

# Difficulties self-reported of chewing and swallowing by active elderly

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## Abstract

The purpose of this study was to compare the presence of difficulties self-reported of chewing and swallowing by active elderly with a group of university adults. In this analytical study of transversal cohort 186 subjects divided into two groups: 93 active elderly from community center for health and leisure activities for people over 60 years old and 93 university adults. The age of the elderly was 63 to 93 years old (mean 72.3) and adults 17 to 45 years old (mean 24.8). Respondents selected by screening answered questions regarding their dental conditions, use of prosthetic implants and difficulties in chewing and swallowing in varying consistencies. The mean of teeth present among adults was 30.6 against 8.7 of the elderly. In the elderly group, there was edentulism in 28% of respondents. None of them refers to the presence of all teeth. Already in the adult group, edentulism has not been reported and nearly 40% of them reported the presence of all teeth. Thirty-one point two percent for the elderly reported difficulties chewing against 1.1% of adults. Swallowing difficulties were statistically prevalent in the elderly group: 21.5% thin liquid, 4.3% viscous liquid and 16.1% dual consistencies against adults group; 39.8% solids and 34.4% saliva compared to 1.1% of adults and 40.8% pills versus 9.7% of adults group. These results support the idea that prevention programs, early detection and warning of nutrition and physical consequences of the problems swallowing should be implanted in institutions whose focus is serving the active elderly.

## Introduction

The increase in the elderly population is a global reality. It is estimated that in fifteen years the population over the age of 60 years old will add 1.2 billion people. In developing countries like Brazil, this increase is even more significant. According to the comparative data of 1991 and 2010 Census, the total of elderly individuals increased from 5.6% to 9.7%, unusual increase to all other age groups [1,2].

Understanding aging and its particularities are essential for the structuring of a social support and health in various institutions that serve this population. Aging is a global, multidimensional process that considers not only biological issues but also the psychological and social aspects [3].

For elderly, the concept of health is strongly linked to their degree of autonomy, that is, its ability to establish and implement their own plans. The ability to manage your life without or with minimal assistance is the determining factor for active aging [4].

According to the demographic reason and of the concept of specific health of the elderly, it is possible to understand the current valuation of the shares of primary and secondary prevention in aging policies. Promote physical, mental and social health implies not only socio-economic gains, but mainly in the maintenance and improvement of the elderly quality of life [5].

As in most areas of human health research, research in geriatrics and gerontology is subjects affected by the pathology, diagnosis and treatment. It is recent research typical phenomena of active aging.

This same scientific path is traveled by speech therapy over the production of its gerontological knowledge. Recent studies showed only about 40% of active elderly reported some complaints related to swallowing [6,7].

However, these complaints are referred to spontaneously in routine medical appointments. This is likely to be because of active elderly adapt their daily lives to these changes. Perhaps assign them a natural tone, making them part of aging.

On the other hand, swallowing problems are similarly striking in daily life of the elderly. The Neuromuscular aging of the structures involved in swallowing, edentulism and use of poorly adapted prosthesis, among other modifications can cause symptoms such as coughing and choking, making the elderly restricted your food variability [8,9].

This diet can cause weight loss and malnutrition, and reduce food pleasure and interfere in the role of socialization that the act of eating provides [8].

It is worth mentioning that, before any typical disease of aging, focal or degenerative, the swallowing problem can progress to dysphagia, changes in food path that exposes the elderly at risk of malnutrition, dehydration and/or aspiration, disturbance this strongly linked to morbidity and mortality.

Thus, there is the knowledge of possible difficulties in chewing and swallowing of active elderly, contributing as an initial guideline for primary and secondary prevention programs, these actions are fundamental to the maintenance and improvement of their quality of life.

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**Key words:** elderly, community, chewing, swallowing, deglutition disorders

**Received:** May 22, 2017; **Accepted:** June 08, 2017; **Published:** June 10, 2017



- ✓ It began with the reading and signing of the free and informed consent form, describing the risks, benefits and discomforts, data confidentiality, as well as their rights as participants;
- ✓ It continued with the completion of screening and for those who fulfilled the inclusion criteria, then the interview;
- ✓ The total duration of the approach (reading/signing of the term, screening and interview) was 20 to 60 minutes.

## Statistical method

According to the characteristics of the sample and the purpose of the study, data were tabulated and submitted to a statistical treatment by using the following tests: ANOVA (Analysis of variance), two proportions equality test, Pearson correlation, confidence interval for the mean: it is a technique used when we want to see how much the mean may vary within a certain confidence probability.

This statistical analysis software were used: SPSS V17, Minitab 16 and Excel Office 2010.

## Results

### Sociodemographic, cultural and health characteristics

There was a predominance of females in the 196 individuals interviewed. They characterized 76.3% of the adult group and 80.6% of the elderly group, with no statistically significant difference.

Sociodemographic, cultural and health characteristics of respondents are presented in Table 3.

Respondents who reported health problems, 15 adults (16.1%) and 70 elderly (75.3%), showed their clinical conditions, as described in Figure 1.

### Swallowing characteristics

The results were divided into two parts:

**Teething:** The mean of teeth present among adults was 30.6 against 8.7 of the elderly. In the elderly group, there was edentulism in 28% of respondents. None of them reported the presence of all teeth. Already in the adult group, edentulism was not reported. Almost 40% of them reported the presence of all teeth.

In the Figure 2 shows the distribution of the use of prosthesis and implants in the group of active elderly.

The results obtained in the investigation of difficulties chewing and swallowing the elderly compared to adults, can be seen in the Figure 3.

None of the respondents relates difficulty swallowing of pasty foods and soft pieces.

Table 3. Sociodemographic, cultural and health characteristics of respondents.

Variables	Adults (n=93)	Elderly (n=93)	P-Value
	Mean (standard deviation)		
Age	24.8 (±7)	72.3 (±5.1)	<0.001*
Education (years)	12.4 (±1)	5.6 (±3.7)	<0.001*
Income	1.311 (±681)	1.954 (±979)	<0.001*
	n (%)		
Previous occupation			
Manual	0 (0%)	72 (77.4%)	<0.001*
Mid-level non-manual	93 (100%)	17 (18.3%)	<0.001*
Top-level non-manual	0 (0%)	4 (4.3%)	0.043*
Cohabitation			
With family	83 (89.2%)	66 (71%)	0.002*
With friends	4 (4.3%)	0 (0%)	0.043*
Alone	6 (6.5%)	27 (29%)	<0.001*
Health problems	15 (16.1%)	70 (75.3%)	<0.001*

\*Significance level is 0.05

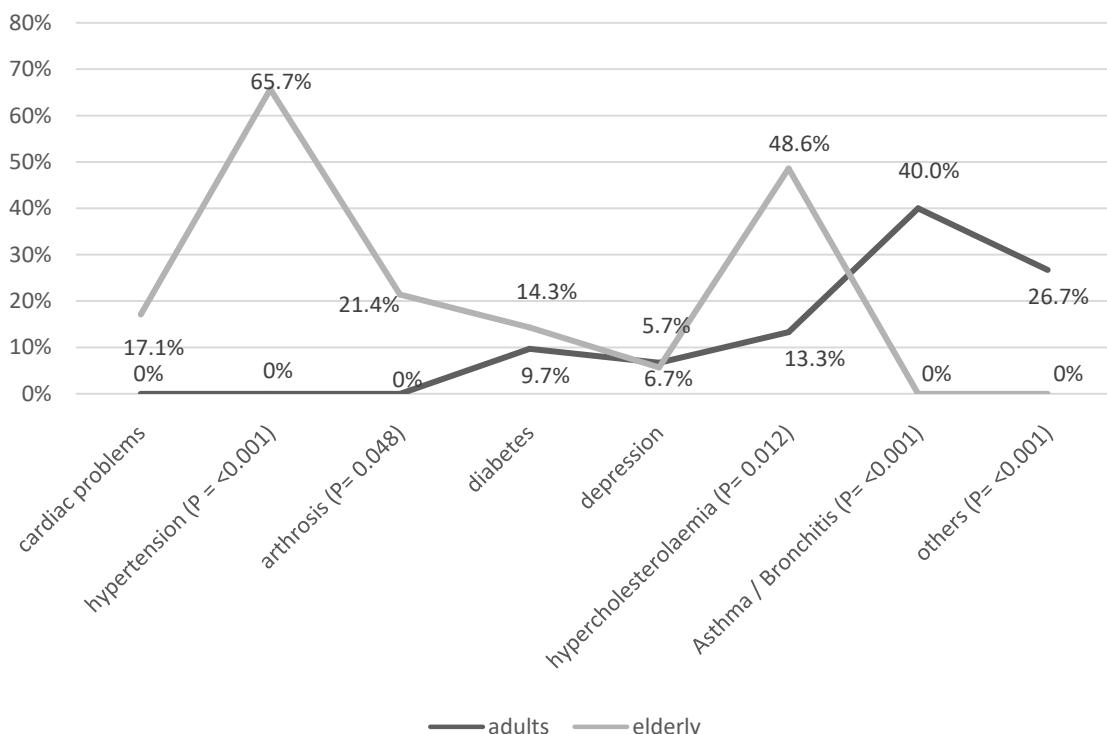
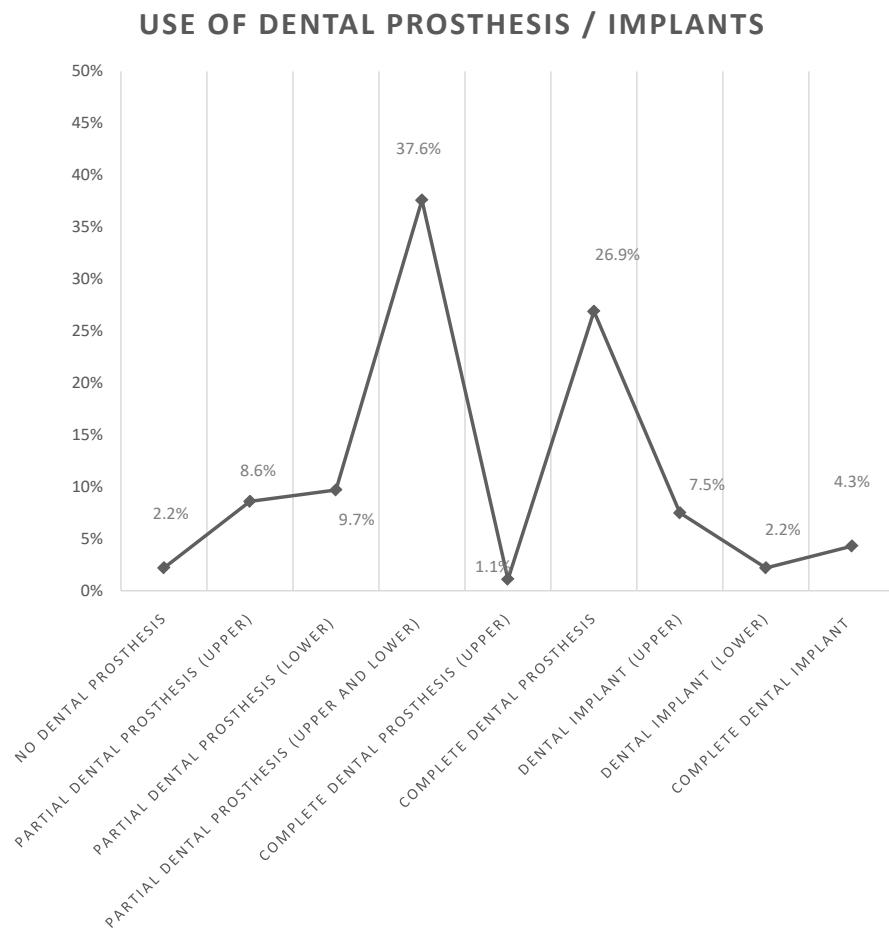
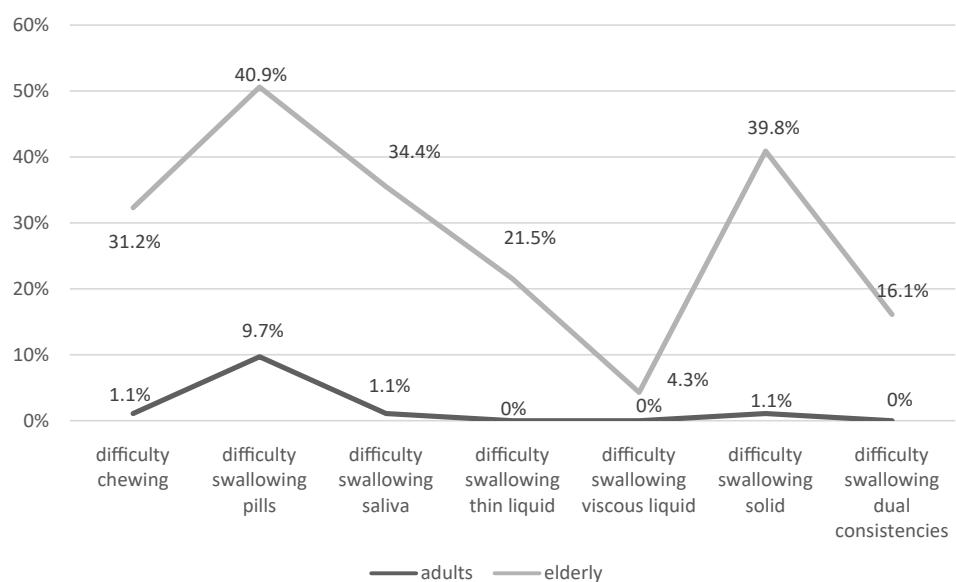


Figure 1. Comparison of the types of health problems reported by adults and elderly groups.



**Figure 2.** Distribution of the use of prosthesis and implants in the group of active elderly.



**Figure 3.** Comparison of chewing and swallowing difficulties self-reported for adults and elderly.

## Discussion

There was a statistically significant difference between the group of elderly and adults in all aspects. Among the elderly, 28% reported not having teeth and 72% reported having just a few; already 39.8% adults said they had all teeth and some in 60.2%. None of them use prosthesis or dental implants. The use of partial dental prosthesis upper and lower mentioned in 37.6% of the elderly and complete dental prosthesis upper and lower in 26.9%.

The findings of this study show a substantially better reality when compared with the references of the Ministry of Health of Brazil [14] that shows that 93% of elderly Brazilians between 65 and 74 years old have lost their teeth (all or some). Similarly, one study evaluated 293 elderly in São Paulo and found a greater number of edentulous (68.3%) and consequently a greater number of total dental prosthesis users (67%) [15].

The difficulty of access to dental services in the past and present and the culture that this service should be sought only when there is pain or dental aesthetic damage, contribute for an oral health deficit, which contributes to chewing difficulties in nutritional support, impacting negatively quality of life [16,17].

It is possible that this low percentage among the elderly found in this study is justified by the ease of access to dental services offered by the municipality, which includes in addition to the treatment itself, prosthesis donation and oral health campaigns in own senior center they attended.

Even enjoying good physical and mental health, independence in activities of daily living and the absence of previous complaints that swallowing was found statistically significant difference by asking to active elderly and adults about difficulties for food (chewing and swallowing).

One hundred seventeen healthy elderly American residents of the community were interviewed, and 38% of them reported some symptom or indication of dysphagia, such as increased feeding time, the presence of cough and feeling of standing food, quite similar content to those for the elderly this research in variables chewing, difficulty swallowing tablets, saliva and solids [18].

The findings thin liquid, viscous liquid and saliva agree on Japanese and English studies who interviewed approximately 1313 and 635 elderly and found complaints of dysphagia in 13.8% and 11.4% of participants [19,20].

Although natural aging swallowing, named presbyphagia occurs differently in each individual it is known that the action of time cause structural and functional alterations of swallowing. Changes in muscle composition (change of fiber and enzymes), decreased strength and mobility of the stomatognathic system and the amount of saliva lead to changes in the consistency of foods, often attributed as a preference and not difficulty [8,21-23].

The findings of this research and international findings point to an important index of swallowing difficulties in healthy elderly.

These numbers become even more relevant associated information to another panorama: the face of an acute clinical, neurological, infectious or systemic, elderly who have difficulty swallowing can become fragile, a condition that increases the complications rate as aspiration pneumonia, malnutrition and dehydration [3,19,24,25]. On the other hand, the Brazilian Ministry of Health published in 2010 a booklet of "Healthy eating for the elderly" [26], providing basic

guidelines of care in the purchase, preparation and storage of food and other measures that assist in food. However, does not mention the occurrence of symptoms of dysphagia or the possibility of swallowing-related problems.

Prevention programs, early detection and warning of nutrition and physical consequences of swallowing problems should be developed and widely disseminated in institutions whose focus is the senior care in both public and private spheres, as already noted a positive impact on intervention speech therapy in elderly at risk of dysphagia [27,28].

These preventive actions could minimize the impact of difficulties in chewing and swallowing before a health picture of weakening, focal neurological disorders, dementias, Parkinson's disease, infections and delirium, prolonging an oral food without the risk of aspiration and malnutrition.

## Conflicts of interest

We have no conflict of interest to declare.

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