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### **Perception of older adults by gender before and after comprehensive dental treatment assessed using the GOHAI**

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#### **Abstract**

Alterations within the oral cavity can limit or interfere with the performance of daily activities, both at work and at home. Consequently, the psychosocial impact of oral health problems may affect individuals' lifestyle and quality of life. The aim of this study was to compare the perception of older adults assessed with the GOHAI index before and after comprehensive dental treatment. The sample consisted of 38 patients 21 men and 17 women aged between 60 and 80 years. This was a longitudinal, comparative, and interventional study. All participants signed an informed consent form and completed the GOHAI survey following anamnesis, diagnosis, and treatment planning. Each patient then received the corresponding comprehensive dental treatment, and several weeks later, the GOHAI survey was administered again in person.

No significant differences were found in the comparison of mean scores and standard deviations across GOHAI domains and total scores between genders. The perception before and after comprehensive dental treatment was similar in older male and female adults, indicating that both groups reported the same symptoms prior to and following rehabilitative treatment.

**Keywords:** Perception, older adults, gender, GOHAI, comparison

#### **1. Introduction**

The World Health Organization (WHO) defines health as "a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity." Oral health, in turn, refers to the absence of oral or facial pain, infections, gingival and periodontal diseases, dental caries, missing teeth, and other conditions that may interfere with essential functions such as chewing, speaking, or expressing emotions such as smiling and that negatively impact an individual's psychosocial well-being <sup>[1]</sup>.

Oral cavity disorders can significantly limit or disrupt daily activities, both in professional and domestic settings. Consequently, the psychosocial burden of oral health problems may alter a person's lifestyle and overall quality of life <sup>[2]</sup>.

This study aimed to evaluate the perception of older adult patients prior to prosthetic rehabilitation and to analyze gender-based differences in their responses. Initially, patients completed a survey assessing their oral health perception before receiving treatment. Following pre-prosthetic surgical procedures and the placement of total or partial acrylic prostheses, the same survey was administered again. The results were used to compare psychological, aesthetic, and functional perceptions between male and female older adults before and after oral rehabilitation with total acrylic or removable partial prostheses.

According to national data, among the adult population in Mexico aged 20 to 99 years (206,951 individuals), 0.1% had lost all permanent teeth. Among adults under 65 years of age, the prevalence of total edentulism was 0.04%; in the 65-79 age group, it increased to 0.89%; and among those aged 80 and older, the rate rose to 2.48% <sup>[5]</sup>.

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Nearly 3% of adults aged 65 to 74 who access health services in Mexico are edentulous.

The Geriatric Oral Health Assessment Index (GOHAI) is a validated instrument designed to evaluate oral health across three dimensions:

1. Physical function, including eating, speaking, and swallowing.
2. Psychosocial function, encompassing concerns about oral health, self-image, health awareness, and social limitations due to oral conditions.
3. Pain or discomfort related to oral health status.

GOHAI can be applied at both the individual and population levels. At the individual level, it serves as a predictor of the need for comprehensive oral examination, providing insight into the patient's functional and psychosocial symptoms. At the population level, it offers a cost-effective tool for epidemiological surveillance of oral health issues among older adults<sup>[6]</sup>.

The instrument consists of 12 items rated on a Likert scale, with responses ranging from 1 to 5: always, almost always, often, seldom, and never<sup>[7]</sup>.

### Materials and Methods

The study population consisted of patients attending the School of Dentistry, Torreón Campus. The sample included 38 patients who were either completely edentulous or partially edentulous with fewer than 20 remaining teeth. Of these, 21 were men and 17 were women, ranging in age from 60 to 80 years. This was a longitudinal, comparative, and interventional study involving a gender-neutral sample. All participants signed an informed consent form.

Patients were recruited through the admissions clinic of the

School of Dentistry, where a clinical history was taken for each individual. The GOHAI survey was administered in person following anamnesis, diagnosis, and treatment planning. Upon agreeing to participate, each patient was informed about the procedures involved and the commitment required for treatment, including attending scheduled appointments and following postoperative instructions in cases involving surgical procedures or rehabilitation. Finally, participants signed the informed consent form.

After completing comprehensive oral rehabilitation, the GOHAI survey was administered again in person using an electronic form via the Forms platform, conducted on-site at the School of Dentistry, Torreón Campus. The post-treatment survey was identical to the pre-treatment version and included two fields for personal data and 12 multiple-choice questions related to clinical aspects of the patient's perception before and after oral rehabilitation. Each survey had an estimated completion time of no more than 15 minutes.

This project was approved by the Bioethics Committee of the School of Nursing at the Universidad Autónoma de Coahuila.

### Results

In the initial administration of the GOHAI survey, a total sample of 38 older adults was evaluated, consisting of 21 men (53% of the sample) and 17 women (47%), with a mean age of 70 years and a standard deviation of 6.76. As shown in Table 1, no statistically significant differences were found in the comparison of means and standard deviations using the two-sample t-test across the GOHAI domains and total scores by gender. The different domains yielded very similar values, except for the total score, which showed a difference of 1 point; however, this difference was not statistically significant between groups.

**Table 1:** P-values for the comparison of GOHAI domains and total score in the first application by gender

	Men		Women		P- Value
	Mean	Standard deviation	Mean	Standard deviation	
Total	4.86	3.72	5.94	3.54	0.356
Physical	2.00	1.82	2.11	1.71	0.845
Psychosocial	2.19	2.04	2.89	2.08	0.299
Pain	0.66	0.73	0.944	0.87	0.293

In the second administration of the GOHAI survey, the same sample of 21 men and 17 women was evaluated, with a mean age of 70 years and a standard deviation of 6.76. As shown in Table 2, no statistically significant differences were found in the comparison of means and standard deviations using the

two-sample t-test across the GOHAI domains and total score by gender. The various domains again showed very similar values, and the total score once more presented a difference of 1 point; however, this difference was not statistically significant between groups.

**Table 2:** P-values for the comparison of GOHAI domains and total score in the second application by gender.

	Men		Women		P-Value
	Mean	Standard desviation	Mean	Standard desviation	
Total	5.19	3.96	6.50	3.84	0.302
Física	2.00	1.82	2.11	1.71	0.845
Psicosocial	2.19	2.04	2.89	2.08	0.299
Dolor	1.00	1.14	1.50	1.29	0.213

### Discussion

This study compared the perception of older adults before and after comprehensive oral rehabilitation across genders, using the GOHAI survey as the assessment tool. Results from the first administration of the survey, conducted prior to rehabilitation, showed no statistically significant differences between male and female participants regarding their perception of oral health status and its impact on quality of

life. Similarly, the second administration of the survey, conducted after rehabilitation, revealed no significant gender-based differences in the perception of their improved oral health and its influence on quality of life.

Comparable findings were observed between our pre-rehabilitation GOHAI results and a study conducted in Mexico among older adults requiring dental care. That study reported that 87.3% of participants experienced psychological

discomfort related to their oral condition (concerns about the health of their teeth and other stomatological structures). However, both studies indicated that older adults generally perceive little to no difficulty in the biological and social functionality of their stomatognathic system, despite their self-reported concern about oral health <sup>[22]</sup>.

In contrast, a study conducted in Medellín found that women predominantly expressed dissatisfaction and discomfort with their oral condition, attributed to various biological and sociocultural factors that hinder their optimal social engagement <sup>[23]</sup>. This differs from our findings, where both genders showed minimal concern regarding physical aspects such as pain, placing greater emphasis on the psychosocial dimension and its impact on quality of life.

A 2019 study concluded that perceived quality of life is generally similar between men and women, although variations may arise due to gender roles. This aligns with the broader context of our research in the dental field, where both male and female older adults demonstrated comparable perceptions before and after oral rehabilitation <sup>[24]</sup>.

Statistical analyses from a 2021 study in Costa Rica highlighted differences in the relationship between Oral Health-Related Quality of Life, gender, and age. Female participants tended to report lower perceived oral health-related quality of life compared to males. This may be due to women's heightened concern for their health, rather than an actual difference in health status. Cultural and gender influences may play a role, supporting our recommendation to consider variables such as culture, socioeconomic status, and occupation when evaluating patient perception objectively <sup>[25]</sup>. Other studies conducted in 2016 concluded that prosthetic rehabilitation in older adults positively impacts self-perception, particularly among male patients <sup>[26]</sup>. However, our findings diverge from this, as female patients also reported similar levels of satisfaction regarding aesthetics and oral rehabilitation. This is consistent with a 2021 study published in the *Journal of Prosthodontics*, which found that prosthesis placement improves patients' quality of life, with results validated through the GOHAI instrument <sup>[27]</sup>. Likewise, our post-rehabilitation survey results indicated positive changes following treatment, although no significant gender-based differences were observed possibly due to the lack of consideration of patients' occupation and economic status during the study.

For future research, it is recommended to account for the occupation and socioeconomic status of older adult participants, as these factors significantly influence quality of life and may affect study outcomes. Another important limitation, compared to other studies, is the nationality of participants. Differences were observed when comparing results with studies conducted outside of Mexico, likely due to cultural, dietary, and other contextual factors. Most of these studies require larger sample sizes; therefore, future research should include a greater number of participants and ensure equal representation of male and female patients to allow for more balanced and objective sample analysis.

## Conclusion

Upon analyzing the perception of a sample of older adults before and after comprehensive oral rehabilitation across genders, as assessed through the GOHAI survey, this study concludes that the perception is similar between male and female older adults. In other words, both groups reported comparable symptoms prior to and following rehabilitative treatment. No statistically significant differences were found

across the dimensions evaluated in this study. A minimal difference was observed in the psychosocial domain, which did not reach statistical significance; this may be attributed to the fact that most female participants expressed discomfort with their appearance in relation to their social environment, unlike their male counterparts.

It is recommended that future studies include a larger sample size to obtain more specific and generalizable results.

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