Prevalence of oral impacts on daily performances (OIDP) of elderly people in Curitiba – PR

Prevalência de impactos bucais na performance diária (Oral impacts on daily performance – OIDP) em pacientes idosos em Curitiba – PR

Lígia Moura BURCI[1], Yasmin Dallarmi MIGUEL[1], Obdúlio Gomes MIGUEL[2], Astrid Wiens SOUZA[2], Josiane de Fátima Gaspari DIAS[2], MarilisDallarmi MIGUEL[2]

1 – Federal University of Paraná – Curitiba – PR – Brazil.

2 – Federal University of Paraná – Health Sciences Sector – Post-Graduation Program in Pharmaceutical Sciences – Curitiba – PR – Brazil.

ABSTRACT

Objective: This study aimed to investigate the prevalence of oral health impact on the daily performance of Brazilian elderly, living in the city ofCuritiba – PR. **Material and Methods:** The oral health-related quality of life (OHRQoL) of 129 elderly people aged from 60 to 80 years was assessed. Also, the influence of gender, income, attendance to the dentist, self-assessment of health, and social-demographic features were verified. **Results:** Oral health influenced in 83.72%the daily routine of the participants. The lack of compliance to dental treatment and the difficulty in oral health self-perception as integrate part of general health were associated to the greatest interference. **Conclusion:** Thus, we recommended that the self-perception of the individuals is considered simultaneously to the clinical condition to tailor oral health actions targeted to priority groups.

KEYWORDS

Oral health; Elderly; Quality of life.

RESUMO

Objetivo: Com o objetivo de investigar a prevalência do impacto da saúde bucal no desempenho diário em idosos brasileiros, residentes na cidade de Curitiba – PR. **Materiais e Métodos:** Foi realizado um estudo sobre a qualidade de vida relacionada à saúde bucal em idosos de 60 a 80 anos de idade (n = 129). Verificou-se também a influência do sexo, renda, visita ao dentista, auto-avaliação da saúde e características sócio-demográficas nesse processo. **Resultados:** Obteve-se como resposta uma proporção de 83,72% de interferência da saúde bucal no cotidiano dos participantes. A falta de adesão ao tratamento odontológico e o não aceitar a saúde bucal como um componente da saúde do corpo como um todo compuseram fatores associados à maior interferência. **Conclusão:** É recomendável que a percepção dos indivíduos seja considerada simultaneamente à condição clínica na definição de ações dos serviços e de grupos prioritários ao atendimento em saúde bucal.

PALAVRAS-CHAVE

Saúde oral; Idosos; Qualidade de vida.

INTRODUCTION

The interesting in aging and its consequences is growing together with the process of world demographic transition.The increasing in life expectancy and the decreasing in mortality rates is a consequence of the new technologies in health, due to the improvement in the sanitary, environmental, nutritional, and personal hygiene conditions, but not even reproducible in developing societies [1].

Researches in the elderly population show the importance of understanding the aging process on a biopsychosocial point of view [1]. This paradigm shifting increases the interest in studying the quality of life (QoL) and QoL influence on the health-disease process, to establish new concepts and develop instruments capable of measuring QoL.

The study on the effects of adverse functional, social, and psychological conditionson the oral health is increasing because such effects take into consideration the experiences and behaviors of the individuals regarding to the disease, based on subjective social or oral indicators for oral health [2]. Among these adverse conditions, the decreasing in the masticatory capacity, pain symptoms, and psychological effects are highlighted.The oral health of this population is neglected because the public dental services do not provide priority actions targeted to the elderly who exhibits high levels of edentulism and high prevalence of caries lesion and periodontal disease.

The report of the World Health Organization [3] recognized that the oral diseases cause pain, suffering, psychological constraints, social privations, and consequently impairments at individual and collective level. Reliable and validated instruments to measure subjectively the oral disease are routinely used aiming to collect oral health data from the individual point of view,at the individual and populational level[4]. TheOral Impacts on Daily Performances – OIDP [5]is a social-dental indicator conceptually based on theInternational Classification of Impairments, Disabilities and Handicaps[6],which was adapted by Locker to be used in Dentistry [7]. By evaluatingthe frequency and severity of the impact of the oral disease on the daily performance of the individuals, the OIDP provides a score of the individual impact[8].

In Brazil, the literature lacks studies on the use of social-dental indicators, despite of the relevance of the psychological and social aspects to show a different relationship between oral health and QoL[9]. Thus, studies on this new oral health assessment will provide the knowledge on the prevalence of the oral health impact on the daily performance of the Brazilian population.Therefore, this study aimed to investigate the prevalence of oral health impact on the daily performance of Brazilian elderly who lived in the city of Curitiba, Parana, Brazil.

METHODS

This study was submitted and approved by the Institutional Review Board regarding ethical aspects (protocol no. # 954.338). The sample comprised 129 elderly people of the city of Curitiba, aged between 60 and 80 years, attending the health units, at the waiting room for dental or medical care.We applied OIDP questionnaire [5] with social-demographic questions from February to June, de 2015. The OIDP questionnaire was applied to the individuals who agreed in responding the questionnaire. Before the questionnaire application, the individuals were instructed about the research objective and signed a free and clarified consent form. Only one examiner was responsible for collecting the data.

The individuals were asked whether, in the last six months, any oral health problem caused problems or impairments in:eating or tasting food; speaking clearly; performing toothbrushing; sleeping and relaxing; smiling and showing the teeth without embarrassment; keeping a balanced emotional state without irritation; performing the main work or social role;enjoying staying with people. The possible answers were yes or no.

In this study, we used the OIDP version composed of eight performances, who are daily actions that the individual declares he/she can perform, divided into physical and psychological performances.The affected performances were classified according to the frequency of impact

by means of occurrence pattern:1 – less than once per month, or interval of 5 days, in total;2 – once or twice per month, or interval of 15 days, in total; 3 – once or twice per month, or interval of 30 days, in total; 4 – three or four times per week, or interval of up to three months, in total; 5 – almost all or all day, or interval of more than three months, in total. The affected performances were also classified according to the degree of severity scored by the individual: 0 – no severity; 1 – very little serious; 2 – little serious; 3 –moderately serious; 4 – very serious; 5 – extremely serious [10].

The data were analyzed in SPSS software for Windows, version 19.0 (SPSS Inc., Chicago, USA). The descriptive statistical analysis comprises the general characteristics of the studied population by absolute and relative frequencies. The social-demographic variables were gender, age, educational level, personal income level, prosthesis wearer, presence of chronic disease, and regular attendance to the dentist. Pearson's Chi square test was applied with level of significance of α = 0.05.

RESULTS

The sample comprised 129 elderly people of the city of Curitiba, aged between 60 and 80 years, attending the health units, at the waiting room for dental or medical care. Mostly, the studied sample was composed of females(72.1% n = 93).All interviewed elderly people had normal/acceptable cognitive level, classified asself-employed for carrying out their tasks. The sample characterization revealed a population with low financial resources, low educational level, and unfavorable clinical condition.

Most of the elderly (86%) were at mean age range of 60 to 70 years and were married (53.5%). Concerning to the educational level, 78 participants(60.5%) did not complete the secondary school. Still, 62.8% had an income lower thanR$ 10,000.00 per year, approximately one Brazilian minimum wage per month. The individuals showed high index of tooth loss, with more than five teeth(60.5%) and less than five teeth (39.5%); and high prevalence of chronic diseases as hypertension or diabetes (58.1%) (Table I).

Of the 129 individuals, 108 (83.72%) reported at least one daily performance or activity affected by dental problems in the last six months. The most affected daily performance wasto perform the main work/ social role (72.09%), followed by oral hygiene (69.76%), and eat and taste food(66.66%). Most of the oral impacts had high frequency (mode = 5) and high severity (mode = 5) (Table II). The performance that showed the least impact(30.23%) was the psychological performance of staying in a balanced emotional state without irritation.

The OIDP scores exhibited significantly association with the number of teeth lost, age, gender, income, and attendance to the dentist. The table 3 displays the percentage of individuals that scored at least one regarding the physical, social, and psychological OIDP domains of the total of interviewed participants, divided by the number of individuals who lost less than or more than five teeth.

For the total sample, the prevalence of oral health impacts did not vary regarding the gender, income, and attendance to the dentist.Of the number of individuals who lost less than five teeth, the individuals who periodically attended the dentist showed a small prevalence of oral impacts(26.92%). Of the number of individuals who lost more than five teeth, the prevalence of impacts was inversely proportional, that is, the individuals who regularly attended the dentist showed a higher impact level(57.69%).

DISCUSSION

As part of the partial goals of the health programs, the first Brazilian Conference on Oral Health (1986) states that oral health is an inseparable and integral part of the individual's

Table I – Distribution of the frequency of independent variables and categories (n = 129)

		N	%
Gender	Male	36	27.9
	Female	93	72.1
	Total	129	100
Age	60 to 70	111	86
	70 to 80	15	11.6
	More than 80	3	2.3
	Total	129	100
Marital Status	Married	69	53.5
	Divorced	15	11.6
	Single	18	14
	Widower	27	20.9
	Total	129	100
Educational Level	> SS	51	39.5
	< SS	78	60.5
	Total	129	100
Income	>12,000 reais/year	48	37.2
	<12,000 reais/ year	81	62.8
	Total	129	100
Autonomy	Independent	129	100
	Dependent	0	0
	Total	129	100
Tooth loss	Lost < 5 teeth	51	39.5
	Lost > 5 teeth	78	60.5
	Total	129	100
Chronic disease	No	54	41.9
	Yes	75	58.1
	Total	129	100

Table II – Prevalence, frequency, and severity of the oral impacts on daily performances

Daily performances	Affected elderly		Frequency		Severity	
	N	%	Median	Mode	Median	Mode
Physical performance						
1. Eat and taste food	86	66.66	5	5	3	5
2. Speak clearly	57	44.18	5	5	4	5
3. Perform toothbrushing	90	69.76	5	5	3	5
Psychological behavior						
4. Sleep and relax	79	61.24	5	5	4	5
5. Smile, laugh, and show teeth without embarrassment	66	51.16	4	5	4	5
6. Keep a balanced emotional state without irritation	39	30.23	3	5	4	5
Social performance						
7. Perform the main work/social role	93	72.09	5	5	4	5
8. Enjoy contacting people	69	53.48	5	5	4	5

Table III – Percentage of participants (n) reporting any oral health impact on daily performance (Oral Impact on Daily Performance – OIDP) divided by the social-demographic characteristics of the total number of participants; and the number of individuals who lost more or less than five teeth

	Total	< 5 teeth lost	> 5 teeth lost
	N = 129	N = 51	N = 78
	% (n) [p value]	% (n) [p value]	% (n) [p value]
Age			
60 – 70 (111)	83.78 (93)	37.83 (42)	45.94 (51)
70 – 80 (15)	80 (12)	0 (0)	80 (12)
> 80 (3)	100 (3) [0.000]	0 (0) [0.000]	100 (3) [0.000]
Gender			
Male (36)	83.33 (30)	25 (9)	58.33 (21)
Female (93)	83.87 (78) [0.515]	35.48 (33) [0.000]	48.38 (45) [0.000]
Income			
> 10,000 (48)	81.25 (39)	37.5 (18)	43.75 (21)
< 10,000 (81)	85.18 (69) [0.302]	29.62 (24) [0.002]	55.55 (45) [0.000]
Regular attendance to the dentist			
Yes (78)	84.61 (66)	26.92 (21)	57.69 (45)
No (51)	82.35 (42) [0.119]	41.17 (21) [0.000]	41.17 (21) [0.000]

general health, directly related to the conditions of feeding, home, work, income, environment, transport, recreation, freedom, access to and possession of land, and access to health services and information[11].

The characterization of the studied sample revealed a population with little financial, educational, and health resources, which probably impact on QoL(Table 1). Most of the participants studied up to the fourth grade of the elementary school, with low income, and little professional expertise.This impacts on the access to information with little self-protection and self-perception of the need for searching preventive services.

The Oral Impact on Daily Performance (OIDP) aims to verify the association between oral problems and difficulty in performing some daily activities and/or behaviors. It is worth emphasizing that oral health is not recognized as integral part of the individual's oral health. Furthermore, the elderly, the family, the caregivers, and other health professionals lack to realize the need of dental treatment. Some values and beliefs that the advanced aging causes pain and inability to recognize tastes and textures may result in loss of the required threshold of normal oral health [12].

Specifically, for the dental treatment of the Brazilian elderly, until now, the literature lacks large epidemiological studies on oral health conditions at the oldage, which impair the establishment of priorities and the development of coherent actions of care, mainly at collective level[13].

The females were more prevalent, but the performance complaints were similar to those of the males; however, the literature states that females are more vulnerable than males at the same ageand alterations in the health state, such as falls, multiple diseases, obesity, poverty, different addictions, and use of multiple drugs[14]. Many of the dependences presented by female elderly are caused by the

decrease in visual/auditory acuity, general decrease of the functional balance, resulting in falls and consequently lesions. Moreover, the polypharmacy experienced by most of the interviewed elderly aims to treat chronic diseases or diseases caused by the metabolic syndrome, as hypertension and diabetes [15].

It is important to highlight that the absolute number of female elderly is higher than that of males, in Brazil. This situation is caused by the different mortality between genders that have occurred for a long time in the Brazilian population [16]. Since 1950, the females have had more life expectancy.In 1980, the life expectancy for males were 59 years, while for females were 65 years, increasing in 1991 for 7 years of difference.

The identification of the factors associated with the greater oral health impact on the daily routine of the individuals wasthe analysis axis of this present study. The high prevalence(83.72%) of oral health impacts on the daily performance of the studied population agrees with the prevalence found by other authors using OIDP index: 73.6% in individuals at the age range of35-44 years [5]; 51% in individuals with mean age of26.4 years [17]; 69.1% in individuals at the age range of19-74 years [18], and 52.8% in the elderly at the age range of 60-74 years [19]. Concerning to the daily frequency of impact, the most common was "all or almost all days" for all performances. The tooth loss is associatedwith greater interference in most of the studies [20-22]. The edentulism affects not only functional aspects (masticatory capacity), but alsothe consumption of food and essential nutrients, and the phonation.The phonation impairment affects the aspects related to the psychosocial behavior of the individual, characterizing by social exclusion, among others, because the difficulty in smiling and speaking affects the self-image within the beauty standards for the age. Cultural questions should also be considered in the analysis[22], as well as differences in the food valorization, esthetic and beauty standards, adversities imposed by the environment, and effort to satisfy the aspirations

and needs. These are important factors to explain the differences found among similar studies.

Additionally, one of the greatest contribution of Dentistry to the society is to assure QoL through prevention and treatment of oral diseases. Such diseases directly affect the masticatory capacity, speech, and mainly cause frequently associated pain. The oral diseases may also affect the individual's self-esteem and general well-being [23]. The literature reaches consensus on the strong correlation between the oral health condition and QoL of the individuals[24,25]. The oral condition and the self-perception directly influences in this relationship. It is considered that a worst oral health condition and greater self-perception results in greater report and severity of the oral health impact on the daily routine of the individuals [25]. The self-perception plays a fundamental role in the QoL definition and is inserted in the concept proposed by the WHO[26]. However, it is worth noting that the health self-perception is a result of the understanding of the individual based on the daily experiences at the different life periods.Thus, the health self-perception is directly influenced by the social-economic level of each individual.

The literature reports that the performance of eating and tasting food is the most prevalent affected; in this study, the most affected domain was the performance of the main work/social role(72.09%), followed by oral hygiene, eat and taste food, and sleep/relax(69.76%; 66.66%; 61.24% respectively). The association between health and work is well documented in developed countries, especially between adults and young people[27]. With aging of the working population and the specific health requirements of the elderly population [28], some authors point out the importance of investigate the health inequalities in the elderly through work qualification. In the study conducted by Marmot and Shipley [29], the authors identified an association between smaller work qualificationand higher morbidity and

mortality. This association would be explained by the direct relationship between work qualification and educational level, income, self-esteem, and general conditions of life.

In this study, the income was significantly associated with attendance to the dentists, impacting on some daily performances, which agrees with some studies demonstrating that the educational level and the income influence on the oral health self-perception and oral health impact on QoL; moreover, the low income and lack of attending to the dentist has higher relationship with greater oral health impacts[19,20,25].

The results suggested that the indicators based on normative criteria are insufficient to measure the interference of the oral health condition in the daily routine of the individuals. Such aspect agrees with the literature that reports problems in the health action planning exclusively guided by those indicators [25]. The treatment success and effectiveness of the preventive measures directly depending on the compliance of the individualsand their health self-perception on the consequences.

For a better study on the oral health requirements, we recommended that the individual's self-perception is considered simultaneously to the clinical condition[30].

CONCLUSION

Based on the results of this present study, it can be concluded that: (1) the prevalence of the oral health impact on daily routine was high; (2) the most affect domain was the social performance: to perform the main work/social role; (3) the variables gender, income, and number of attendances to the dentist showed higher association with the impact on the daily performances. Further studies are necessary with other age ranges, cultures, and subjective indicators, aiming to integrate the treatment estimative, enhance the oral health concepts, and monitor the reduction of the oral

REFERENCES

1. Rodrigues SM,Vargas AMD,Moreira NA. Saúde bucal e qualidade de vida no idoso. Revista Científica da Faculdade de Ciênça da Saúde (FACS) da Universidade Vale do Rio Doce (UNIVALE). 1(12),2004.

2. Marcenes W, Steele JG, Sheiham A, Walls AW. The relationship between dental status, food selection, nutrient intake, nutritional status, and body mass index in older people. Cad SaudePublica. 2003 May-Jun;19(3):809-16.

3. World Health Organization. Food and Agriculture Organization of the United Nations. Diet, nutrition and the prevention of chronic diseases. Geneva: World Health Organization; 2003. (WHO Technical Report Series, 916).

4. Silva DD, de Sousa Mda L, Wada RS. Self-perception and oral health conditions in an elderly population.Cad SaudePublica. 2005 Jul-Aug;21(4):1251-9.

5. Adulyanon S, Vourapukjaru J, Sheiham A. Oral impacts affecting daily performance in a low dental disease Thai population. Community Dent Oral Epidemiol. 1996 Dec;24(6):385-9.

6. World Health Organization. International classification of impairments, disabilities and handcaps. Geneva: World Health Organization; 1980.

7. Masalu JR, Astrøm AN. Applicability of an abbreviated version of the oral impacts on daily performances (OIDP) scale for use among Tanzanian students. Community Dent Oral Epidemiol. 2003 Feb;31(1):7-14.

8. Sheiham, A. A determinação de necessidades de tratamento odontológico: uma abordagem social. In: Pinto VG, organizador. Saúde bucal coletiva. São Paulo: Editora Santos; 2000.

9. Neves, M. Saúde bucal do idoso e necessidade de prótese: uma revisão da literatura. Trabalho de conclusão de curso apresentado à Especialização em Atenção Básica à Saúde da Família, Universidade Federal de Minas Gerais, 2010.

10. Gomes AS, Abegg C. The impact of oral health on daily performance of municipal waste disposal workers in Porto Alegre, Rio Grande do Sul State, Brazil. Cad SaudePublica. 2007 Jul;23(7):1707-14.

11. REIS, S. C. G. B.; MARCELO, V. C. Saúde bucal na velhice: percepção dos idosos, Goiânia, 2005. CienSaudeCol. vol. 11. Rio de Janeiro, 2006.

12. Mendonça BM,CimõesR,Araújo ACS, CaldasAF Jr,Silva P. V. Impacto do número de dentes presentes no desempenho de atividades diárias: estudo piloto. Ciênc. SaúdeColetiva. 2010;15(3):191-9.

13. Shinkai RS, Del Bel Cury AA.The role of dentistry in the interdisciplinary team: contributing to comprehensive health care for the elderly. Cad SaudePublica. 2000 Oct-Dec;16(4):1099-109.

14. Loyola Filho AI, Uchoa E, Lima-Costa MF.A population-based study on use of medication by the elderly in Greater Metropolitan Belo Horizonte, Minas Gerais, Brazil.CadSaude Publica. 2006 Dec;22(12):2657-67.

15. Chianca TC, de Andrade CR, Albuquerque J, Wenceslau LC,

Tadeu LF, Macieira TG, et al. Prevalence of falls in older adults enrolled in a Health Center of Belo Horizonte-MG.Rev Bras Enferm. 2013 Mar-Apr;66(2):234-40.

16. Costa MF, Uchoa E, Guerra HL, Firmo JO, Vidigal PG, Barreto SM. The Bambuí health and ageing study (BHAS): methodological approach and preliminary results of a population-based cohort study of the elderly in Brazil. Rev SaudePublica. 2000 Apr;34(2):126-35.

17. Masalu JR, Astrøm AN.Applicability of an abbreviated version of the oral impacts on daily performances (OIDP) scale for use among Tanzanian students. Community Dent Oral Epidemiol. 2003 Feb;31(1):7-14.

18. Robinson PG, Gibson B, Khan FA, Birnbaum W. Validity of two oral health-related quality of life measures. Community Dent Oral Epidemiol. 2003 Apr;31(2):90-9.

19. Srisilapanan P, Sheiham A. Assessing the difference between sociodental and normative approaches to assessing prosthetic dental treatment needs in dentate older people. Gerodontology. 2001 Jul;18(1):25-34.

20. Steele JG, Sanders AE, Slade GD, Allen PF, Lahti S, Nuttall N, et al. How do age and tooth loss affect oral health impacts and quality of life? A study comparing two national samples. Community Dent Oral Epidemiol. 2004 Apr;32(2):107-14.

21. Tsakos G, Marcenes W, Sheiham A. Cross-cultural differences in oral impacts on daily performance between Greek and British older adults. Community Dent Health. 2001 Dec;18(4):209-13.

22. Sheiham A, Steele JG, Marcenes W, Tsakos G, Finch S, Walls AW.Prevalence of impacts of dental and oral disorders and their effects on eating among older people; a national survey in Great Britain. Community Dent Oral Epidemiol. 2001 Jun;29(3):195-203.

23. Locker D. Oral health and quality of life. Oral Health Prev Dent. 2004;2 Suppl 1:247-53.

24. Leao A, Sheiham A.Relation between clinical dental status and subjective impacts on daily living. J Dent Res. 1995 Jul;74(7):1408-13.

25. Gift HC, Atchison KA, Drury TF.Perceptions of the natural dentition in the context of multiple variables. J Dent Res. 1998 Jul;77(7):1529-38.

26. The World Health Organization Quality of Life assessment (WHOQOL): position paper from the World Health Organization. Soc Sci Med. 1995 Nov;41(10):1403-9.

27. Checkoway, H.; Pearce, N.; Crawford-Brown, D. J. Research Methods in Occupational Epidemiology. New York: Oxford University Press, 1989.

28. Lima-Costa MFF,Guerra HL,Barreto SM,Maia R. Diagnóstico da situação de saúde da população idosa brasileira: Um estudo da mortalidade e das internações hospitalares públicas. InformeEpidemiológico do SUS. 2000;9:23-41.

29. Marmot MG, Shipley MJ. Do socioeconomic differences in mortality persist after retirement? 25 year follow up of civil servants from the first Whitehall study. BMJ. 1996 Nov 9;313(7066):1177-80.

30. Cushing AM, Sheiham A, Maizels J. Developing socio-dental indicators--the social impact of dental disease. Community Dent Health. 1986 Mar;3(1):3-17.

Lígia Moura Burci
(Corresponding address)
Universidade Federal do Paraná
Av. Lothario Meissner, 632
Jardim Botânico - Curitiba/PR
CEP: 80210-170