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Inter-examiner agreement in the application of an oral health assessment instrument in hospitalized elderly

Concordância interexaminadores na aplicação de instrumento de avaliação da saúde bucal em idosos hospitalizados

Concordancia de interexaminadores en la aplicación de una herramienta de evaluación de la salud bucal en adultos mayores hospitalizados

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ABSTRACT

Objectives: to analyze the correspondence between nurse and dental surgeon assessments in the application of an Oral Health Assessment in dental screening of elderly hospitalized patients. **Methods:** cross-sectional study with elderly patients (n = 54) admitted to University Hospital from the Federal University of São Paulo. Data were collected through the assessment of oral cavity. Descriptive statistical techniques were used to analyze them, using tables and graphs. **Results:** there was correlation and agreement between nurse and dental surgeon assessments referring to application of an Oral Health Assessment in dental screening of hospitalized elderly. **Conclusions:** oral Health Assessment in dental screening for hospitalized elderly by nurses demonstrated excellent reproducibility and may be a resource to identify buccal alteration, helping the planning and execution of nurse care associated to oral health.
Descriptors: Oral Health; Elderly; Geriatric Dentistry; Nursing; Hospitalization.

RESUMO

Objetivos: analisar a concordância entre a avaliação do enfermeiro e a do cirurgião dentista em relação à verificação da condição da saúde bucal de idosos hospitalizados. **Métodos:** estudo transversal realizado com idosos (n=54) internados em enfermarias do Hospital Universitário da Universidade Federal de São Paulo. Os dados foram coletados por meio de avaliação da cavidade oral e foram analisados por técnicas de estatística descritiva, a partir de tabelas e gráficos. **Resultados:** houve correlação e concordância entre as avaliações do enfermeiro e as do cirurgião dentista na aplicação do instrumento Avaliação da Saúde Bucal para Triagem Odontológica em idosos hospitalizados. **Conclusões:** a aplicação do instrumento Avaliação da Saúde Bucal para Triagem Odontológica, em idosos internados pelo enfermeiro, demonstrou excelente reprodutibilidade, o que pode se tornar um recurso para examinar e identificar alterações bucais, bem como auxiliar no planejamento e execução da assistência de enfermagem associada aos cuidados com a cavidade oral.
Descritores: Saúde Bucal; Idosos; Odontologia Geriátrica; Enfermagem; Hospitalização.

RESUMEN

Objetivos: analizar la concordancia entre la valoración del enfermero y del cirujano dentista respecto a la comprobación del estado de salud bucal de adultos mayores hospitalizados. **Métodos:** se trata de un estudio transversal realizado con adultos mayores (n=54) internados en la enfermería del Hospital Universitario de la Universidad Federal de São Paulo. Los datos se recogieron mediante la evaluación de la cavidad oral y se analizaron con técnicas estadísticas descriptivas, a partir de cuadros y gráficos. **Resultados:** fue posible observar correlación y concordancia entre las evaluaciones del enfermero y las del cirujano dental en la aplicación del instrumento de Evaluación de la Salud Oral para el Triaje Odontológico en adultos mayores hospitalizados. **Conclusiones:** la aplicación del instrumento Evaluación de la Salud Bucal para el Triaje Odontológico de parte del personal de enfermería en adulos mayores hospitalizados, demostró una excelente reproducibilidad, que puede llegar a convertirse en un recurso para examinar e identificar las alteraciones bucodentales, así como ayudar en la planificación y ejecución de los cuidados de enfermería asociados a la atención de la cavidad oral.
Descriptores: Salud Bucal; Adultos Mayores; Odontología Geriátrica; Enfermería; Hospitalización.

INTRODUCTION

Law No. 8,842, from January 4th, 1994, in its Chapter I, Article 2, deals with the delimitation of chronological age considering as elderly people who are 0 over sixty years old, which is ratified by the Brazilian Elderly Statute destined to regulate the rights of those people in this age group[1].

The elderly population group grows faster than any other population group. This increase has occurred in a systematic and consistent manner, with growth rates greater than 4% per year in the period between 2012 and 2022. In 2050, we estimate that there will be more elderly people than children under 15 years old. Therefore, it is expected that the people considered elderly may reach a proportion of 73.5 million in 2060[2].

As people reach more advanced ages, they are affected by chronic conditions, especially non-transmissible (CNCD), which are characterized by long-term pathologies that, although not fatal, may be associated with the development of disabilities, resulting in impaired functionality and having an impact on the quality of life of the elderly. For this reason, public policies have directed strategies that seek to provide the elderly with the most adequate health status possible, in order to guarantee a dignified life and active aging[3-6].

The active aging approach is based on a multidimensional assessment, which involves both health aspects and the promotion of social relationships and the optimization of autonomy and independence[5-7]. This approach depends, equally, on determining factors that influence the aging process, such as behavioral factors that directly impact quality of life[4,6]. In this sense, there is a wide variety of behavioral aspects, which must be undertaken by the elderly themselves and health professionals, with regard, above all, to oral health. This is considered one of the main physiological systems, since it is linked to essential elements, for example, sufficient macro and micronutrient intake, preservation of nutritional condition and food selection, as well as self-confidence, adequate chewing, gain or weight loss, taste and phonation, aspects that influence the physical and psychosocial well-being of the elderly[3,8-11].

The oral condition is inherent to the general health of the elderly population and cannot be dissociated from it and, for this reason, there is a growing concern in the field of public health, since a great part of the elderly tends to present changes in the oral cavity, resulting, mainly, in care deficiencies throughout their lives. These changes increase the risk of developing periodontal and systemic diseases, which are associated with poor hygiene, the presence of biofilm, tartar, cavities, infectious foci, as well as dental wear and old prostheses or implants[3,9]. Moreover, we notice the presence of edentulism, the meaning of which is the partial or total loss of permanent teeth due to mutilating practices that occur subsequently to periodontal problems. We consider it as one of the main injuries in oral health and an important public health concern, given its high prevalence in the elderly, since approximately half of this population is edentulous, which constitutes a limitation in the masticatory function and in losses of aesthetic order[8-9,11-17].

For the maintenance of oral health in elderly individuals, there are three guiding factors: oral assessment, regular oral hygiene and dental treatment. However, when they are hospitalized, these patients represent a risk group, with respect to highly complex oral changes, resulting from inadequate care, which may occur due to lack of self-perception of oral health; limitations in maintaining adequate oral hygiene; the nonexistence of a daily care routine spent by the nursing professional; the absence of a dental surgeon (DS) expert in hospital units; due to lack of resources for care provided; and the absence of trained and qualified personnel to assess oral health, since nursing professionals, in addition to not having complete training to substantiate the care practices with the oral hygiene of the elderly in a scientifically technical way, , there is lack of protocols for assessments that could be used by the nursing team[13,18-21].

Oral hygiene is the main factor in maintaining preserved oral health. This maintenance consists of brushing teeth and all surfaces reached by a manual or electric brush, associated not only with the application of toothpaste and/or oral solutions, but also with the use of dental floss to perform interdental cleaning[6]. However, it is common for hospitalized elderly people to find it difficult to routinely and appropriately maintain all care with their hygiene, either because they do not perform cleaning and are not encouraged to take such action, or because they are dependent on others for the action of self-care and, thus, commitment to their autonomy. These elderly people, who need help from other people, are inclined to have worse oral conditions[7,18-20].

In hospital wards, it is quite rare to find protocols and instruments that can both assist in the care and screening of oral health and be used by the nursing staff in adequate monitoring and in the formulation of essential procedures according to individual needs. This aspect hinders more specialized care and, even, the adoption of educational and preventive strategies for patients[18-20].

Starting from the premise that there is a gap between the ideal intervention and the practice in hospital wards, we find it necessary to provide instruments for monitoring oral health, which can be applied by the nursing team, so that a protocol for the evaluation of the oral condition of hospitalized elderly patients is adopted. In addition, it is relevant that these instruments are able to support the best practices in this sector, as oral care of patients is one of the activities performed by this professional category and should be performed as an essential and daily procedure and with prescription according to the characteristics of each individual[7,18-20].

OBJECTIVES

To analyze the agreement between the nurse's and the dental surgeon's assessment in checking the oral health condition of hospitalized elderly.

METHODS

Ethical aspects

This article was submitted to and approved by the Research Ethics Committee from the Federal University of São Paulo. All participants, who agreed to participate in the research, either the elderly person or a family member, signed the Consent Form.

Study design, duration and location

This is a cross-sectional and observational study in epidemiology, supported by the STROBE tool. It has a quantitative approach, performed with elderly hospitalized in wards of Gastrosurgery, Orthopedics, Medical Clinic, Geriatrics, Pulmonology, Urology, Cardiology, Observation of the Adult Emergency Room and the Adult Emergency Room/Mixed Straight, belonging to the University Hospital of the Federal University of São Paulo. We carried out data survey between the months of October and November in 2017. The search for patients in each ward was carried out by the Hospital Management System.

Population, inclusion and exclusion criteria

The study subjects are elderly aged 60 years old or over. 54 individuals who were hospitalized during the data collection period, with favorable clinical condition to receive the oral evaluation, were included, in addition to having signed the Informed Consent Form (ICF). Both patients examined by only one of the researchers and those whose clinical condition made it impossible to assess oral condition or who had impaired cognition due to the lack of a companion at the time of collection were excluded.

Study protocol

The assessment of patients was guided by a validated instrument, called Oral Health Assessment for Dental Screening (ASBTO), as shown in Chart 1[19]. This instrument is a simple oral health tracking tool that is not subjected to the participants' cognitive status. It has eight (8) independent categories, that is, Lips, Tongue, Gums and Soft Tissues, Saliva, Presence of Natural Teeth, Presence of Dentures, Oral Hygiene and Pain. These categories will be assessed with a score from 0 to 2, where 0 = healthy, 1 = presence of changes or 2 = unhealthy. The final score may vary from 0 to 16 points, in which score 0 is very healthy, while score 16 is equivalent to very sick. In any of the items, in which the presence of oral alteration considered as 1 or 2 has been assessed, it is recommended that the elderly should be referred to a dental surgeon (DS). Furthermore, the presence of any of the underlined symptoms requires immediate attention[11].

The application of ASBTO was performed at different times and with a break of up to 48 hours between the evaluators. Data collection, by the nurse, took place on Tuesdays and Wednesdays in the evening, while that of the dentist was on Thursdays in the morning or afternoon.

We have done the clinical evaluation of the oral cavity individually in the hospital bed. The examiner, properly dressed and using a spatula, gauze and natural light, performed the opening and inspection of the oral cavity with the support of the script for dental screening. After the nurse evaluated the demands regarding the oral cavity, the patient's identification data (full name, age, ward unit and bed) were sent to the DS so that he could collect the data of these patients. The result of the application of the instrument was not shared among the evaluators until application conclusion.

Chart 1 - Oral Health Assessment Instrument for Dental Screening

1) Category	0 = healthy	1 = presence of changes	2 = unhealthy
2) Lips	( ) Smooth, pink, moist	( ) Cracked, reddish in the commissures, dry	( ) Swelling, local lump/lump, white or reddish spot, ulcer, bleeding, inflammation in the commissures (corners of the lips).
3) Tongue	( ) Normal, moist, wrinkled, pink	( ) Presence of cracks, covered by coating, reddish, stained	( ) Ulcerated, swollen, reddish and/or white spots
4) Gums and tissues	( ) Pink, moist, soft, no bleeding	( ) Reddish, dry, swollen, shiny, rough/ scratchy, stain or ulcer under prostheses	( ) White or reddish spots, general redness, swollen gums, bleeding, ulcers
5) Saliva	( ) Wet tissues, aqueous salivation, unimpeded free flow without obstruction	( ) Dry and sticky tissues, small amount of saliva	( ) Red and dry tissues, very little or no saliva, very thick saliva
6) Natural teeth (yes) (no)	( ) All teeth intact	( ) 1 to 3 roots or teeth with cavities or broken, teeth very worn s	( ) 1 to 3 roots or teeth with caries or broken, teeth very worn
7) Dentures (yes) (no)	( ) No area or broken teeth, dentures used in both arches continuously during the day	( ) 1 area or 1 damaged tooth, dentures used for only 1 to 2 hours a day, loose/ not fixed dentures, use only one denture (upper or lower)	( ) More than 1 area or more than 1 damaged tooth, missing denture or unused denture, need for denture adhesive
8) Oral hygiene	( ) Clean mouth, no food residue, no tartar on teeth or prostheses	( ) Food residues, tartar or biofilm in 1 to 2 areas of the mouth or small area of the prosthesis, bad breath (halitosis)	( ) Food scraps, tartar or biofilm in most areas of the mouth or in most prostheses, severe halitosis
9) Toothache	( ) No behavioral, verbal or physical signs of toothache	( ) Verbal or behavioral signs of toothache such as grimaces, bites on the lips, lack of appetite, aggressiveness	( ) Physical signs such as facial swelling, abscess in the gums, broken teeth, ulcerations and verbal or behavioral signs such as grimaces, bites on the lips, lack of appetite, aggressiveness

To be continued

Chart 1 (concluded)

1) Category	**0 = healthy**	**1 = presence of changes**	**2 = unhealthy**
Refer the patient to be examined by a dentist		ASBTO SCORE	___/16
The patient or family/guardians refuse dental treatment			
Next review of the patient's oral health at: _____/_____/_____			

Analysis of results and statistics

Initially, we analyzed the data descriptively. For categorical variables, absolute and relative frequencies were presented and for numerical variables, we used summary measures in the form of average, quartiles, minimum, maximum and standard deviation.

The reproducibility of the total score was assessed using the intraclass correlation coefficient. The intraclass correlation quantifies the global agreement at the individual level between the questionnaires applied by two researchers or the same researcher, in two moments. Values close to 1, from the intraclass correlation, indicate a good agreement between the responses. In addition to the intraclass correlation, Pearson's correlation (r) was presented. The agreements of each category were assessed using the Kappa coefficient, with a reference value of 1[22].

In order to facilitate the visualization of the two "interobserver" measures, we presented the Bland-Altman graph, which proposes the visualization of the differences among the measurements and the averages of the two evaluations in a dispersion graph. In this way, the graph allows to assess the magnitude of the disagreement through the difference as a function of the level of the score (represented by the mean). If there is no systematic bias, it is expected to observe points around the zero value of the difference. In addition, the graph shows a 95% confidence interval for the difference[22].

Statistical analyzes were performed using the statistical software SPSS 20.0 and STATA 12 (Bland-Altman graph).

RESULTS

Sample profile

Dental screening was performed on 70 elderly people. However, the sample number was 54 completed instruments, due to the impossibility of the dental surgeon completing his evaluation due to the clinical alteration of some patients, referral for surgery or hospital discharge during the interval of data collection between the examiners. The application of the ASBTO instrument was applied to the elderly who were hospitalized in nine wards units of a public hospital in São Paulo, in which 11 patients were from Gastrosurgery, 10 from Orthopedics, 9 from the Medical Clinic, 8 from Geriatrics, 6 from the Emergency Medicine for Adults, 5 from Pneumology, 2 from Urology, 2 from Cardiology and 1 participant in Adult Emergency Observation.

The main sociodemographic characteristics of the participants show that 51.9% were up to 69 years old, 35.2% had incomplete elementary school, 46.3% were married or lived together with a partner and 42.6% had 2 to 3 children. It is also noted that 81.4% had an income of 1-3 minimum wages and 63.0% were retired.

Analysis of each independent category

Strong agreements were identified in most categories, as shown in Table 1, with variations in Kappa values, greater than 0.800. When analyzing item by item from the ASBTO questionnaire, it was observed that the agreement was considered moderate only in the categories hygiene (k = 0.565, p <0.001) and tongue (k = 0.774, p <0.001).

Table 1 - Distribution of the elderly according to responses from the 8 independent categories, according to the researcher

Categories	**Nurse**		**Dental Surgeon**		**Kappa**	
	n	**%**	**n**	**%**	**K**	***p***
Lips	54	100	54	100	0.896	**<0.001**
0	28	51.9	31	57.4		
1	23	42.6	21	38.9		
2	3	5.6	2	3.7		
Tongue	54	100	54	100	0.774	**<0.001**
0	29	53.7	33	61.1		
1	25	46.3	21	38.9		
2	-	-	-		-	
Gums	54	100	54	100	0.83	**<0.001**
0	42	77.8	45	83.3		
1	10	18.5	7	13		
2	2	3.7	2	3.7		
Saliva	54	100	54	100	0.803	**<0.001**
0	43	79.6	40	74.1		
1	8	14.8	12	22.2		
2	3	5.6	2	3.7		
Teeth	54	100	54	100	0.869	**<0.001**
No	21	38.9	21	38.9		
0	13	24.1	17	31.5		
1	14	25.9	12	22.2		
2	6	11.1	4	7.4		
Prosthesis	54	100	54	100	1	**<0.001**
0	17	31.5	17	31.5		
1	21	38.9	21	38.9		
2	10	18.5	10	18.5		
No	6	11.1	6	11.1		
Hygiene	54	100	54	100	0.565	**<0.001**
0	27	50	40	74.1		
1	22	40.7	9	16.7		
2	5	9.3	5	9.3		
Pain	54	100	54	100	1	**<0.001**
0	51	94.4	51	94.4		
1	1	1.9	1	1.9		
2	2	3.7	2	3.7		

Total score analysis

Table 2 represents a comparison between the professionals' assessments, with regard to the total score, which may vary from 0 to 16. The average of the nurse's score was 3.4 while that of the dentist was 2.9, with a standard deviation of 2.1 and 2.0 respectively. In the oral assessment of the nurse, the maximum

score totaled 9 points, with a median of 3 points and with a 3rd Quartile represented by 5 points - approximately 41% of the elderly totaled scores equal to and/or below this value. In turn, the dentist's oral evaluation obtained a maximum score of 8 points, a median of 2.5 points and a 3rd Quartile represented by 4.3 points.

Table 2 - Summary measure of the scores per researcher

Scores	Average	Standard deviation	Minimum	Maximum	1st Quartile	Median	3rd Quartile	N
Score – Nurses	3,4	2,1	0	9	2	3	5	54
Score – Dentist	2,9	2	0	8	1,8	2,5	4,3	54

In Figure 1, there is a strong correlation between the scores of the evaluators 0.928 (p <0.001) and this has statistical significance, which allows the results of both to be considered coincident.

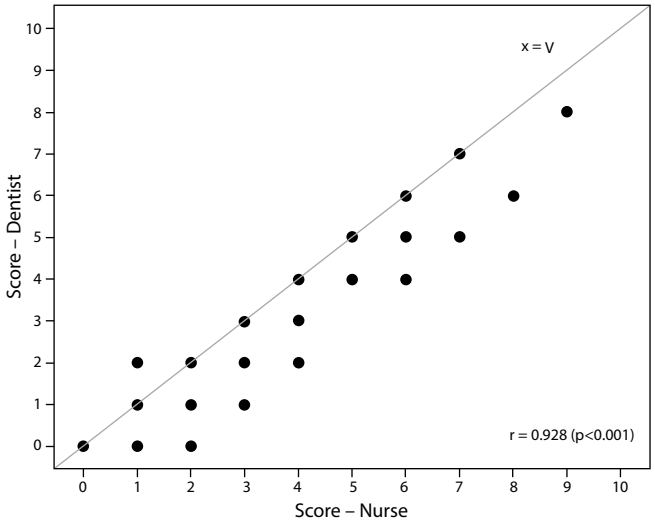

Figure 1 - Dispersion graph between the total scores of the nurse and the dentist

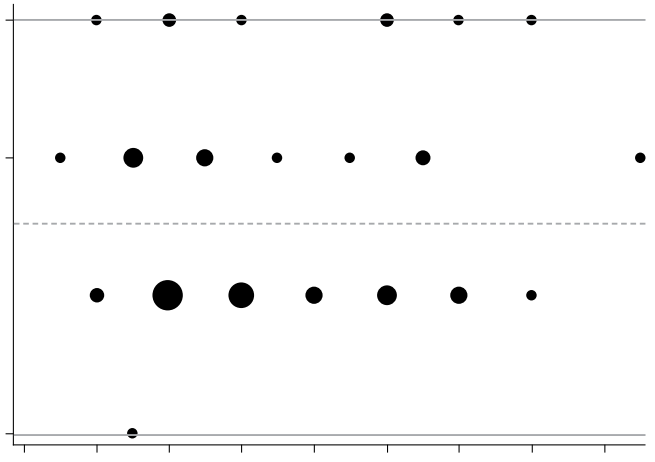

Figure 2 - Bland-Altman graph to assess interobserver agreement

The intraclass correlation, equal to 0.896 (95% CI 0.828 - 0.938) (p <0.001), demonstrates an excellent interobserver reproducibility of the questionnaire.

In Figure 2, we see that all points were within the limits of the confidence interval, which allows interobserver agreement, even though the nurse's scores are slightly above the dentist's scores.

DISCUSSION

According to the assessments performed by the professionals, with regard to the oral health condition of the elderly, the results of the study made feasible possible agreement in the independent categories. At the time of the examination, performed on the patients' lips, it was observed that, in most cases, they were healthy, that is, smooth, pink and moist. Those that presented some alteration had a dry aspect, were cracked and reddish in the commissures. The most severe cases had a local reddened nodule and/or bleeding.

Although some results of the nurse indicated a classification of lip condition worse than the constant in the DS, these findings showed almost perfect agreement and are in accordance with a study conducted at an LTCF in Porto Alegre (RS). In this study, a similarity was found in the evaluations, despite obtaining a slight agreement, with a tendency for a better classification of the condition of the lips by the DS, configuring the nurses' need to recognize the important changes in the oral conditions that are characteristic of the elderly population[18].

There is evidence that the elderly public is more vulnerable to care for the state of their oral health, often resulting from self-care neglected by biological, physical or environmental determinants[15,20,23-24]. The fact that a considerable number of elderly people have compromised teeth and/or prostheses hygiene are reflected by the nurse's assessment. It was observed the presence of food residues, tartar and biofilm, important halitosis, adhesive residues for mobile prostheses, which appeared to have been present in the mouth of these patients for more than a day, as well as the tongue coating associated with even the candidiasis[15].

The panorama of the categories "tongue and oral hygiene", observed by the nurse, obtained moderate agreement in relation to the evaluation of the DS, in which the inter-examiner divergences occurred, above all, in oral hygiene. More than 70%, of those examined by the dentist, had a clean mouth. In turn, in the nurse's assessment, half of the elderly had changes in this aspect of the instrument, unlike the clinical examination of the dentist (26%). This fact was possibly due to the variability of the condition of oral hygiene during the day and because they are the only indicators that can be modified by behavioral habits, since many elderly people performed or requested help to clean the oral cavity as the data were collected[7,18].

In the evaluation of the "gums and saliva" categories, a high inter-examiner agreement was found, in which both professionals agreed that the majority of the subjects had conditions of pink gums and moist tissues, with aqueous salivation and without obstruction. Regarding the observed changes, these were mainly the red, swollen, dry gums and gingival bleeding in

rare patients. It was in the item "saliva" that the greatest variation occurred and the dental surgeon considered the subjects with the worst changes (26%). This professional found the presence of dry, sticky tissues and very little or no saliva, while, in the nurse's assessment, a lower percentage (20.4%) was presented with regard to salivation. This factor can be explained, probably, because it is a subjective component to be examined and by the non-odontological background of nursing professionals[18].

This whole context is corroborated by researches that point to a greater risk for the elderly to develop changes in the salivary flow, for example, xerostomia, that is, decrease in saliva. This condition is aggravated by polypharmacy, which is commonly present in the daily life of this group during hospitalization, and is considered one of the aggravating factors in gingival alterations that can trigger a cycle of systemic disorders[7,18-23,25].

Based on the database of the National Oral Health Survey - SBBrasil, a study was conducted and presented results, in which about half of the elderly individuals developed edentulism, in addition to presenting cavities and teeth in poor condition[26]. The present research, although not showing the same proportion of the study mentioned above, shows an important percentage (38%) of edentulous subjects. We notice that there was a highly significant agreement between the researchers' dental screening in this category of the instrument, although the inter-examiner variation was not important, since the nurse considered the majority (37%) of the participants, while the DS considered 22 % of these participants, with changes from the presence of broken teeth, worn to roots or teeth with cavities[7,9,14-15,18].

In the evaluation of the aspects of mobile prostheses, there was a perfect agreement between the assessments of the nurse and the DS. Practically all subjects (88.9%) used prostheses, which, in the majority, (57.4%), had damaged areas, were used for only a few hours, only at the time of meals or were simply not used. Mostly, this occurrence was due to the fact that these prostheses are poorly adapted in the oral cavity, as well as the fear of the elderly of losing them in the hospital[7,11,14].

Moreover, there were some cases in which the elderly, despite the need, did not have the prostheses, and other cases in which they needed adhesives for their adherence (7; 11; 14). This scenario reveals similarities with the study that analyzed the self-perception of the elderly regarding their oral condition. This study found a high prevalence (91.3%) of individuals wearing dental prostheses, as well as emphasizing that more than half of them needed using it[15].

Through the analysis of data from the "pain" category, we observed that there was an equal agreement when comparing the nurse's assessment and that of the DS. Most participants (94%) were classified without verbal, behavioral or physical signs of pain during the intervention. According to the examiners' assessment, the minority presented face or verbalizations of discomfort, lack of appetite and signs, such as facial swelling. These findings are in line with a study that evaluated institutionalized elderly people to determine the validity and reliability indexes of the dental screening instrument. This instrument is in good agreement with this indicator, even considering unstable pain and considering that it also depends on the elderly's episodic response[18,27].

We find it necessary to clarify that the values, identified with variations between the oral examination of the researchers, with the exception of the saliva category, had higher scores in the nurse's assessment, with a tendency to negatively overestimate the oral condition of the elderly. These findings corroborate the results of other studies, as well as revealing that the reasons for such a situation may be related to the difference in the standard of normality considered by both examiners, that is, the nurses' fear of not adequately diagnosing any important condition that needed the dental surgeon specialist monitoring; the deficiency in nursing education regarding physiological and pathological changes in the oral cavity; the need for nursing to recognize changes in the oral condition during senescent or senile aging; and retaining the expertise of the dental surgeon on the subject[18-19,23].

Furthermore, it is worth mentioning that the instrument has some characteristics that are not clearly demonstrated, for example, the way to score, since some elderly people remained in hospital without using dental prostheses, but claimed that they always used it at home. Others mentioned that they only used the prosthesis when eating or that due to a fall they were experiencing pain in the mouth during the evaluation. In addition, the presence of sialorrhea was identified, which could impact the researchers' results. These observations made it difficult to select the scores on the instrument even to identify the severity of the change, as they were not being specifically mentioned causing risks of bias in the assessment of each professional, as well as in the correlation between both researchers.

In this sense, we note that, despite the difficulties encountered, whether they are related to the instrument, to the elderly's cognitive capacity and to the training of professionals, a stable inter-examiner correlation and statistically significant agreements were obtained regarding the comparison between the nurse's assessments and those of the DS in the application of the ASBTO instrument in hospitalized elderly. This fact demonstrates that this tool is useful, flexible and sensitive in the detection of oral alterations and allows professionals to perform a daily screening, with regard to the observation of all oral structures during the hospitalization of the elderly and, above all, allows that this professional uses a light care technology that will support him / her in making decisions about the most appropriate intervention for the context of each elderly person[18-19].

Study limitations

The sample number was impacted due to the turnover of inpatients established by clinical alteration; depending on the referral for surgery or even hospital discharge; and due to the fact that data collection is carried out in a single hospital, which may not represent the totality of situations experienced in other hospital environments. There are some barriers regarding the use of ASBTO instrument, especially with regard to the difficulty of application in the elderly with behavioral and/or cognitive alterations or even resistance regarding the oral examination.

Contributions to the area

When using the ASBTO instrument, nurses, as members of a multiprofessional health team, have subsidies to carry out a screening of the oral condition of elderly patients with the support of a simple

and easy to reproduce instrument for the evaluation, as well as to acquire knowledge, in order to implement care and educational care for hospitalized elderly. The use of this instrument makes it possible to activate the DS for monitoring in hospitals, as well as to direct the nursing team in basic care, such as, for example, daily quality oral hygiene with antiseptic products and dental floss after meals, cleaning the mobile prostheses after meals, application of prosthesis patches, hydration with liquids orally and lips with specific protective cream, as these measures helped to prevent some complications in the oral cavity, for example, xerostomy, dry mouth, dryness and lesions on the lips, prostheses poorly adjusted depending on the condition and poor oral hygiene and mobile prostheses, a condition that causes several local and systemic diseases. Thus, it allows the nursing professional to have a follow-up of patients who present important changes, associating with the socioeconomic context of the work environment, making this situation a multidisciplinary relationship with the purpose of alerting patients about the importance of oral health in what it concerns the quality of life and the preservation of general health.

CONCLUSIONS

The analyzes carried out in this study suggest that there was inter-examiner correlation and agreement in the application of the ASBTO instrument in hospitalized elderly, since professionals' scores had stability and no systematic bias regarding the tendency to obtain greater or lesser agreement in healthy or precarious oral conditions. However, it was observed that the nurse has a greater predisposition to consider the evaluation of the aspect of the mouth worse than that considered by a dental surgeon.

As elderly people are at greater risk of developing highly complex oral changes, resulting mainly from care deficiencies throughout their lives and with a perspective of worsening during hospitalization, it should be considered that the ASBTO tool enables nurses the examination of all oral structures, a greater basis to discuss the case with the dental surgeon and the multidisciplinary team, in addition to the possibility of planning and implementing oral hygiene care.

The application of the ASBTO instrument by nurses in hospitalized elderly, demonstrated excellent reproducibility, and can be a resource for examining and identifying oral changes, as well as assisting in the planning and execution of nursing care for the oral cavity.

Furthermore, the importance of recognizing the DS as a collaborating member in comprehensive care for elderly patients is emphasized, with the aim of preventing problems in oral health, and, consequently, of a systemic nature, of a public that has deficiencies in oral care during their lives. Furthermore, the importance of the DS in maintaining the autonomy and independence of patients during hospitalization is emphasized, since they have an influence on active aging and the quality of life of the elderly.

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