Journal of Medical & Health Sciences Review

EVALUATION OF ANXIETY IN PATIENTS UNDERGOING COMPLETE DENTURE TREATMENT

Dr. Uzair Abu Bakar[1], Prof. Dr. Sajid Naeem[2], Dr. Maham Muzaffar[3], Dr. Fatima Liaqat[4], Dr. Noor Fatima[5], Dr. Farhan Abid Qureshi[6]

[1,3] FCPS Trainee Prosthodontics, Lahore Medical and Dental College (LMDC)
[2] Professor of Prosthodontics, Lahore Medical and Dental College (LMDC)
[4,6] Demonstrator Dental Materials, Lahore Medical and Dental College (LMDC)
[5] Demonstrator Prosthodontics Department, Lahore Medical and Dental College (LMDC)

ARTICLE INFO:

ABSTRACT

Background: Dental anxiety is a common psychological issue that significantly affects the adaptability and outcomes of prosthodontic treatment, especially in elderly patients undergoing complete denture procedures.

Objective: This study aims to evaluate how frequently anxiety occurs in patients undergoing complete denture treatment. It also focuses on identifying the common factors that contribute to this anxiety. Understanding these factors can help in addressing patient concerns more effectively. The goal is to improve patient comfort, cooperation, and treatment outcomes.

Methods: This cross-sectional study was conducted at the Prosthodontic Department of Lahore Medical and Dental College from 20 February 2025 to 20 June 2025. A total of 105 patients aged 40–75 years undergoing complete denture treatment were included through non-probability consecutive sampling. Anxiety was measured using the Modified Dental Anxiety Scale (MDAS). A structured questionnaire based on the Geriatric Oral Health Index and validated tools was used to identify anxiety triggers and contributing factors.

Results: The majority of patients exhibited moderate (10–15) or high ($\geq$16) levels of anxiety. Contributing factors included fear of dental instruments, impression-taking procedures, denture breakage, ill-fitting prostheses, and psychological conditions like gagging and breathlessness.

Conclusion: Dental anxiety is prevalent among patients undergoing complete denture treatment. Identifying key anxiety-inducing factors can help in customizing counseling and treatment protocols, resulting in improved prosthodontic outcomes and enhanced patient satisfaction.

INTRODUCTION

A prosthodontist is essential in ensuring patients receive quality dental care and maintains proper oral hygiene. This is especially important with elderly patients since they not only need longer clinical care, but they also need a more compassionate and patient-centered approach to their dental visits. These patients usually want something more than just a clinical dental treatment, they also want emotional support while attending to their understanding and psychological needs. When patients require complete dentures, their anatomical or psychological challenges, such as anxiety or depression, can hinder their adjustment to the devices. Regrettably, the psychological aspects are often neglected, which can greatly diminish the patient's ability to adapt socially and function comfortably with dentures. It is common for patients to experience dread and anxiety about putative prosthetic or surgical operations, strange dental tools, the smells and tastes associated with these materials, and the chance of ingesting dental substances. Fears of previous extractions, compounded by negative experiences, and shared tales about traumatic dental encounters often amplifies this response resulting in distress or dental phobia. Dental anxiety has been noted as the fifth most common form of anxiety experienced globally. It is quite remarkable to note that an estimated 15.4% of individuals consider complete denture treatment to be distressing. [18] Patients differ immensely in their psychological responses to dentures. They were famously classified by Dr. Milus M. House into four groups: philosophical, exacting, hysterical, and indifferent minds. Philosophical patients are cooperative, logical, and emotionally stable, trusting their dentist and accepting advice from professionals. In contrast, exacting patients are highly skeptical, demanding, and often in bad health, requiring more time and attention while expecting guaranteed results. Overly anxious and emotionally unstable, hysterical patients blame treatments for their health issues. Indifferent patients express the least interest in caring for their dentition, often needing to be treated as a result of familial coercion. They disregard most directions, attempt to shift responsibility on the dentist for their poor oral hygiene.[9] Patients' first encounters with a dentist make them more anxious as compared to those with past experiences, and while most first encounters are generally calming, unpleasant ones can lead to future visits.[10] Moreover, tension associated with broken dentures, improper fitting, or discomfort intensifies psychological stress.[11] Nevertheless, these fears can be alleviated after receiving treatment when patient perception aligns better with clinical reality. When older patients are given well-fitting dentures and properly cared for, it can greatly reduce stress associated with neuromuscular control and improve confidence.[12],[13] Proper care of the psychological aspects not only boosts treatment results but also enhances long-standing patient contentment.

Objectives

The primary objective of this study is to determine the frequency of anxiety among patients undergoing complete denture treatment. It also aims to identify the common contributing factors responsible for triggering this anxiety. Understanding these factors will help tailor patient care and improve treatment outcomes. Addressing dental anxiety can lead to better patient cooperation and satisfaction.

METHODOLOGY

This cross-sectional study was conducted at the Prosthodontic Department of Lahore Medical and Dental College from 20 February 2025 to 20 June 2025 following synopsis approval. A total of 105 patients were included in the study, with the sample size calculated using a 95% confidence level, 7% margin of error, and an expected frequency of 15.4%. The participants were selected through

a non-probability consecutive sampling technique.

Inclusion Criteria

The study included patients aged 40 to 75 years of both genders who were clinically diagnosed as needing complete denture treatment. This ensured the selection of individuals relevant to the study's objective. The criteria helped in accurately assessing anxiety levels related to denture procedures.

Exclusion Criteria

The exclusion criteria involved partially edentulous patients, as the study focused solely on complete denture cases. Patients with a history of psychological disorders were excluded to avoid confounding anxiety sources. Those needing prostheses due to facial trauma were also excluded to ensure anxiety measured was related specifically to denture treatment.

Data Collection Procedure

After obtaining ethical approval and informed consent, a total of 105 patients were recruited for the study. A standardized and validated questionnaire, derived from the Geriatric Oral Health Index and the Modified Dental Anxiety Scale (MDAS), was used to assess patient anxiety. The questionnaire was pilot-tested for clarity and its reliability was confirmed using Cronbach's alpha. It included key items such as previous denture experience, comfort level during dental visits, and specific fears related to dental instruments, impression materials, and procedures. Additional questions addressed anxiety-inducing factors like treatment cost, appointment duration, risk of denture breakage, gag reflex, breathlessness, and whether the procedure had been clearly explained. Patients were also provided with counseling during the visit to help alleviate anxiety, and their responses were carefully documented. All collected data were coded and entered into SPSS software for analysis.

Data Analysis

SPSS version 26.0 was used for statistical analysis. Frequencies and percentages were calculated for categorical variables such as gender, anxiety levels, and contributing factors. Mean ± SD was computed for age and MDAS scores. A p-value < 0.05 was considered statistically significant. Data were stratified by age, gender, socioeconomic status, and education level. Post-stratification chi-square tests were applied to assess effect modifiers.

RESULTS

A total of 105 patients undergoing complete denture treatment were included in the study. The mean age of the participants was 59.4 ± 9.8 years. Of these, 65 patients (62%) were female, and 40 patients (38%) were male. The Modified Dental Anxiety Scale (MDAS) was used to evaluate the level of dental anxiety among participants. The majority of patients (72%) experienced either moderate or high levels of anxiety.

Table 1: Baseline Characteristics

Characteristic	Value (n = 105)
Mean Age (years)	59.4 ± 9.8
Gender - Female (%)	62%
Gender - Male (%)	38%
Anxiety Level	
No or Minimal (5–9)	29 (28%)
Moderate (10–15)	49 (47%)
High / Phobia (16–25)	27 (25%)

The most frequently reported contributing factors to dental anxiety were fear of dental instruments and gagging during impression-making. The following table summarizes the key contributing factors identified:

Table 2: Common Contributing Factors to Dental Anxiety

Contributing Factor	Frequency (%)
Fear of dental instruments	68%
Gag reflex during impression	52%
Fear of denture breakage	46%
Fear of ill-fitting denture	40%
Financial concerns / appointment length	30%
Language and communication barriers	25%

Among the variables analyzed, lower educational status showed a statistically significant association with high anxiety (p = 0.03), indicating patients with less education were more likely to report higher anxiety levels. Previous negative dental experience had an even stronger and highly significant association (p < 0.01), reinforcing its impact as a key predictor of anxiety. In contrast, gender (p = 0.41) and age group (p = 0.28).

Table 3: Association Between Anxiety and Patient Characteristics

Variable	Association with High Anxiety	p-value
Lower educational status	Strongly associated	0.03
Previous negative dental experience	Strongly associated	<0.01
Gender	Not significant	0.41
Age group	Not significant	0.28

DISCUSSION

The present study reinforces existing evidence that dental anxiety is a prevalent and impactful issue among elderly patients undergoing complete denture treatment.[1,3,6] A moderate to high number of participants in this study showed significant anxiety that was strongly associated with fear of dental instruments, impression taking, gag reflex, anxiety about dentures fitting, their breakage, and appearance. These findings align with those of Singer et al. and Caltabiano et al, who documented that anxiety within prosthodontic patients is frequently a result of feeling discomfort during the procedure, lack of procedural grasp, and having negative past dental experiences.[7,8]

The educational status of the patients emerged as a strong predictor for dental anxiety, where patients with a lower literacy level showed greater anxiety. This is further corroborated by the works of Armfield et al. and Lin et al. that reported health literacy is very important for patient engagement; a weaker grasp tends to result in avoidance or resistance towards treatment.[6,19] Other contributing factors include prior dental trauma and postponement of dental visits due to fear, which calls attention to the prompt detection and treatment of anxiety. Dr. Milus M. House's philosophical, exacting, hysterical, and indifferent categories of patient psychology offer useful insights into explaining behavior patterns and customizing treatments.[9] Those in the exacting or hysterical groups needed extra reassurance and behavioral guidance to comply with treatment. This highlights the role of psychological profiling in dental care, especially in removable prosthodontics where patient collaboration and flexibility are pivotal. Counselors before treatment, coupled with thorough detailing of the procedure to be performed, proved calming for many patients and reduced their anxiety. Appukuttan et al. and Humphris et al. have noted how effective communication, treatment role modeling, and desensitization strategies help to mitigate dental anxiety and fear, reinforcing the importance of these interventions.[5,16] Elders and those with less education often experience greater anxiety and have difficulty

understanding instructions. Use of basic vocabulary alongside visuals and well-designed educational materials enhances comprehension and mitigates stress. Moreover, fear of pain related to breathing, gag reflex during procedures, inability to communicate, and exposure to foreign languages were contributory to anxiety. These results align with Freeman's work which stressed that understanding and culturally appropriate communication helps overcome most barriers and fosters patient trust.[20] Utilizing reliable instruments such as the MDAS (Modified Dental Anxiety Scale) during the first visit enables identification and tailored management of dental anxiety.[15] As emphasized in this study, there is a need to incorporate psychological assessment, communication, and counseling in routine prosthodontic practice. This approach not only fosters better cooperation and adaptability to dentures but also improves satisfaction and oral health among the elderly population.

CONCLUSION

A significant proportion of patients undergoing complete denture treatment experience moderate to high levels of anxiety, primarily due to procedural fears such as impression-taking, concerns about denture fit, breakage, and discomfort. Negative past dental experiences and fear of unfamiliar instruments further contribute to heightened anxiety, especially among elderly or less educated individuals. Communication barriers and lack of proper patient education also play a major role in amplifying psychological distress. The application of House's psychological classification helps in understanding diverse patient behaviors and customizing treatment approaches accordingly. Patients with exacting or hysterical tendencies often require additional time, reassurance, and emotional support. Pre-treatment counseling and clear procedural explanations have shown to significantly reduce anxiety levels and

improve patient cooperation. Tools like the Modified Dental Anxiety Scale (MDAS) are useful in identifying anxious individuals early in the treatment process.

REFERENCES

1. Pasad AK, Baviskar PS, Nadgere JB, Iyer JV. Evaluation of anxiety in patients undergoing complete denture treatment. J Indian Prosthodont Soc 2021;21(1):66-73.
2. Shah RJ, Diwan FJ, Diwan MJ, Chauhan VJ, Agrawal HS, Patel GC. A study of the emotional effects of tooth loss in an edentulous Gujarati population and its association with depression. J Indian Prosthodont Soc 2015;15(3):237-43.
3. Seenivasan M, Banu F, Inbarajan A, Natarajan P, Natarajan S, V AK, J K. The Consequence of Complete Dentures on Quality of Life of Edentulous Patients in the South-Indian Population Based on Educational and Socioeconomic Grades.Cureus 202012(2):e6923.
4. Bhandari AJ, Khokhani RM, Gangadhar SA, Joshi A, Mahagaonkar P, Dadwal ST. Psychology of geriatric dental patients - all we need to know.Pravara Med Rev2017;9:17–20.
5. Appukuttan DP. Strategies to manage patients with dental anxiety and dental phobia: Literature review.Clin CosmetInvestig Dent2016;8:35–50.
6. Lin W, Farella M, Antoun JS, Topless RK, Merriman TR, Michelotti A. Factors associated with orthodontic pain. J Oral Rehabil 2021;48(10):1135-43.
7. Singer R, Cardenas G, Xavier J, Jeanty Y, Pereyra M, Rodriguez A, Metsch LR. Dental anxiety and the use of oral health services among people attending two HIV primary care clinics in Miami. Public Health Rep 2012;127 Suppl 2(Suppl 2):36-44.
8. Caltabiano ML, Croker F, Page L. Dental anxiety in patients attending a student dental clinic.BMC Oral Health 2018; 18: 48.
9. Appukuttan DP. Strategies to manage patients with dental anxiety and dental phobia: literature review. Clin CosmetInvestig Dent 2016;8:35-50.
10. Choudhary S. Complete denture fracture – a proposed classification system and

its incidence in National Capital Region population: a survey. J Indian Prosthodont Soc 2019;19:307.

11. Koul A, Agarwal S, Singhal R, Tripathi S. Structurofunctional analysis based on postinsertion problems with complete dentures in Moradabad, North India: a cross-sectional study. J Indian Prosthodont Soc 2018;18:219.

12. Razak PA, Richard KM, Thankachan RP, Hafiz KA, Kumar KN, Sameer KM. Geriatric oral health: A review article. J Int Oral Health 2014;6:110–6.

13. Bandodkar K, Aras M. Psychological considerations for complete denture patients. J Indian Prosthodont Soc 2007;7:71.

14. Chander NG. Questionnaires in prosthodontic research. J Indian Prosthodont Soc 2019;19:1.

15. Corah NL. Development of a dental anxiety scale. J Dent Res. 1969;48(4):596.

16. Humphris GM, Morrison T, Lindsay SJ. The Modified Dental Anxiety Scale: validation and United Kingdom norms. Community Dent Health. 1995;12(3):143–150.17.

17. Slade GD. Derivation and validation of a short-form oral health impact profile. *Community* Dent Oral Epidemiol. 1997;25(4):284–290.

18. Chaudhary MAG, Khalid M, Adnan R, Uzair S, Khan RU, Kamran MF. Evaluation Of Anxiety In Patients Undergoing Complete Denture Treatment At Two Tertiary Care Hospitals In Rawalpindi And Islamabad . JRMC [Internet]. 2024 Mar. 28 [cited 2025 Jan. 24];28(1).Availablefrom:https://www.journalrmc. com/index.php/JRMC/article/view/2374

19. Armfield JM. Predicting dental avoidance among dentally fearful Australian adults. *Eur J Oral Sci.* 2013;121(4):240–246.

20. Freeman R. Communicating effectively: some practical suggestions. *Br Dent J.* 1999;187(5):240–244.