SELF-ASSESSED ORAL HEALTH OF ELDERLY USING COMPLETE DENTURES

Auto-percepção de saúde bucal de idosos usuários de próteses totais

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RESUMO

Introdução: com o aumento da longevidade da população e a potencial relação entre a idade e perda de dentes, existe uma necessidade crescente da substituição de dentes por proteses totais. O impacto das próteses totais na saúde bucal de idosos é de grande importância para sua saúde geral. **Objetivo**: o objetivo deste estudo foi analisar a auto-percepção sobre saúde bucal de usuários de próteses totais. **Métodos:** o instrumento utilizado foi o questionário GOHAI (Índice de Avaliação Geriátrica de Saúde Oral), contendo 11 questões específicas sobre aspectos físicos e psicológicos (conforto ao comer, dor, dificuldes em morder, mastigar ou engolir alimentos, dificuldade de fonação, limitação nos contatos sociais, cuidados com auto-estima e aparência). As proteses totais foram avaliadas de acordo com o índice Nevalainen, incluindo aspectos de retenção, estabilidade, dimensão

vertical e oclusão. Sessenta voluntários frequentadores de um Departamento de Atenção aos Idosos concordaram em participar do estudo. **Resultados:** a pontuação média do GOHAI foi 25, ou seja, notou-se uma baixa auto-percepção de saúde bucal. A saúde bucal foi classificada como insatisfatória, apesar da qualidade ou tempo de uso das próteses totais ou da idade que a pessoa tinha quando começou a utilizar as proteses totais. **Conclusão:** conclui-se que os escores GOHAI não foram afetados pela estabilidade ou retenção das proteses totais. Com o aumento na longevidade e a potencial relação entre a idade e a perda de dentes, há uma necessidade crescente de substituição dos dentes por proteses totais. O impacto das próteses totais na saúde bucal de idosos é de grande importância para sua saúde geral.

Palavras-chave: odontogeriatria, auto-percepção, indicadores do estado de saúde.

ABSTRACT

Introduction: with the increase on population longevity and the potential relationship between age and teeth loss, there is a rising need for teeth replacement with complete dentures. The impact of dentures using on older adults oral health is of great importance for general health. **Aim:** the objective of this study was to evaluate self-assessed oral health of older adults using complete dentures. **Methods:** the instrument used for this evaluation was GOHAI (Geriatric Oral Health Assessment Index) questionnaire, containing 11 specific questions of physical and psychological aspects (such as eating comfort, pain, troubles in biting, chewing or swallowing foods, talking issues, limitation is social contacts, oral health care, self-esteem, appearance). Complete dentures were evaluated according to Nevalainen index, including retention, stability, vertical dimension, articulation and occlusion aspects. Sixty participants (n=60) agreed in participating on the study, from Department of Attention to Older Adults. **Results:** mean GOHAI score was 25, meaning a low self-perceived oral health. Oral heath was reported as unsatisfactory, despite the quality or time in use of complete dentures or the age the person had when start using dentures. **Conclusion:** we conclude that GOHAI scores were not affected by dentures stability and retention.

Keywords: geriatric dentistry, self-assessment, health status indicators.

INTRODUCTION

Longevity and aging of population is increasing. Current demographic projections for the year 2025 estimate a significant grow in elderly population: people having 60-85 years old will be double the current number and above 85 years population will be three times greater (IWASAKI *et al.*, 2015)

In Brazil, a research showed that only 23.5% of the elderly population (from 65 to 74 years old) does not use dentures. Upper complete dentures were found in 63.1% of the population and lower dentures in 37.5% (BRAZIL, 2011). This information suggests an association between the increase of age and the need for dentures.

Many functional and physical modifications occur with aging, frequently including teeth loss and the need for dentures (CAMARGO *et al.*, 2008). In older adults, the teeth loss can alter the entire digestive system functioning, limiting mastication, swallowing and speak.

Oral health is considered an essential component of a person global health and wellness, because is related to the appearance, life quality and nutrition status (DIAS-DA-COSTA *et al.,* 2010). Responsible for the increase in longevity and good health in elderly population, the adequate ingestion of nutrients, generally exists in the presence of healthy teeth or well adapted and adequate dental prosthesis. Due to prosthesis deficiencies, a person can change the nutritional habits, leading to an increase of digestive issues. To overcome mastication problems, the patient choose softer food, mainly carbohydrates rich in energy and poor in vitamins or protein, which can aggravate the nutritional status of older adults (MONTENEGRO *et al.*, 2007). Therefore, not using or having inadequate dentures can result in esthetic, functional, nutritional and digestion problems in addition to temporomandibular dysfunction.

Considering the increase of population longevity, the loss of teeth with age, and the influence of prosthesis on older adults general heath, the present study evaluated the quality of complete dentures used by older adults in Passo Fundo. This research analyzed the relation of dentures and individual self-perception and investigated how these conditions interfere in the self-assessed oral health.

MATERIAL AND METHODS

Participants of the study

The project was previously approved by the Ethical Committee of São Leopoldo Mandic School of Dentistry and Research Center (#2010/0263). This paper presents data from older adults who attend 13 groups of the Department of Attention to Older Adults (DATI) of a city in the south of Brazil, recognized as reference in health care. From the 2722 participants of DATI, this study selected people following the inclusion criteria: being older than 60 years old, using complete dentures in both arcs, being physically and mentally capable. Therefore, the study was conducted on a convenience sample of sixty older adults (n=60), who fulfilled the inclusion criteria and agreed in participate.

Evaluation instrument

Oral health evaluation was assessed using the Geriatric Oral Health Assessment Index (GOHAI).Participants answered a questionnaire based on the instrument developed by Atchinson and Dolan (1990). Only 11 of the original 12 questions were included in this study, because the question about teeth sensitivity was not applicable for denture users. Questions included in the study analyze physical aspects (such as eating comfort or pain, troubles in biting, chewing or swallowing foods, talking issues) and psychological issues (for example comfort level in eating with people, limitation is social contacts, oral health care or concerns, self-esteem, appearance). A higher index score indicates better self-assessed oral health.

Complete dentures evaluation criteria

Dentures quality was evaluated following the criteria established by Nevalainen *et al*. (1997), based on retention, stability, occlusion, articulation, vertical dimension and time in use. These items were classified in good, fair or poor.

Statistical analyses

The relation between different factors was evaluated using Pearson correlation.

RESULTS

The greater number of participants were female (n=54) having a mean age of 69 years. Mean age of males (n=6) was 71.

GOHAI evaluation

For the population studied, mean GOHAI score was2 4.5 (standard deviation of 2.23). Thirteen volunteers (21,7%) presented moderated self-assessed oral health(score between 27 and 30), and the others presented low oral heath (score lower than 27) (Table 1).

Table 1 - Frequency distribution (%) of individual GOHAI items (based on Atchinson and Dolan[7], 1990).

	Question	Score	Total	%
1	Does your denture limited the kind or amount of food you eat?	Always	17	28.3
		Sometimes	31	51.7
		Never	12	20
2	How often did you have trouble biting or chewing any hard or firm food, such as meat and apples?	Always	21	35
		Sometimes	28	46.7
		Never	11	18.3
3	Are you able to swallow food comfortably?	Always	42	70
		Sometimes	16	26.7
		Never	2	3.3
4	Do your dentures prevent you from speaking the way you wanted?	Always	2	3.3
		Sometimes	29	48.3
		Never	29	48.3
5	Are you able of eating any kind of food without feeling discomfort?	Always	10	16.7
		Sometimes	49	81.7
		Never	1	1.7
6	Did you avoid contact with people because of your denture condition?	Always	0	0
		Sometimes	23	38.3
		Never	37	61.7
7	Were you pleased or happy with the appearance of your gums or dentures?	Always	16	26.7
		Sometimes	26	43.3
		Never	18	30
8	Did you need using medication to relieve pain or discomfort in your mouth?	Always	0	0
		Sometimes	6	10
		Never	54	90

9	Were you worried or concerned about the problems with your gums or dentures?	Always	1	1.7
		Sometimes	31	51.7
		Never	28	46.7
10	Did you feel nervous because of problems with your gums or dentures?	Always	1	1.7
		Sometimes	29	48.3
		Never	30	50
11	Did you feel uncomfortable eating in front of people because of your gums or dentures?	Always	0	0
		Sometimes	24	40
		Never	36	60

Nevalainen index results

From the 60 participants, 42 (70%) presented the same time of use for the maxillary and mandibular complete dentures, and regarding the time of use, 31 (51.7%) participants have dentures with up to 10 years of use.

Most part of mandibular dentures (70%) were classified as having poor stability, while maxillary dentures were mostly classified as having good (50%) or fair (41.7%) stability (Table 2). In addition, few participants (8.3%) reported low stability of both dentures, meaning that no relation was found between the stability of maxillary and mandibular dentures.

Table 2 - Percentage of mandibular and maxillary complete dentures in respect to the stability.

		Maxillary dentures			
		Good	Fair	Poor	Total
Mandibular	Good	4 (6.7%)	-	-	4 (6.7%)
	Fair	10 (16.7%)	4 (6.7%)	-	14 (23.3%)
	Poor	16 (26.7%)	21 (35%)	5 (8.3%)	42 (70%)
	Total	30 (50%)	25 (41.7%)	5 (8.3%)	60 (100%)

Despite the fact that great part of maxillary dentures (93.3%) was classified as having good of fair retention, 80% of mandibular dentures were demonstrated to have poor retention (Table 3).

Table 3 - Percentage of mandibular and maxillary complete dentures in respect of the retention level.

		Maxillary dentures			
		Good	Fair	Poor	Total
Mandibular	Good	1 (1.7%)	-	-	1 (1.7%)
	Fair	10 (16.7%)	1 (1.7%)	-	11 (18.3%)
	Poor	16 (26.7%)	28 (46.7%)	4 (6.7%)	48 (80%)
	Total	27 (45%)	29 (48.3%)	4 (6.7%)	60 (100%)

The greater amount of dentures presented poor articulation (70%) and occlusion (61.7%), and 58.3% of the cases presented both conditions classified as poor.

And interocclusal freeway space greater than 6 mm was observed in 80% of the participants, meaning low vertical dimension. A satisfactory vertical dimension (freeway space between 1 and 6 mm) was found for the other participants.

No correlation was found between the participants age when start using dentures and GOHAI scores ($p = 0.1080$). Besides that, 75% of obtained scores were maintained lower than 27, indicating low self-assessed oral health, independently of the age of their dentures.

DISCUSSION

Subjective instruments, such as GOHAI, allow the obtainment of information about oral health, not used exclusively for diagnostics, but to assess complementary information of individual or population health.

GOHAI is considered an efficient self-reported oral health assessment instrument (EL OSTA *et al.*, 2012). Older adults presenting high need for dental care or deficient oral heath were easily identified using GOHAI, specially compared to other methods, such as OHIP-14.

Results showed a low self-reported index in the population studied (47 volunteers), which is in agreement with data reported by Naa *et al.* (2014), Henriques (2007), Santos *et al.* (2007), Araújo *et al.* (2008) e Costa *et al.* (2010). Only 13 patients presented a moderated oral health self-perception. No significant association was found between GOHAI values and time of dentures use, which means that patients had low self-perception of dentures, independently of the age of prosthesis or time of dentures use. In addition, data analyses demonstrated that factors such as dentures stability, retention, occlusion, articulation and vertical dimension had no influence on GOHAI values.

However, Yea-Yin *et al.* (2015) found a high and moderated GO-HAI in patients with mucosa alteration, prosthetic stomatitis, clinically inadequate dentures. Reisine and Bailit (1980), Lemos *et al.* (2013), Silva *et al.* (2005), Benedetti *et al.* (2007) and Martins *et al.* (2010) also demonstrated a positive self-perception in despite of oral health conditions.

The main factors associated to positive self-perception were the appearance (good) and mastication (positive). Haikal *et al.* (2011) reported positive GOHAI for 67% of studied cases, regardless of the bad clinical status of participants, suggesting low self-esteem and accepting limitations related to older adults oral health. Other study (SOARES *et al.*, 2011) demonstrated a positive self-perception contrasting with the observed clinical condition.

A difference between clinical evaluation of dental prosthesis and the patients' satisfaction level was observed. Self-assessed reports show that the patient evaluate their own oral condition based on the presence of pain, esthetics, functional and social problems, diverging significantly to the professionals evaluation (REISINE and BAILIT, 1980; LEMOS *et al.,* 2013).

Silva *et al.* (2005) found no difference of GOHAI index between edentulous patients compared to patients having teeth. These authors observed differences only in physical dimension (mastication). The fact that most of the edentulous patients were using complete dentures may have an influence on the negative perception of other factors. The authors suggest that further researches should investigate the self-perception of edentulous patients, confronting the results with dentate patients. GOHAI index was considered better in those individuals with better periodontal condition and presenting natural teeth. Atchinson and Dolan (1990) affirmed "Presenting few teeth, using removable prosthesis and noticing the need for treatment were factors significant related to the low index score, characterizing the worst oral health."

In a study of Naa *et al.* (2014), which included 17 volunteers, the GOHAI was used to measure the self-assessed oral health and Cantril index was used to assess the life overall satisfaction. 60 % of the participants presented low self-perception and 70% reported high (positive) life satisfaction. These data suggested that the low GOHAI had no effect on the overall quality of life.

In contrary, John *et al.* (2007) found a strong association between depression and dissatisfaction with dental prostheses. Depressed people are, generally, less satisfied with the dental prosthesis (JOHN *et al.*, 2007; RODAKOWSKA *et al.*, 2014). The authors demonstrated

an association of depression and dissatisfaction with dentures, with possible clinical consequences.

Therefore, adequate treatment is needed to overcome the low self-assessed oral condition, providing improvement of mastication quality and comfort during dentures use. In addition, it is important to highlight the relevance of prevention of oral diseases to preserve natural teeth and decrease the need of dentures use, and thus, providing greater satisfaction with the oral conditions.

CONCLUSION

We conclude that GOHAI mean value was 25, demonstrating a low self-assessed oral health (dissatisfaction) of older adult participants. Participants showed low perception of oral heath regardless the dentures quality or age and the time of dentures use. Data analyses showed that the differences found between the stability and retention of maxillar and mandibular dentures had no influence on GOHAI values.

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