



Institutionalized elderly alimentation: relation between complaints and sociodemographic characteristics

Alimentação de idosos institucionalizados: relação
entre queixas e características sociodemográficas

Alimentación de adultos mayores
institucionalizados: relación entre las quejas y las
características sociodemográficas

Sabrina Vilanova Cardoso*

Maira Rozenfeld Olchik*

Adriane Ribeiro Teixeira*

Abstract

Introduction: One of the implications of the population aging is the increased demand for long-term care facilities. In some cases, the institutionalization can cause great stress to the elderly, making them more vulnerable. Therefore, these elderly often cannot compensate the inherent aging changes and, among those changes, are the difficulties in the alimentation process. **Aim:** to verify the relationship between complaints in alimentation and sociodemographic characteristics in institutionalized elderly. **Method:** This is a cross-sectional study in a long-term care facility for seniors. Data collection was conducted through self-reported screening. All elderly residents, except the ones with severe dementia or incapable of self-reporting, participated in the study. **Results:** 58.1% of seniors reported mastication changes, while 38.7% reported deglutition disorders. There was significant relation between mastication changes with gender, age, education level and deglutition disorders with the age variable. **Conclusion:** it was verified a significant relation between alimentation complaints and gender, age, education level and level of dependency in institutionalized elderly.

Keywords: Aging; Institutionalization; Speech-language Pathology; Mastication; Deglutition.

Resumo

Objetivo: Dentre as implicações do envelhecimento populacional está o aumento da procura por instituições de longa permanência. Em alguns casos a institucionalização pode causar grande estresse para o idoso tornando-o mais fragilizado. Por isso, muitas vezes esses idosos não conseguem compensar as alterações inerentes ao envelhecimento e dentre essas alterações encontram-se as dificuldades no processo de alimentação. Objetivo: verificar a relação entre queixas na alimentação e características

*Universidade Federal do Rio Grande do Sul – UFRGS – Porto Alegre-RS - Brazil

Authors' contributions: SVC data acquisition and drafted the initial and final version of the manuscript. MRO data acquisition, drafted the final version and final review of the manuscript. ART preparation of projects and final review of the manuscript.

Correspondence address: Sabrina Vilanova Cardoso - sabrinavilanova@hotmail.com

Received: 22/11/2015 **Accepted:** 14/05/2016



sociodemográficas em idosos institucionalizados. Método: Trata-se de um estudo transversal, realizado em uma instituição de longa permanência para idosos. A coleta de dados foi feita por meio de uma triagem autorreferida. Participaram do estudo todos os idosos residentes da instituição, com exceção dos idosos com demência grave e com impossibilidade de autorreferência. Resultados: 58,1% dos idosos relataram ter alterações de mastigação, enquanto 38,7% dos idosos relataram alterações na deglutição. Houve relação significativa das alterações de mastigação com as variáveis: sexo, idade e escolaridade e das alterações de deglutição com a variável idade. Conclusão: Foi verificada uma relação significativa entre queixa e as variáveis: sexo, idade, escolaridade e nível de dependência em idosos institucionalizados.

Palavras-chave: Envelhecimento; Institucionalização; Fonoaudiologia; Mastigação; Deglutição.

Resumen

Introducción: Entre las implicaciones del envejecimiento de la población se verifica el aumento la demanda por instituciones de larga estadia. En algunos casos, la institucionalización puede causar un gran estrés a los adultos mayores dejandolos más frágiles. Por eso, muchas veces esos adultos mayores no logran compensar los cambios propios del envejecimiento, y entre estos cambios se encuentran las dificultades en el proceso de alimentación. Objetivo: verificar la relación entre las quejas sobre la alimentación y las características sociodemográficas en adultos mayores institucionalizados. Se trata de un estudio transversal llevado a cabo en una institución de larga estadia para adultos mayores. La recolección de datos se realizó a través de una tria auto-referida. El estudio incluyó a todos los adultos mayores residentes en la institución, con la excepción de aquellos con demencia grave e imposibilidad de auto-referencia. Resultados: el 58,1% de los sujetos reportaron tener cambios en la masticación, mientras que el 38,7% informó modificaciones en la deglución. Hubo una correlación significativa entre los cambios de masticación con las variables sexo, edad y educación; y de los cambios de la deglución con la variable edad. Conclusión: Se verificó una correlación significativa entre las quejas y las variables sexo, edad, educación y nivel de dependencia en los adultos mayores institucionalizados.

Palabras clave: Envejecimiento; Institucionalización; Fonoaudiología; Masticación; Deglutiación.

Introdução

The aging of population is a global phenomenon, which has been subjected to several studies. Many areas have dedicated their studies on the impact of the elderly growth in several spheres. It is known that the increased demand for long-term care facilities for the elderly (LTCFE) is among the implications of this change in the age pyramid¹. The institutionalization may cause great stress to the elderly and, in some case, it may initiate several transformations of all natures, thus making the elderly more fragile^{2,3}.

It is known that the elderly population presents a series of morphophysiological changes, which are inherent to the aging process, and, given the fact that seniors are more fragile, it is common that institutionalized elderly people cannot be able to compensate such changes. The difficulties in the alimentation process is among those changes^{4,5,6}.

Regarding the alimentation process, the institutionalized elderly individuals present a series

of functional and structural changes, which may negatively impact their feeding process^{7,8,9,10}. And, as per the literature, such changes are frequent and significant⁵.

In the mastication, there are modifications due to the decrease of tonicity, mobility and sensibility of the tongue and lips^{11,12}, in addition to dental aspects, once the studies appoint that the oral health condition of institutionalized elderly is precarious, and it was observed the absence of teeth, edentulism, dental prostheses which were badly adapted or in terrible conservation state, in addition to high prevalence of periodontal diseases^{9,13}. These structural modifications may lead to the loss of masticatory efficiency and to the difficulty to form and control the bolus^{9,12,14}, thus causing a prejudice in the initial step of the elderly alimentation.

In relation to deglutition, it is known that in many situations the elderly cannot compensate the difficulties that arise during alimentation; hence, it is possible to observe transformations in the oral preparation phase, delay in the deglutition reflex firing, diminution of the laryngeal excursion,

multiple deglutition, among other signals¹⁵⁻¹⁷. These transformations may cause serious prejudices in the alimentation of the elderly people, and may lead to malnutrition and dehydration, also being able to jeopardize the emotional state of seniors and, consequently, their quality of life¹⁰.

Until this moment, the researched literature points to the agreement that the institutionalization causes prejudices to the alimentation of the elderly^{5,9,10,15,16}. However, the studies demonstrate peculiar and specific realities. It is known that the impact of the institutionalization has multiple factors, and thus, the complaints and impacting factors may vary according to the local and studied population. Therefore, it is important to specifically understand the population and identify the impacting factors, in order to work in the prevention of complaints, instead of working only in the rehabilitation.

The researched studies mention the impact of the alimentation changes in the elderly life quality, the differences among the elderly people, according to the type of institution and the predominant complaints among this population; however, they do not aim at identifying which sociodemographic factors may be related and impacting the complaints related to the alimentation. Therefore, this study aims at identifying the sociodemographic factors which impact the alimentation of institutionalized elderly individuals^{5,9,10,15,16}.

Methods

The study is a cross-sectional observational study and it was conducted in a long-term care facility for the elderly located in the city of Porto Alegre, in the State of Rio Grande do Sul, Brazil. The institution houses 60 or more year old elderly individuals of both genders, who are independents and dependents, whereas the dependent elderly individuals are allocated to the infirmary and the independents are divided into rooms. The elderly individuals residing in the institution are assisted by an interdisciplinary team, comprised of: social assistant, nutritionist, speech and language therapist, dental surgeon, physiotherapist, nurses and physician.

This research project was analyzed and approved by the University Ethical Research Committee, under number 1992, and it was also approved by the facility in which the study was conducted, according to Resolution 196/96 (BRAZIL.

Resolution no. 196/96, October 10, 1996, of the Ministry of Health, National Health Council, National Commission for Research Ethics).

The data was collected during the period from October 2011 to October 2012. The seniors residing in the LTCFE were included in this study, except for the elderly with severe dementia or unable of self-reporting.

The applied screening was elaborated based on the instrument proposed by Cavalcanti and Bianchini (2008) and was self-reported, that is, the obtained results demonstrated the perception of the elderly individuals regarding their difficulties. The screening was structured to be divided in two phases. In the first phase, general information was obtained, such as: age, education level and time of institutionalization. The second phase sought information on alimentation (mastication and deglutition) of the elderly. In this phase, in addition to the presence or absence of complaints, it was obtained information such as the use of prosthesis, edentulism, references to suggestive symptoms of choking, like coughing and choking during alimentation. The application time of the screenings was 45 minutes, in average.

The statistical analysis of the data was performed with Software Statistical Package for Social Science (SPSS v. 18.0 for Windows); for the analysis of the data, the following tests were used: Fisher's Exact Test and Mann-Whitney U Test. The adopted statistical significance index was of 5%.

Results

124 elderly individuals were screened, 58.9% (n=73) of which belonged to the female gender. The ages varied from 65 to 111 years old, and the average age was 79.9 (± 9.6) years. The education level was assessed in years, and the average was established as 4.1 (± 2.8) years while the average institutionalization time was 3.9 (± 1.9) years.

Table 1 shows the occurrence of mastication and deglutition complaints, in accordance with the gender. By generally analyzing the data, it is possible to observe that more than 50% of the elderly reported mastication changes, which were more prevalent in the male gender. Notwithstanding, in relation to deglutition, it was observed that most of the elderly did not report this change and, even so, the male gender was more prevalent in the presence of complaints. Although it is possible to observe a percentage difference between the

genders, concerning the presence of complaints related to mastication and deglutition, no significant differences were found in this comparison.

Still regarding mastication and deglutition, 90.3% (n=112) of the elderly used dental prosthesis and 6.4 (n=8) was edentulous. It was also

1. Comparison between the gender variable and the presence of mastication and deglutition complaints

Gender	Mastication changes n (%)		p-value	Deglutition changes n (%)		p-value
	Presence	Absence		Presence	Absence	
Male	35 (68.6%)	16 (31.4%)	0.064 ^a	23(45.1%)	28(54.9%)	0.263 ^a
Female	37 (50.6%)	36 (49.4%)		25(34.2%)	48(65.8%)	
General Total	72(58.1%)	52 (41.9%)		48(38.7%)	76(61.3%)	

Significance value (p<0,05)

Subtitle: a - Fisher's Exact Test.

observed that, among the patients with deglutition complaints, 81.2% (n=39) presented difficulties with solid consistency and 64.6% (n=31) reported the presence of coughing and choking during alimentation.

In Table 2, it is possible to observe the relation between elderly individuals with and without mastication complaints to the variables: age, education level and institutionalization time. Significant differences were found in the education level and

Table 2. Mastication complaint x average values of age, education level and institutionalization time

relação de mastigação x valores médios de idade, escolaridade e tempo de institucionalização

	Presence of Complaint	Absence of Complaint	p-value
Age	81.7 (±9.8)	77.6 (±8.9)	0.032 ^b
Education level	3.7 (±2.8)	4.6 (±2.8)	0.024 ^b
Institutionalization time	4.0 (±2.0)	3.9 (±1.9)	0.910 ^b

Significance value (p<0,05)

Subtitle b –Mann-Whitney U Test;

age distribution, whereas the elderly group that presented mastication complaints was older and had an inferior education level than the elderly

group without complaints. The institutionalization time presents similar distribution between the categories. By comparing the presence or absence of deglutition complaints with the variables: age,

Table 3. Deglutition complaint x average values of age, education level and institutionalization time

	Presence of Complaint	Absence of Complaint	p-value
Age	84.2 (±9.8)	77.3 (±8.5)	0.000 ^b
Education time	3.7 (±2.9)	4.3 (±2.7)	0.078 ^b
Institutionalization time	4.1 (±1.9)	3.8 (2.0)	0.570 ^b

Significance value (p<0,05)

Subtitle: b–Mann-Whitney U Test;

education level and institutionalization time (Table 3), it was verified a significant relation in the distribution of ages, whereas the elderly individuals with deglutition complaints were older than the elderly without complaints.

population, whereas 55% (n=11) was of the female gender. The average age was 82.9 years (±9.4) and the average education level was of 4.4 (±2.9) years of studies. It is possible to verify in Table 4 the relation between the mastication and deglutition complaints with the gender variable. No significant differences were found in this comparison.

By analyzing only dependent elderly individuals, allocated in the infirmary, it was observed that they corresponded to 16.1% (n=20) of the screened

Table 4. Dependent elderly: comparison between the gender and complaints of changes in the mastication and deglutition

Gender	Mastication Complaint n (%)		p-value	Deglutition Complaint n (%)		p-value
	Presence	Absence		Presence	Absence	
Male	8(88.9%)	1 (11.1%)	0.591 ^a	6(66.7%)	3(33.3%)	1.000 ^a
Female	8 (72.7%)	3 (27.3%)		7(63.6%)	4(36.4%)	
General Total	16(80%)	04(20.0%)		13(65%)	7(35.0%)	

Significance value (p<0,05)
 Subtitle: ^a - Fisher's Exact Test;

Table 5 presents the comparison of mastication and deglutition complaints between the dependent elderly people (infirmary) and other elderly individuals in the institution. It was verified that there

is a significant difference between the groups, and the dependent elderly presented more mastication and deglutition complaints.

Table 5. Dependent and Independent elderly: comparison between the presence of mastication and deglutition complaints

	Mastication change n (%)		p-value	Deglutition change n (%)		p-value
	Presence	Absence		Presence	Absence	
Dependents	16(80%)	4 (20.0%)	0,046 ^a	13(65.0%)	7(35.0%)	0,012 ^a
Independents	56(53.8%)	48 (46.2%)		35(33.7%)	69(66.3%)	
General Total	72(58.1%)	52 (41.9%)		48(38.7%)	76(61.3%)	

Significance value (p<0,05)
 Subtitle: ^a - Fisher's Exact Test;

Discussion

The sample was predominantly composed of the female gender (58.9%), which corroborates the literature data that points to a female predominance. Several studies regarding institutionalized elderly point to a female predominance^{5, 18, 20,27}. The low level of education found in this study corroborates the findings of the literature concerning institutionalized elderly individuals²¹.

In general, it is possible to observe in this study a great number of elderly individuals with complaints related to mastication and deglutition. According to the literature, there is a high prevalence of deglutition alterations in the geriatric population in general. And this problem is even more prevalent in long-term care facilities, in which the average of elderly individuals with any

change related to mastication/ deglutition is of 50% to 75%²⁷.

In relation to mastication, a high prevalence of complaints is observed, as 58.1% of the elderly individuals reported any difficulties in mastication. The same was observed in other studies about institutionalized elderly people^{16,21,22}.

The deglutition complaint percentage was not so elevated as the mastication complaint percentage; by analyzing other studies, it is possible to observe that the literature indicates a very large percentage range of complaints related to deglutition, varying from approximately 33% to 70% of the elderly individuals with complaints^{9,16,23}. The male elderly presented more percentage of complaints in mastication as well as in deglutition. It is important to perform other studies that quantify the complaints by gender and seek to understand this male prevalence in relation to said changes.

A significant relation between the ages and mastication and deglutition complaints was found, that is, older elderly were the ones who most reported mastication and deglutition complaints. The same result was found in the Nogueira and Reis (2013) study²⁷. It is possible to relate this finding with the fact that the older the elderly individuals are, the bigger is the physiological commitment caused by aging. Several studies discourse on aging and its repercussions in the structures and functions of the stomatognathic system and on the impact that such changes have on the alimentation of the elderly people²⁴⁻²⁷.

Similar to the researched literature²⁷, it was verified a significant relation between the mastication complaints and low education level, that is, the complaining group of elderly people presented an average educational level with less years than the non-complaining group.

By separating the elderly in dependents and independents and comparing these two groups to the mastication and deglutition complaints, it was possible to observe a significant difference between them, whereas the dependent elderly individuals presented higher percentage of complaints than the independent group, thus agreeing with the literature that indicates that 40% of dependent elderly living in a long-term care facility presents dysphagia. It is possible to justify this finding by the fact that dependent elderly people present more base diseases, more cognitive commitment and more physiological changes resulting from aging, and thus, are not able to compensate the changes.

The presence of complaints in this population must always be taken into considerations. It is important to understand that such complaints may be associated to the natural aging process - senescence - or related to the presence of pathologies - senility - requiring a differentiated attention⁷.

The high percentage of complaints identified in this study exposes the need of a speech and language therapist working in the gerontological team of the LTCFE. Upon the absence of said professional in the facility, such demand will be unattended, which will implicate in the global health state of the elderly²⁹.

It is important that the speech and language therapist work is not limited only to rehabilitation. Such therapist may perform the elderly alimentation management, approach aging general aspects and specific needs of senility, and, mainly, promote

prevention and promotion actions in health, acting prior to the installment of the pathology, thus aiming at the life quality of such population³⁰.

Conclusion

It was verified a significant relation between the presence of complaints and the variables: sex, age, education level and dependence level concerning institutionalized elderly individuals, however, the institutionalization time was not relevant in this population. It is important to highlight the value of studies relating and associating the sociodemographic variables to the complaints and changes in the alimentation of the elderly, so that it is possible to identify what really negatively impacts the alimentation, and, thus, create interventions focused on the prevention of such problems, acting on impacting factors.

References

1. Camarano AA, Kanso S. As instituições de longa permanência para idosos no Brasil. *Rev. Bras. Estud. Popul.* 2010 Jan./Jun; 27 (1): 233-5.
2. Pizarro RADS. A importância da atuação do profissional enfermeiro na qualidade de vida dos idosos institucionalizados. Uma avaliação qualitativa nas casas de repouso da cidade de São Paulo. [dissertação]. Florianópolis: Universidade Federal de Santa Catarina, 2004.
3. Perracini, MR. Prevenção e manejo de quedas. In: Ramos LR, org. *Guia de geriatria e gerontologia*. Barueri: Manole; 2005. p. 93-208.
4. Ferraz AF, Peixoto MRB. Qualidade de vida na velhice: estudo em uma instituição pública de recreação para idoso. *Rev. Esc. Enf. USP.* 1997 ago; 31(2): 316-38.
5. Gutierrez SM, Zanato LE, Pelegrini P, Cordeiro RC. Queixas fonoaudiológicas de idosos residentes em uma instituição de longa permanência. *Distúrbios Comun.* 2009 abr; 21(1): 21-30.
6. Mansur LL, Viude A. Aspectos fonoaudiológico do envelhecimento. In: Papaléo NM. *Gerontologia: a velhice e o envelhecimento em visão globalizada*. São Paulo: Atheneu; 2002. p.284-95.



7. Mac-Kay APMG. Linguagem e gerontologia. In: Ferreira LP, Befi -Lopes DM, Limongi SCO, orgs. Tratado de Fonoaudiologia. São Paulo: Roca; 2004. p. 903-10.

8. Águila MB, Dores SMC. Importância da avaliação das condições nutricionais do idoso. In: Sociedade Brasileira de Geriatria e Gerontologia, Caminhos do envelhecer. Rio de Janeiro: Revinter; 1994. p. 73-5.

9. Jales MA, Cabral RR, Silva HJ, Cunha DA. Características do sistema estomatognático em idosos: diferenças entre instituição pública e privada. Rev. CEFAC. 2005 Abr/Jun; 7(2): 178-87.

10. Lima RM, Amaral AK, Aroucha EB, Vasconcelos TM, Silva HJ, Cunha DA. Adaptações na mastigação, deglutição e fonoarticulação em idosos de instituição de longa permanência. Rev. CEFAC. 2009; 11(3): 405-22.

11. Bilton TL, Sustovich DR. Avaliação fonoaudiológica. In: Sustovich DR. Semiologia do idoso para o clínico. São Paulo: Sarvier; 1999. p. 81-4.

12. Perlman, AL, Schulze-Derieux, KS. Deglutition and its disorders: anatomy, physiology, clinical diagnosis, and management. San Diego: Singular Publishing Group; 1997.

13. Catão MHCV, Xavier AFC, Pinto TCA. O impacto das alterações do sistema estomatognático na nutrição do idoso. Rev. Bras. Ciênc. Saúde. 2011; 9(29): 73-8.

14. Osterberg T, Tsuga K, Rothenberg E, Carlsson GE, Steen B. Masticatory ability in 80-year-old subjects and its relation to intake of energy, nutrients and food items. Gerodontology. 2002 Dec; 19(2): 95-101.

15. Marcolino J, Czechowski AE, Venson C, Bougo GC, Antunes KC, Tassinari N, et al. Achados fonoaudiológicos na deglutição de idosos do município de Irati – Paraná. Rev. Bras. Geriatr. Gerontol. 2009; 12(2): 193-200.

16. Dias BKP, Cardoso MCAF. Características da função de deglutição em um grupo de idosas institucionalizadas. Estud. interdiscipl. 2009; 14 (1): 107-24.

17. Garcia MAA, Odoni APC, Souza CS, Frigério RM, Merli SS. Idosos em cena: falas do adoecer. Interface 2005; 9 (18): 537-52.

18. Del Duca GF, Silva SG, Thumé E, Santos IS, Hallai P. Indicadores da institucionalização de idosos: estudo de casos e controles. Rev. Saúde Pública; 46(1): 147-53.

19. Trindade APNT, Barboza MA, Oliveira FB, Borges AP. Repercussão do declínio cognitivo na capacidade funcional em idosos institucionalizados e não institucionalizados. Fisioter. Mov. 2013 abr/jun; 26(2): 281-9.

20. Vitorino LM, Paskulin LMG, Vianna LAC. Qualidade de vida de idosos da comunidade e de instituições de longa permanência: estudo comparativo. Rev. Latino-Am. Enf. 2013 jan/fev; 21(Spec): 3-11.

21. Roque FP, Bonfim FMS, Chiari BM. Descrição da dinâmica de alimentação de idosas institucionalizadas. Rev. Soc. Bras. Fonoaudiol. 2010; 15(2): 256-63.

22. Portes M. Caracterização e classificação da deglutição orofaríngea do idoso institucionalizado. Avaliação clínica fonoaudiológica. [dissertação]. Botucatu: Universidade Estadual Paulista Julio de Mesquita Filho, 2007.

23. Rozenfeld MA. Percepção subjetiva do engasgo em pessoas idosas. [Dissertação] São Paulo: Pontifícia Universidade Católica de São Paulo, 2007.

24. Cabre M, Serra-Prat M, Palomera E, Almirall J, Pallares R, Clavé P. Prevalence and prognostic implications of dysphagia in elderly patients with pneumonia. Age and Ageing. 2010; 39: 39-45.

25. Tanton M. Developing a screening tool and training package to identify dysphagia in all settings. Nurs Times. 2010; 106(15): 18-20.





26. Humbert IA, Robbins J. Dysphagia in the elderly. *Phys Med Rehabil*

Clin. 2008; 19(4): 853-66.

27. Nogueira D, Reis E. Swallowing disorders in nursing home residents: how can the problem be explained? *Clinical Interventions in Aging.* 2013; 8: 221-7

28. O'Loughlin G, Shanley C. Swallowing problems in the nursing home: a novel training response. *Dysphagia.* 1998; 13(3): 172-83.

29. Bilton T, Soares LT, Tega LV, Santos CAF. Acompanhamento interdisciplinar de idosos fragilizados. *Distúrbios Comun.* 1999; 11(1): 85-110.

30. Rumeau P, Vellas B. Dysphagia, a geriatric point of view. *Rev*

LaryngolOtolRhinol (Bord). 2003; 124(5): 331-3.