3.81 (0.84)	3.73 (0.65)	3.39 (0,43)	0.502

Table 2. Comparison of dentists' responses among groups regarding factors that influence their decision to provide oral health care for the dependent elderly. The asterisk (*) indicates statistical significant differences (One-way ANOVA).

	Group A (n=18)	Group B (n=21)	Group C (n=30)	Group D (n=56)	*P*-value
Amount of private practice time	2.00 (0.59)	2.19 (0.50)	1.53 (0.24)	1.86 (0.24)	0.112
Amount of personal time	1.78 (0.41)	1.86 (0.56)	1.67 (0.32)	1.82 (0.26)	0.901
Distance to facility	2.00 (0.59)	2.43 (0.64)	1.87 (0.38)	1.80 (0.25)	0.187
Remuneration	2.50 (0.53)	2.24 (0.45)	2.17 (0.38)	2.00 (0.26)	0.349
Availability of dental operatory and equipment at facility	1.67 (0.48)	1.76 (0.38)	1.37 (0.22)	1.45 (0.21)	0.264
Personal satisfaction in working with elderly people	1.39 (0.45)	1.19 (0.22)	1.17 (0.19)	1.32 (0.15)	0.542
Experience and training in treating elderly people	1.39 (0.36)	1.52 (0.35)	1.13 (0.16)	1.21 (0.15)	0.113

Table 2. The responses were based on a five-item Likert scale. The respondents were very homogeneous and the groups tended to consider all seven factors presented as important in the decision to provide oral health care for the dependent elderly, with no differences between them.

Table 3 presents the comparison of dentists' responses among groups, regarding reasons for providing oral health care for dependent elderly, with answers based on a seven-item Likert scale. The reasoning "Part of professional responsibilities" was more relevant for Groups A and C, with significant statistical differences between Groups A and D (p=0.006) and between Groups C and D (p=0.002). The reasoning "Broadens the scope of my practice" was more relevant for Group C with significant statistical differences between Group B (p=0.010) and Group D (p=0.008).

The groups were homogeneous in agreeing that having the help of dental hygienists and dental assistants, continuing education courses about gerodontology and a gerodontology stand-alone course during dental school had a positive influence on their decision to provide oral health care for the dependent elderly, without significant

Table 3. Comparison of dentists' responses among groups regarding reasons for providing oral health care for the dependent elderly. The asterisk (*) indicates statistical significant differences (One-way ANOVA).

Reason	Group A (n=18)	Group B (n=21)	Group C (n=30)	Group D (n=56)	*P*-value
Opportunity to increase my practice	4.56 (0.80)	3.90 (0.78)	3.27 (0.59)	3.70 (0.38)	0.063
Social contacts with elderly patients are rewarding	1.94 (0.43)	2.00 (0.41)	1.83 (0.34)	2.25 (0.27)	0.268
I want to perform a public service	3.78 (0.96)	4.67 (0.77)	3.83 (0.67)	4.27 (0.43)	0.299
Part of professional responsibilities	1.67 (0.32)	3.00 (0.80)	1.57 (0.29)	2.96 (0.35)	<0.0001*
Part of semi-retirement practice	5.06 (0.94)	5.52 (0.83)	5.03 (0.65)	4.88 (0.43)	0.576
Broadens the scope of my practice	3.56 (0.83)	3.86 (0.83)	2.53 (0.45)	3.82 (0.39)	0.003*
I was asked to work in a long-term care facility	3.22 (1.06)	3.29 (0.78)	3.60 (0.65)	2.88 (0.37)	0.312
A past patient or family member was in a long-term care facility	2.33 (0.82)	2.33 (0.59)	2.20 (0.55)	2.14 (0.26)	0.925

Table 4. Reasons Group B discontinued the delivery of oral health care for the dependent elderly from their practices and reasons Group D never offered oral health care to the dependent elderly (more than one option could have been selected).

Reasons[a]	nº (%)
For having discontinued dependent elderly care from their practices (Group B)	**21 (100)**
Lack of demand for services	9 (42.9)
Loss of leisure time	6 (28.6)
This type of care do not reach my practice standard of care	5 (23.8)
Financially unrewarding	1 (4.8)
Increasing commitments to private office practice	1 (4.8)
difficulties in management of patients	0 (0)
Never having offered oral health care to dependent elderly (Group D)	**56 (100)**
Inadequate training and experience	34 (60.7)
I have not been asked by residents, administrators or family	32 (57.1)
I do not have adequate equipment	22 (39.3)
Too busy in private practice	17 (30.4)
Lack of appropriate treatment facilities	15 (26.8)
Financially costly and unrewarding	6 (10.7)
Bureaucratic barriers would hinder proper treatment of patients	4 (7.1)
Administrative difficulties in management of patients	2 (3.6)

differences among groups. Increased bureaucracy, in terms of informed consent or other documents, negatively influenced their decision to provide oral health care for the dependent elderly, and it was more relevant for Group C compared to Group B (One-way ANOVAp= 0.027).

The main reasons cited by dentists from groups B and D for discontinuing the delivery of oral health care for the dependent elderly from their practices and for never having offered oral health care for the dependent elderly, respectively, are shown in Table 4.

Discussion

The purpose of the present study was to evaluate the barriers and perceptions of professionals regarding the provision of oral health care to the dependent elderly in unconventional settings such as patients' homes, long-term care institutions or geriatric hospitals. It was found that experience and training, personal satisfaction and having gerodontology as a stand-alone course during dental school were among the most relevant factors taken on count by the dentists.

The proportion of respondents who offered care to the dependent elderly in long-term care institutions in the present study was similar to those shown by Chowdhry et al.[7], in which 14.7% of respondents offered care, 20.6% had stopped treatment and 71.2% had never treated such patients. Our results are also similar to those presented by Moreira et al.[21], in which 73.4% of respondents did not treat the elderly, confirming that relatively few dentists decide to treat elderly patients. In the study by Watkins et al.[22], when asked about providing care for dependent patients at home, 85% of dentists stated that they did not perform this service and 85% of the respondents evaluated by Stevens et al.[26] stated that home care patients should be sent to health centers. In the results from Bots-VantSpijker et al.[18], 42% of the respondents were not willing to provide oral health care for dependent elderly patients. In the study performed by Sweeney et al.[27], 67% reported providing some home care, most of whom were community dentistry officers and those working in both urban and rural areas. This contrasts with the findings of this study in which only 14.4% of respondents provided care for the elderly. Hally et al.[28] reported that among dentists who provided care for the elderly, 78% reported being willing to travel 10+ miles (16+ km) to see a patient.

In the present study, groups C and D, which did not have offered treatment for dependent elderly, presented a different opinion to the groups A and B when asked if the patient's age influence their decision to provide oral health care to the dependent elderly. Although no statistical difference was observed, the respondents tended to be more neutral for the item "Elderly patients rarely follow recommended treatment", wich was reported by previous findings[7]. Chowdhry et al.[7] reported that the respondents considered the personal time available, the remuneration and distance of the place of care as the more important factors and that personal satisfaction was less important. Bots-VantSpijker et al.[18], and Watkins et al.[22] also cited experience and training for this type of care as a relevant factor influencing respondents intent on providing oral health care to the dependent elderly.

In the study by Chowdhry et al.[7], respondents agreed that having more appointments (thus avoiding empty-chair time), the opportunity to diversify the type of care and the request for this type of care were the most relevant reasons for providing oral health care to the dependent elderly. In our study, the most cited reasons for providing this type of oral health care were, "Part of professional responsibilities", "A past patient or family member was in a long-term care facility" and "Treating elderly patients is a pleasant experience ".

Respondents of our study reported that having gerodontology as a stand-alone course during dental school positively influenced their decision to provide oral health care for the dependent elderly. These results are in agreement with those of Watkins et al.[22],

in which attending courses about the provision of services to the dependent elderly, having gerodontology training in dental school and having clinical training in gerodontology were all strongly associated with the decision to provide oral health care for the dependent elderly.

The most frequent barriers reported by dentists who do not deliver oral health care to the dependent elderly were, "[Lack of] Experience and training in treating elderly people", "I have not been asked by residents, administrators or family", "[Lack of] Availability of a dental operatory and equipment at facility", and "Lack of demand for services". Chowdhry et al.[7] reported "Treating elderly patients is financially unrewarding " as the main barrier.

The present paper presents some limitations, and the reduced sample is the most significant. The final number of respondents (n = 125) presented with a sampling error of 9%. The response rate was 3.65%, which is similar to the response rate presented by Nitschke et al.[29]. The online questionnaires were submitted in accordance with resolution 03/2014 of the Brazilian Federal Council of Dentistry, which regulates the use of Brazilian dentists' personal data for research purposes. It determines that the council itself submits the questionnaires to the professionals of the requested region. This way, the researcher does not have access to subjects' contact information, and thus could not perform follow up calls. Moreira et al.[21] emphasized that the high rate of responses achieved by them was due to follow up calls by phone and researcher visits to the dentists' workplaces.

However, despite the limitations, this study is the first to our knowledge, to assess the perceptions and barriers to delivering oral health care for dependent elderly patients in unconventional settings as reported by dentists in the State of São Paulo, Brazil. As such, it may be a starting point for future research, and for guiding dental education and public health initiatives aimed at improving the oral health care workforce, and consequently the oral health of this population.

In sum, only a small proportion of the respondents provided oral health care to the dependent elderly at home, long-term care institutions or hospitals. Not having experience and/or training was the main reported barrier to providing such care and low demand was the main reason to discontinue the provision of oral health care for the dependent elderly. Experience and training, personal satisfaction, infrastructure and availability of equipment and materials at the location of care were important factors considered by all groups in the decision to provide care for the dependent elderly. All groups agreed that having gerodontology as a stand–alone course during dental school had a positive influence on their decision to provide oral health care for the dependent elderly.

In conclusion, few respondents offered care to the elderly and some of the most relevant factors considered in the decision to offer care were, experience and training, personal satisfaction and having gerodontology as a stand-alone course during dental school.

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