



# Exploring the Habit of Denture Wearing in a Sample of the Lebanese Population: Prevalence and Impact

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## Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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## ABSTRACT

**Background:** Many people use their dentures continuously for aesthetic and functional reasons. The aim of this study was to evaluate the denture's continuous wearing in a sample of Lebanese population.

**Materials and Methods:** Two hundred ninety (161 women, 129 men; age range 40-80 years) were selected for this study and their denture's wearing habits were divided into three groups: a) group 1: regular nighttime denture removal, b) group 2: continuous denture use (daily and nighttime wearing), and c) group 3: irregular denture use. Descriptive statistics for patient age and gender and denture continuous wearing were calculated, and percent distributions were reported.

**Results:** Among the 290 patients, 85 (29.31%) wear their dentures continuously (group 2), 138 (47.58%) take them out at night (group 1), and 67 (23.10%) wear them irregularly (group 3).

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**Conclusion:** According to the present study, approximately one-third of patients consistently wear their dentures.

*Keywords: Denture; lebanese; population; aesthetic.*

## 1. INTRODUCTION

Dentures are removable oral appliances used by patients to replace missing teeth for both cosmetic/social and functional reasons (Ahmed Lone et al., 2021; AlSaggaf et al., 2024). In fact, by giving the patients the confidence to eat, talk, and laugh in social settings, they enhance their general quality of life (AlSaggaf et al., 2024; Satishkumar et al., 2021; Regis et al., 2013).

Back in 1967, the Academy of Denture Prosthetics recommended the night removal of dentures, and from then on, many studies focused on the side effects of the continuous wearing of dentures and concluded that complete dentures and removable partial dentures should not be worn continuously (Tautin, 1978).

Numerous articles discussed the connection between tissue alterations and continuous denture wear (Kouadio et al., 2022; Newton, 1962; Budtz-Jørgensen, 1974; Aoun and Cassia, 2016). Butcher and Mitchell noticed that after a week, there were noticeable alterations in the palatal glands of rhesus monkeys whose palates were covered, and the acini of these glands completely disappeared after three weeks and were replaced by dense connective tissue (Butcher and Mitchell, 1968). On the other hand, other researchers found that the degree of keratinization of the oral mucosa covered by dentures is inversely proportional to the amount of time dentures are worn; for them, keratinization was increased when dentures were removed regularly at night and the rest allowed the oral mucosa to recover (Sillevis Smitt, 1973; Al-Ani et al., 1966). Additionally, continuous denture wear has been found to be substantially linked to inflammatory changes of the denture-bearing mucosa (Newton, 1962; Budtz-Jørgensen, 1974; Aoun and Cassia, 2016; Aoun et al., 2015; Kabawat et al., 2014; Ribeiro et al., 2024). This was explained by the fact that placing the oral mucosa in constant contact with the denture base decreases the saliva's protective function and stops the mucosa from receiving enough oxygen, which lowers the mucosa's resistance to mechanical and microbial aggressions, mainly fungi, the most important of

which are *Candida albicans* (Newton, 1962; Budtz-Jørgensen, 1974; Aoun et al., 2015). Furthermore, a link has been found between continuous denture wearing and bone resorption (Ozan et al., 2013). Because of the continuous pressure on the soft tissues, which is subsequently transferred to the bone, many authors claim that wearing dentures day and night causes the remaining ridges to atrophy (Kouadio et al., 2022; Ozan et al., 2013).

The aim of the present study was to evaluate the denture's wearing in a sample of Lebanese denture wearers.

## 2. MATERIALS AND METHODS

This study was carried out in compliance with the Helsinki Agreement on Human Research. It was approved by the scientific committee of the Faculty of Dental Medicine of the Lebanese University, and the patients were informed that their data might be anonymously used for research purposes at a later stage, and their consent was obtained. Patients who were: 1) between the ages of 40 and 80; and 2) wearing an acrylic denture for more than a year were included in this study.

Two hundred ninety patients, 161 women and 129 men, meeting the inclusion criteria were selected, and their habit of denture's wearing was classified and noted as follows:

- Group 1: regular nighttime denture removal
- Group 2: continuous denture use (daily and nighttime wearing)
- Group 3: irregular denture use.

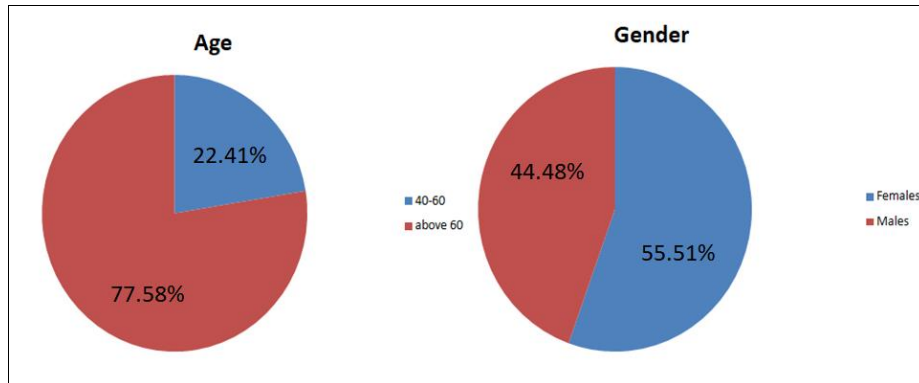
Descriptive statistics for patient age and gender and denture continuous wearing were calculated, and percent distributions were reported.

## 3. RESULTS

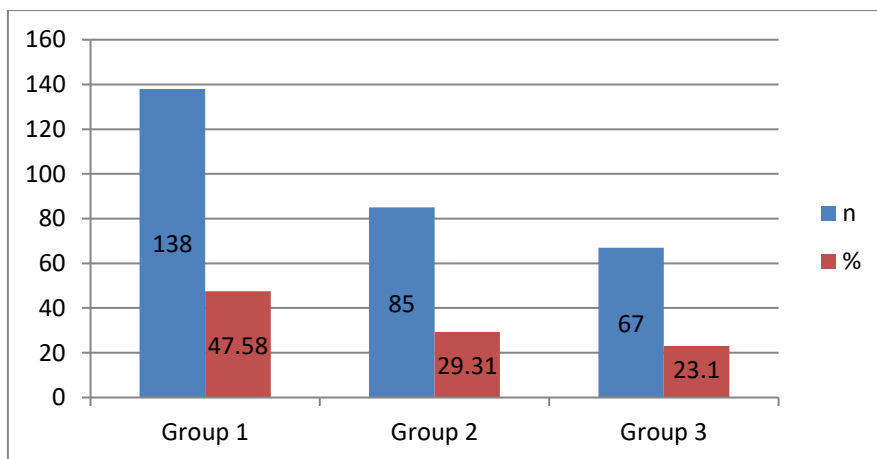
This sample of Lebanese population consisted of 290 acrylic denture wearers, 161 females (55.51%) and 129 males (44.48%). The patient's age ranged between 40 and 80 years, with a

mean of 64.25 years; out of the total 290 patients, 65 (22.41%) aged between 40 and 60 years, whereas the rest, 225 (77.58%), were older than 60 (Fig. 1).

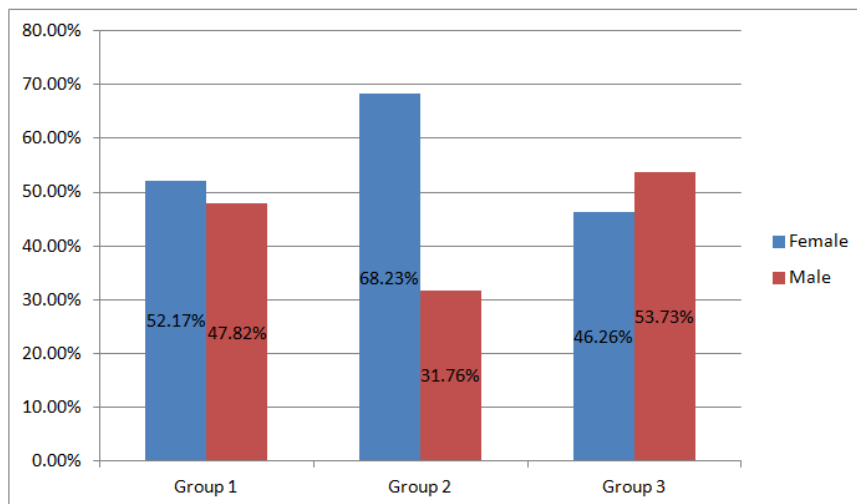
Of the 290 patients in this study, 85 (29.31%) wear their dentures continuously (group 2), 138 (47.58%) take them out at night (group 1), and 67 (23.10%) wear them irregularly (Fig. 2).



**Fig. 1. Percentage distribution of sample according to age and gender**



**Fig. 2. Percentage distribution of status of denture wearing**



**Fig. 3. Percentage distribution of status of gender in each group**

In terms of gender, women made up 52.17% (72 out of 138) of the patients in group 1, 68.23% (58 out of 85) in group 2, and 46.26% (31 out of 67) in group 3 (Fig. 3).

#### 4. DISCUSSION

Since preventive dentistry and health care in general are crucial for edentulous patients, dentures that rely on the underlying tissues for support must be kept in the best possible condition. It has been widely admitted that the denture continuous use (regular night and day wearing) can lead to tissue alterations and inflammatory changes of the denture-bearing mucosa and weaken the mucosa's defenses against mechanical and microbiological aggressions by interfering with saliva's protective role (Tautin, 1978; Aoun and Cassia, 2016). For that, and to keep these tissues healthy, patients should be advised on meticulous plaque control through a satisfactory denture cleaning (Szalewski et al., 2017; Ribeiro et al., 2019) and to avoid wearing dentures continuously; instead, they should be taken off at night or for extended periods of time every 24 hours (Tautin, 1978; Aoun and Cassia, 2016; Szalewski et al., 2017). While some dentists emphasize the significance of this habit to their patients, many do not advise them of its necessity.

Finally, there are certain limitations to the present study, which aims to assess the continuous denture usage in a sample of the Lebanese population. Because of the limited number of patients evaluated, definite conclusions must be delayed until future research validates these findings.

#### 5. CONCLUSION

According to the present study, approximately one-third of patients consistently wear their dentures. Patients should be dissuaded from continuously wearing their dentures to avoid many related side effects.

#### DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Authors hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

#### ETHICAL APPROVAL AND CONSENT

The study was approved by the scientific committee of the Faculty of Dental Medicine of

the Lebanese University, and the patients were informed that their data might be anonymously used for research purposes at a later stage, and their written consent was obtained.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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