

## Elderly Population Improve Quality of Oral Life

Shikha Jain<sup>1</sup>, Dushyant Pal Singh<sup>2\*</sup>, Chetan Sharma<sup>3</sup>

<sup>1</sup>Senior functional consultant OHUM Healthcare Private Limited.

<sup>2</sup>Assistant Professor, Department of Dentistry, Govt. Medical College, Chittorgarh.

<sup>3</sup>Associate Professor, Department of Prosthodontics, RRDCH, Udaipur.

---

Received: 11-03-2023 / Revised: 08-04-2023 / Accepted: 18-05-2023

Corresponding author: Dr. Dushyant Pal Singh

Conflict of interest: Nil

---

### Abstract

**Introduction:** The Geriatric Oral Health Assessment Index (GOHAI) has proven to be an excellent tool for detecting oral disorders. On the other hand, the relative responsiveness of this measure to detect clinically meaningful change is not entirely clear. The GOHAI is a 12-item self-reported index, validated first in the United States in an elderly Caucasian sample and subsequently in Hispanic, African American, Chinese, French and Spanish samples.

**Aim and objectives:** To provide necessary data for oral health administrators to plan comprehensive programmes to improve quality of life in elderly population.

**Methodology:** All elderly individuals in these old age homes formed the study population. WHO Oral health assessment, 1997 and GOHAI was used in the study.

**Results:** About 29.3% (n=66) said that they were sometimes able to eat without feeling discomfort while 5.3% (n=12) were often able to eat without discomfort. About half of the participants i.e. 50.7%(n=114) said they never did while 2.7% (n=6) said they often or always had limit their contacts with people. About 42.7% (n=96) said they never were, while 4% (n=9) said they seldom were pleased with the looks of their teeth, gums or dentures.

**Conclusion:** The study focus on the need to conduct similar studies with more diverse population and influence the policy makers in the country to include geriatric oral health care needs in National Oral Health Policy.

**Keywords:** Oral health status, oral health related quality of life, Elderly Population.

---

This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

---

### Introduction

The Geriatric Oral Health Assessment Index (GOHAI) is an example of a patient-based assessment of oral health problems commonly affecting elderly adults. More recently, it has been used with populations of younger adults. As the GOHAI appeared to have acceptable reliability and validity in all ages, it was recommended that the name of Geriatric Oral Health Assessment Index (GOHAI) be changed to the General Oral Health Assessment Index (GOHAI).[1]The Geriatric Oral Health Assessment Index (GOHAI) has proven to be an excellent tool

for detecting oral disorders. On the other hand, the relative responsiveness of this measure to detect clinically meaningful change is not entirely clear. The GOHAI is a 12-item self-reported index, validated first in the United States in an elderly Caucasian sample and subsequently in Hispanic, African American, Chinese, French and Spanish samples. The 12 items assess three dimensions: physical functions (eating, speaking and swallowing), psychosocial functions (worry or concern about oral health, dissatisfaction with appearance, self-consciousness about oral health,

avoidance of social contacts because of oral problems) and pain or discomfort (use of medication to relieve pain, oral discomfort). The GOHAI pays special attention to problems related to food ingestion, which are addressed by one item in all four dimensions of the index: “trouble biting or chewing food” (functional limitation), “discomfort when eating” (pain and discomfort), “uncomfortable eating in front of people” (psychological impacts) and “limit kinds or amounts of food” (behavioral impacts).[2]The GOHAI has been used widely with elderly patients and less frequently in the context of longitudinal study. It has been recommended for use as an outcome measure in the evaluation of dental treatment.[3] Many OHRQoL assessment tools have been recently reviewed out of which only seven are recommended for the geriatric setting. Among them, the shortest questionnaire specifically developed to assess OHRQoL in geriatric people is the Geriatric / General Oral Health Assessment Index (GOHAI).[4]

### Material And Methods

A cross sectional study was conducted of old age homes were present in the Jaipur city. All elderly individuals in these old age homes formed the study population. Ethical clearance for the study was obtained by the ethical committee, NIMS Dental College, Jaipur. Voluntary informed written permission was obtained from the subjects after explanation of the nature of the study. Sample size based on inclusion and exclusion criteria, elderly people from all the old age homes present in the Jaipur city were included in the study.

### Inclusion Criteria

- a) Elderly institutionalized individuals above the age of 60 years
- b) Participants who could answer the questions

### Exclusion Criteria

- a) Subjects who could not read or suffered from depression or other psychiatric problems
- b) Subjects who could not speak

### Study tools

WHO Oral health assessment, 1997

### Schedule of the Study

The study was systematically scheduled to spread over a period of 6 months. A daily and weekly schedule was prepared well in advance by informing and obtaining permission and consent from the authorities. On an average 15 subjects were examined per day.

### Data Collection

Dental caries and periodontal status was assessed using the dentition status and treatment need, community periodontal index, prosthetic status and prosthetic need was recorded on WHO Oral health assessment form.

### Details Of Clinical Examination

#### Personnel and Physical Arrangements

All the examinations were carried out by the investigator himself on the subjects who was assisted by a trained and cooperative recording assistant.

#### Type of examination

The subjects were examined by type III clinical examination.

#### Armamentarium

The following instruments were used in this study:

1. Plane mouth mirrors
2. CPI probes
3. Tweezers
4. Sterilized cotton pellets
5. Kidney trays
6. Chip blowers
7. Cotton holders
8. Examination Gloves
9. Disposable Mouth masks

Sufficient sets of autoclaved instruments were taken during the study to avoid the need to interrupt examination.

### Statistical Analysis

The data was entered on to a personal computer and the analysis was done using the SPSS (statistical presentation software system) for windows (version 17). Descriptive statistics was carried out. The statistical significance was fixed at 0.05.

### Results

To assess oral health status among elderly individuals aged 60 years and above. Oral health related quality of life using GOHAI index and to provide necessary data for oral health administrators to plan comprehensive programs to improve quality of life in elderly population. Out of 225 participants, 142 participants were in 60-65 years age group, 29 in 66-70 years age group, 33 in 71-75 years age group, 09 in 76-80 years age group, 09 in 81-85 years age group and 03 in 86 and above years of age. The data showed that majority of participants were from the age group 60-65 years. Mean age was calculated to be 67 years. More than half of the participants were female (55.1%) and rest were males (44.9%). Out of total 225 participants, 56.6% (n =125) were Illiterate, and 1.3% (n =3) were Professional. Most of the institutionalized elderly population was Unemployed (48.9%) while 1.3% were semi-professional. On asking question that How often did you limit the kinds or amounts of food you eat because of problems with your teeth or dentures, About 32% (n=72) of participants said never, while 5.3% (n=12) said they seldom limit the kind or amount of food. Half of the participants (50.7%) were always able to swallow comfortably while only 1.3% could seldom swallow comfortably. The Teeth or dentures of 66.7% (n=150) participants never prevented them while those of 1.3% (n=3) often prevented them from speaking the way they wanted.

About half of the participants i.e. 50.7%(n=114) said they never did while 2.7% (n=6) said they often or always had limit their contacts with people. About 42.7% (n=96) said they never were, while 4% (n=9) said they seldom were pleased with the looks of their teeth, gums or dentures. About 35.6% (n=80) said that they never used while 2.7%(n=6) said they always used medication. About 28.0% (n=63) said that they sometimes were, while 4% (n=9) said they were very often worried. About 41.8% (n=94) participants never feel nervous while 1.3% (n=3) said that they very often feel nervous or self-conscious because of problems with their teeth, gums or dentures. More than half i.e. 53.8% (n=121) participants never feel uncomfortable while 1.3% (n=3) often feel uncomfortable eating in front of people because of problems with their teeth or dentures. It shows that 26.7% (n=60) of participants never had teeth or gum sensitive to hot, cold or sweets. About 10.7% (n=24) said they often and very often had sensitive teeth or gums. About 62.7% (n=141) did not have healthy CPI score even in a single tooth. 17.3% had healthy score for 1 tooth, 9.3% for 2 teeth, 6.7% for 6 teeth, 2.7% for 3 teeth and 1.3% for 4 teeth. About 42.7% (n=96) participants did not have bleeding CPI score for even a single tooth while only 1.3% (n=3) had a bleeding CPI score for 6 teeth. About 60% (n=135) participants did not have calculus CPI score for even a single tooth while only 1.3% (n=3) had a calculus CPI score for 4, 5 and 6 teeth. About 96% (n=216) participants did not have shallow pocket CPI score for even a single tooth while only 1.3% (n=3) had a shallow pocket CPI score for 1,2 and 3 teeth. About 45.8% (n=103) participants had all teeth recorded while only 1.3% (n=3) had a 5 teeth not recorded by the CPI. The distribution of study participants according to loss of attachment. Loss of attachment was normal in 6 teeth for 100 participants while in 1 tooth for 3 participants. Loss of attachment score was 1,2 and 3 for no teeth in all the

225 participants. The distribution of study participants according to decayed, missing and filled teeth. A total of 240 teeth were decayed (1.067 mean per patient), 2395

teeth were missing (10.64 mean per patient) and 12 teeth were filled (0.05 mean per patient).

**Table 1: Association of gender with the responses to the GOHAI items.**

GOHAI items	Responses (n)						Chi square	P value
	Never	Seldom	Sometimes	Often	Very often	Always		
1	72	12	45	21	30	45	17.449	0.004
2	78	27	36	18	15	51	10.389 <sup>a</sup>	.065
3	69	3	21	6	12	114	7.798 <sup>a</sup>	.168
4	150	15	30	3	9	18	27.847 <sup>a</sup>	.000
5	50	18	66	12	32	47	12.721 <sup>a</sup>	.026
6	114	27	57	6	15	6	5.421 <sup>a</sup>	.367
7	96	9	78	12	12	18	10.648 <sup>a</sup>	.059
8	80	37	72	21	9	6	15.916 <sup>a</sup>	.007
9	47	58	63	18	9	30	14.290 <sup>a</sup>	.014
10	94	68	39	15	3	6	10.067 <sup>a</sup>	.073
11	121	56	30	3	9	6	16.835 <sup>a</sup>	.005
12	60	30	51	24	24	36	11.637 <sup>a</sup>	.040

The above table shows the association of gender with the responses to the GOHAI items. There was statistically significant value for questions 1,4,5,8 and 9 as the p value was less than 0.05.

### Discussion

The present study was conducted to assess oral health status among elderly individuals aged 60 years and above. As did Locker *et al.*[5], we found that GOHAI was very successful at detecting oral disorders, with a few participants having a very high score of 55-57. This is because GOHAI places great emphasis on functional limitations and pain or discomfort, which are more immediate and more common outcomes of oral disorders in the elderly population. The results showed that the Hindi version of GOHAI exhibits satisfactory psychometric properties. The analysis reported that the Hindi GOHAI demonstrates good internal consistency. The Cronbach's alpha coefficient was similar to the values obtained in previous surveys.[6] A total of two twenty five participants in the age

group of 60 and above were included in the study of which 55.1% were females and 44.9% were males. Most of them belonged to 60-65 years age group. Of the participants 4% were from lower middle class, 50.2% were from upper lower class and 42.2% were from lower class. A few of participants from higher socioeconomic status were part of the study. This may have led to misrepresentation of all the socioeconomic classes in this study. In this study the participants were from lower middle and lower class, had lower levels of education (middle school, primary school and illiterate), less income (Rs.4515.56 on an average) and most of them were Unemployed. A study done among Brazilian and Canadian independently living elderly showed numbers of remaining teeth were related to greater education and higher income status for that population[7]. A similar study, analysed 27 patients from the age group 60 – 84 where the GOHAI score was seen to be increased from 27.48 to 30.19 (p=0.002) which was highly significant; whereas the present

study examined 225 patients from the age group 60-88, where the GOHAI score was seen to be increased from  $28.90 \pm 7.28$  to  $42.19 \pm 7.60$  ( $p$  value  $< 0.001$ ) which was highly significant.

### Conclusion

About 34.7% (n=78) never had any trouble while 6.7% (n=15) had trouble biting or chewing any kind of food. Half of the participants (50.7%) were always able to swallow comfortably while only 1.3% could seldom swallow comfortably. Teeth or dentures of 66.7% (n=150) participants never prevented them while those of 1.3% (n=3) often prevented them from speaking the way they wanted. About 29.3% (n=66) said that they were sometimes able to eat without feeling discomfort while 5.3% (n=12) were often able to eat without discomfort. About half of the participants i.e. 50.7% (n=114) said they never did while 2.7% (n=6) said they often or always had limit their contacts with people. About 42.7% (n=96) said they never were, while 4% (n=9) said they seldom were pleased with the looks of their teeth, gums or dentures. About 10.7% (n=24) said they often and very often had sensitive teeth or gums.

### References

1. Shigli K, Hebbal M. Assessment of change in oral health-related quality of life among patients with complete denture before and 1-month post-insertion using geriatric oral health assessment index. *Gerodontology*. 2010; 27:167-73.
2. Gil –Montoya JA, Subira C, Ramon, JM, and Gonzalez-Moles MA. Oral health related quality of life and nutrition status. *J Public Health Dent*. 2008; 2:68-72.
3. Veyrone JL, Tubert-Jeannin S, Dutheil C, Riordan PJ. Impact of new prostheses on the oral health related quality of life of edentulous patients. *Gerodontology*. 2005; 22:3-9.
4. Franchignoni M, Giordano A, Levrini L, Ferriero G, Franchignoni F. Rasch analysis of the Geriatric Oral Health Assessment Index. *Eur J Oral Sci*. 2010; 118:278-83.
5. Locker D, Matear D, Stephens M, Lawrence H, Payne B. Comparison of the GOHAI and OHIP-14 as measures of the oral health-related quality of life of the elderly. *Community Dent Oral Epidemiol*. 2001; 29: 373-81.
6. Mascarenhas AK. A comparison of oral health in elderly populations seeking and not seeking dental care. *Spec Care Dentist*. 1999; 19:248-53.
1. Joaquim AMC, Wyatt CCL, Aleksejuniene J, Greggi SLA, Pegoraro LF, Kiyak H A. A comparison of the dental health of Brazilian and Canadian independently living elderly. *Gerodontology*. 2010; 27: 258–265.