

ORIGINAL RESEARCH

Impact of dentures on oral health-related quality of life in assisted living facility elders in Bathinda city, Punjab

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Received: 26 October, 2023

Accepted: 28 November, 2023

ABSTRACT

Background: Dentures can enhance older people's dental function and looks, but they may lower quality of life in terms of oral health. It is necessary to conduct more research to understand how wearing denture impacts overall health and wellbeing of residents of assisted living facilities. **Materials and Methods:** A self-administered, pretested questionnaire with two sections was used in a cross-sectional study with 487 residents in old-age homes in the city of Bathinda. The questionnaire's first section contains details on demographics, the length of residence in an old-age home, and information about caring for and using dentures. The questionnaire's Oral Health Impact Profile is the second component (OHIP). Using version 20.0 IBM SPSS Statistics, descriptive statistics, the Chi-square test, and correlation were utilized to present and analyse the data. Statistics were deemed significant at $P \leq 0.05$. **Results:** In this study, the total satisfaction rate for complete denture (CD) and removable partial denture (RPD) users with favourable responses was 21.4% and 23.7%, respectively. These results were statistically significant ($P=0.028$) and showed a positive correlation, between CD and RPD users. **Conclusion:** The overall satisfaction rate of RPD users was greater than the overall satisfaction rate of CD users, aesthetics mostly influences the satisfaction of dentures, and the overall OHIP for denture users who have worn them for one to five years was high.

Keywords: Assisted living facility, complete denture, dental care for aged, health-related quality of life, partial denture.

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INTRODUCTION

Human ageing is a multifaceted movement in growth and development across time, reflecting the species dynamic nature. [1] According to the World Health Organization, elderly people are those who are above 60. [2] The number of people over 60 is anticipated to reach 1.2 billion by 2025, with the ratio of elderly people to other age groups increasing exponentially globally. [3] Because ageing is unavoidable, caring for the elderly population is now crucial.

It is crucial to maintain and improve oral health because oral health is considered as a sign of elderly citizens quality of life and because oral ailments are intricate, advanced, and accumulated. Additionally, improved dental health supports elderly patients social networks, physical and mental ability, and self-confidence. [3] Root caries, attrition, periodontal

disease, missing teeth from previous neglect, poor alveolar ridge quality, poorly fitting dentures, mucosal lesions, oral ulcers, and dry mouth (xerostomia) are more common in the elderly. [4-7] The elderly may also be prevented from visiting a dentist due to barriers to oral health care such as fear and anxiety, illness, limited mobility, socioeconomic status, transportation, and negative attitudes about oral health. [7]

The diagnosis, treatment, and prevention of oral diseases in the elderly are the main goals of the dental specialty known as geriatric dentistry. The treatment of age-related oral disorders and dental care for elderly are the main topics of this speciality. The factors related to dentures that specifically affect the oral health-related quality of life (OHRQoL) of older people who wear removable dentures include denture

status, denture satisfaction, perceived loose denture, presence of oral pain, presence of oral ulcer, perceived halitosis, and perceived dry mouth. According to Kuo et al., improved denture satisfaction was significantly associated with an improvement in the OHRQoL of senior patients. [8]

In order to quantify the quality of life connected to oral health, a number of metrics have been developed, and these metrics have been used to evaluate patients' well-being and oral function. According to the Oral Health Impact Profile (OHIP), having dentures is a critical sign of poor oral health-related quality of life. Therefore, the study's objective was to determine how dentures affected elderly residents at assisted living facilities in Bathinda, Punjab, in terms of OHRQoL.

MATERIALS AND METHODS

Between July 2022 and October 2022, a cross-sectional questionnaire-based study was conducted among residents of old-age homes in the Bathinda City in Punjab, India. A total of 22 old-age homes were chosen, and 11 of them were included in the study using a straightforward randomization sample method. After receiving ethical approval to poll they were informed of the study's objectives and given the assurance that participation was voluntary and anonymous, which could help elicit the participants real viewpoints.

For the study, a total of 487 elderly residents between the ages of 45 and 90 were chosen using convenience sampling. By abiding by the World Medical Association Declaration of Helsinki's ethical principles, the participants' anonymity was protected. Each study participant provided their written informed consent. The study included all the participants who had given consent and were present on the day of survey. The participants were denture wears (CD or RPD) and the individuals who could read and write. The study eliminated participants with incomplete survey forms those who were intellectually challenged, and those who were in poor health (such as those with Parkinson's disease).

Two components of the self-administered, pretested questionnaire are in the regional tongue. Age, gender, length of stay in an elderly facility, and information on the care and use of dentures are all included in the

first section of the questionnaire (13 questions). The oral health profile is the subject of the second section of the questionnaire. Each item is graded on a severity scale of 1 to 5, with 1 denoting very frequently, 2 denoting moderately frequently, 3 denoting infrequently, 4 denoting scarcely ever, and 5 denoting never.

Version 20.0 of IBM SPSS Statistics for Windows. The analysis was carried out using software from IBM Corp., Armonk, New York, USA. Descriptive statistics, the Chi-square test, and correlation were utilised to present and analyse the data. Statistics were deemed significant at $P \leq 0.05$.

RESULTS

The study included a total of 487 participants, of whom 28.7% were men and 71.3% were women, 32.2% were between the ages of 56 and 65, and 32.2% had full dentures (CD) while 67.8% had removable partial dentures (RPD). About 48.3% of participants spent between one and five years in an old age home, 23% spent between six and ten years, 18.4% spent between eleven and fifteen years, and 10.3% spent between sixteen and twenty years [Table 1].

Table 2 details the habits and knowledge of seniors living in nursing homes, ranging in age from roughly 45 to 90, about the use and maintenance of their dentures. About 39.1% of research participants have had dentures for six to ten years, and 31% did not receive any instructions from their dentist on how to care for them. A little over 37.9% of participants cleaned their dentures once per day, 35.7% cleaned them twice per day, 24.1% cleaned them right after eating, and 2.4% never cleaned them. While 2.3% of participants use chemical solutions to clean their dentures, about 57% use a brush and paste. The majority of participants 88.5% keep their dentures in a water-filled container, whereas about 59.8% remove them every day at night.

The OHIP on denture type is shown in Table 3. Users of RPD reported an average level of psychological distress of 3.6 ± 0.95 , which was statistically significant ($P = 0.048$). The total OHIP 14 was insignificant when CD and RPD users were compared (0.411).

Table 1: Distribution of the participants according to age, gender, duration of their stay in assisted living facility and type of denture using

Variables	N (%)
Gender	
Male	140 (28.7)
Female	347 (71.3)
Age (years)	
45–55	50 (10.3)
56–65	157 (32.2)
66–75	90 (18.5)
76–85	151 (31.0)
86–95	39 (8.0)
Duration staying in an assisted living facility (years)	

1-5	235 (48.3)
6-10	112 (23.0)
11-15	90 (18.5)
16-20	50 (10.2)
Type of denture using	
Complete denture	157 (32.2)
Removable partial denture	330 (67.8)

Table 2: Knowledge and practices of denture usage and maintenance in elderly adults

Variables	N (%)
How long have you been using these dentures?	
< 1 year	45 (9.2)
1-5 years	173 (35.5)
6-10 years	190 (39.1)
>10 years	79 (16.2)
Have you received any instructions from the dentist regarding the maintenance of dentures?	
Yes	336 (69)
No	151 (31)
How many times do you clean your denture?	
Never	11 (2.3)
Once daily	185 (38.0)
Twice daily	174 (35.7)
Immediately after taking food	117 (24.0)
How do you clean your denture using?	
Water alone	129 (26.5)
Water and salt	67 (13.7)
Brush and paste	280 (57.5)
Chemical solutions	11 (2.3)
Do you remove your denture at night?	
No	34 (7)
Everyday	291 (59.8)
Sometimes	90 (18.5)
Occasionally	72 (14.7)
Where do you store the denture, if not in your mouth?	
I don't remove it	39 (8.0)
Inside a container with water	431 (88.5)
Inside a container without water	17 (3.5)

Table 3: Oral health impact profile on type of denture used

OHIP	Type of denture and duration of their usage	Mean±SD	P
Functional limitation	CD	3.03±0.69	0.204
	RPD	3.27±0.84	
Physical pain	CD	3.12±0.66	0.245
	RPD	3.33±0.85	
Psychological discomfort	CD	3.25±0.71	0.048*
	RPD	3.60±0.95	
Physical disability	CD	3.14±0.78	0.091
	RPD	3.50±0.96	
Psychological disability	CD	3.78±0.93	0.526
	RPD	3.93±1.03	
Social disability	CD	4.16±1.17	0.639
	RPD	4.03±1.17	
Handicap	CD	4.12±1.11	0.852
	RPD	4.07±1.14	
Total OHIP 14	CD	49.25±10.58	0.411
	RPD	51.51±12.46	

DISCUSSION

In order to develop patient-centered strategies in public health care and provide proper oral health care to those living in old age homes, it is essential to identify which factors actually affect their OHRQoL. The goal of the current study was to determine how dentures affected the quality of life of elderly residents of an assisted living facility in Bathinda City, Punjab, India. The findings of this study indicate that fair happiness with removable dentures depends on a number of factors, including aesthetics, retention, speaking ability, and mastication. Previous studies have discovered a link between elderly people's OHRQoL and their self-reported happiness with their dentures. [9] According to results from the condensed form of the OHIP, Stober et al. revealed that older patients' satisfaction with CDs was connected with OHRQoL in a 2-year longitudinal research. [10] Kuo et al. found a significant correlation between patient satisfaction with CDs and an improvement in their OHRQoL as measured by the OHIP-14. [11] In a cross-sectional study, Lee et al. found that elderly people's OHRQoL, as measured by the OHIP, may not be impacted by oral health problems if they are happy with their dentures. [12]

Contrary to the findings of a study by Bae et al., who found that RPD users had lower OHRQoL compared with CD users based on OHIP responses, CD users in the present study exhibited inferior oral health quality of life when compared to RPD users. [13] Wong et al. also demonstrated that, in a cohort of older Chinese persons living in the community, those with RPD had worse OHRQoL impairment (as assessed by GOHAI) than those with a CD. [14] These observations are most likely the outcome of users' irrational expectations for their teeth, as RPD users frequently make comparisons between their teeth and real teeth. On the other hand, researchers have discovered that CD users who have previously taken RPD may accept tooth loss and oral discomfort as a normal aspect of ageing. Therefore, compared to RPD users, CD users may be more accepting of decreased denture function. [13,15]

The OHRQoL of elderly people is impacted by the length of dentures. Contrary to Hadzipasic-Nazdrajic's findings, functional limitation, physical pain, psychological discomfort, physical disability, psychological impairment, social disability, and handicap were all common during the first five years of denture use. [16]

According to the Technical Group Report on Population Projections for India and States 2011–2036, there were approximately 34 million more old people in 2021 than there were in 2011 (according to the Population Census), and another 56 million more senior people are anticipated in 2031. [17] In a nation like India, where primary healthcare is unable to meet needs for oral health care and private dental treatment is out of reach for the majority of people, prevention is the only option. To prevent oral health difficulties

in the elderly, a number of techniques should be used, including denture maintenance, nutritional counselling, and oral health education. [18]

CONCLUSION

Users of RPD reported higher overall satisfaction levels than users of CDs, and there is a statistically significant difference between the two groups. Denture wearers who had worn their dentures for one to five years reported higher overall OHIP ratings, which was strongly influenced by aesthetics. A effective tool for evaluating the OHRQoL of older people wearing dentures is denture satisfaction.

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