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Impact of Prosthodontic Treatment on Older Patients Pertaining to Their Self-Esteem and Functional Efficiency: A Questionnaire Based Study

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Abstract

Introduction: The aging global population has led to a rise in edentulism, significantly affecting the oral health, self-esteem, and functional efficiency of older adults. Prosthodontic interventions, such as complete dentures and implant-supported prostheses, play a critical role in restoring oral functionality and improving psychological well-being. However, challenges like chewing inefficiency, denture instability, and self-esteem issues remain significant concerns, necessitating targeted clinical and educational approaches.

Methodology: A cross-sectional study was conducted among 172 older patients in Maharashtra, India, receiving prosthodontic treatment. Data were collected through a structured 19-question close-ended questionnaire assessing self-esteem, functional efficiency, and satisfaction levels. Demographic details, including age, gender, education, and duration of denture usage, were also gathered. Statistical analysis, including descriptive statistics, Chi-square tests, and t-tests, was performed using SPSS software, with a significance level of $p < 0.05$.

Results: The results showed that participants experienced varying levels of satisfaction with their dentures. Positive outcomes were reported for aesthetics, such as smile (49.4%, P = 0.02) and appearance (51.2%, P = 0.03), which directly improved self-esteem and social confidence. However, challenges remained in functional efficiency. Chewing delays were reported by 58.1% (P = 0.01), while 46.5% experienced occasional denture instability (P = 0.03), impacting masticatory abilities and meal enjoyment. Educational qualifications significantly influenced satisfaction, with graduates (66.9%) demonstrating higher satisfaction due to better understanding and care practices.

Conclusion: This study highlights the significant impact of dentures on both functional and emotional well-being in older adults. While satisfaction with aesthetics contributed positively to self-esteem, challenges such as chewing inefficiency and instability persisted. Higher education levels were associated with

better denture care outcomes, underscoring the importance of targeted educational initiatives to bridge knowledge gaps. Advancing denture technology, enhancing patient education, and ensuring regular professional follow-ups are essential for improving clinical outcomes and quality of life for denture users.

Keywords: Satisfaction, Mastication, Self Esteem.

1. Introduction

The aging global population has brought about significant healthcare challenges, with the number of individuals aged 65 and older steadily increasing due to better medical treatment and amenities[1]. This demographic shift underscores the importance of oral health care, as it directly influences self-esteem, functional efficiency, and overall quality of life in older adults. Edentulism, or complete tooth loss, remains a prevalent issue in this age group, leading to difficulties in chewing, speaking, and maintaining social confidence. Prosthodontic interventions, such as complete dentures and implant-supported prostheses, have emerged as vital solutions to restore these essential functions and improve quality of life[2] [3].

Functional efficiency and the restoration of oral functions are primary goals of prosthodontic treatment. The development of tools such as the Oral Health Impact Profile (OHIP) has enabled clinicians to systematically evaluate the social and functional impact of oral conditions and their management[4]. Research by Steele et al. indicated that clinical factors, such as denture fit and design, directly affect patient satisfaction with oral functionality[5]. Similarly, the McGill Consensus Statement underscored the efficacy of mandibular two-implant overdentures as the standard of care for edentulous patients, offering superior outcomes compared to conventional options[6].

Despite advancements in prosthodontics, dissatisfaction among denture wearers persists due to issues such as construction faults, inadequate design, and underlying medical conditions[7] [8]. Patient satisfaction is a key indicator of the success of prosthodontic treatments. Studies have shown that addressing issues like poorly fitting dentures or providing new prosthetic solutions significantly enhances patient satisfaction[2]. Furthermore, Heydecke et al. highlighted the relationship between prosthodontic evaluations and patient-reported outcomes, particularly in the context of mandibular prostheses, both conventional and implant-supported[3]. These findings align with broader evidence that psychological and sociocultural factors, such as age, gender, and systemic health conditions, play critical roles in denture satisfaction[9].

Additionally, psychological acceptance of dentures is closely tied to an individual's self-image. Patients with positive self-perception tend to exhibit better acceptance and adaptability to dentures, as demonstrated in studies by Al Quran et al. and Silverman et al.[10] [11]. Studies have also shown that sociodemographic variables, including cultural background, bereavement, and previous denture experience, influence patient satisfaction with prosthetic treatments[12] [13].

These challenges call for evidence-based practices and tailored treatment approaches, as advocated by Carlsson, who emphasized the need to move beyond traditional dogmas in prosthodontics[14]. Research by Brunello and Mandikos further highlighted the importance of addressing construction faults and improving the design and fit of dentures to minimize complaints[8].

Self-esteem plays a pivotal role in the overall well-being of individuals, particularly among older adults who experience tooth loss. The loss of teeth and subsequent use of dentures can significantly impact an individual's psychological health, social interactions, and self-perception[15]. A positive self-image is closely tied to the acceptance and success of prosthodontic treatments, as demonstrated by Silverman et al., who emphasized that individuals with higher self-esteem exhibit greater adaptability and satisfaction

with dentures[11]. Research indicates that self-esteem among denture wearers is influenced by factors such as functional efficiency, aesthetics, and psychological acceptance of dentures[16]. Al Quran et al. found that psychological factors, including self-perception and emotional stability, are critical determinants in the acceptance of complete dentures[10]. Additionally, poorly fitting or aesthetically unsatisfactory dentures can exacerbate feelings of embarrassment, social withdrawal, and reduced confidence[1 2]. To address these concerns, prosthodontic interventions aim to improve not only oral functionality but also patient self-esteem and quality of life. Studies by Beck et al. further highlight that addressing complaints related to denture fit, design, and comfort can lead to significant improvements in both functional and emotional outcomes for patients[7].

2. Methodology:

This cross-sectional study was conducted among older patients receiving prosthodontic treatment in Maharashtra, India, to evaluate the impact of such interventions on their self-esteem and functional efficiency. Participants included patients aged 50 and above who were undergoing or had completed prosthodontic treatment and were willing to participate in the study. A structured, pre-tested, close-ended questionnaire consisting of 19 multiple-choice questions was developed to gather data on the patients' self-esteem, functional efficiency, and satisfaction with prosthodontic treatment. The questionnaire also collected demographic details such as age, gender, and duration of prosthodontic usage. The questions were designed to assess the psychological and functional impact of the treatment, including aspects of chewing efficiency, speech, and social confidence. The questionnaire was administered online via Google Forms or in person to maximize participation. Content validity was ensured through expert review, and reliability was verified via a pilot study conducted among 30 participants.

Descriptive statistics, including means, standard deviations, and percentages, were used to summarize demographic data and responses. Chi-square tests were performed to evaluate associations between demographic variables and treatment outcomes, while t-tests were employed to compare self-esteem and functional efficiency scores across different prosthodontic treatments. Data analysis was conducted using SPSS software, with a significance level set at $p < 0.05$. This methodology provides a comprehensive framework for understanding the impact of prosthodontic treatment on older patients, identifying key areas for improving clinical approaches and patient outcomes.

3. Results:

The survey provided a detailed analysis of satisfaction levels and masticatory abilities among 172 respondents using dentures, revealing significant insights into their experiences and areas for improvement. Demographic data showed that the majority of participants were aged between 60-69 years (34.9%), followed by 70-79 years (29.1%), 50-59 years (24.4%), and 80 years and above (11.6%). Male respondents constituted 58.1% of the sample, while 41.9% were female. In terms of denture use duration, 23.3% of participants had been using dentures for less than one year, 49.4% for 1-3 years, and 27.3% for more than three years. Educationally, 66.9% of respondents were graduates, while 33.1% had undergraduate qualifications, indicating a diverse but well-educated sample. The satisfaction levels revealed a generally positive perception of dentures, though challenges were evident. In terms of comfort, 46.5% of participants were satisfied, 37.8% were moderately satisfied, and 15.7% were not satisfied, with a statistically significant P-value of 0.04, indicating a notable level of contentment among most users. Regarding self-assurance and

self-consciousness, 43.6% reported being satisfied, 40.7% were moderately satisfied, and 15.7% were not satisfied, showing mixed experiences but without statistical significance (*P = 0.06*). **(Table 1)**

Table 1 : Self-Assurance and Self-Consciousness Among Study Participants

Response	Count	Percentage (%)
Satisfied	75	43.6
Moderately Satisfied	70	40.7
Not Satisfied	27	15.7

Satisfaction with smile was reported by 49.4%, with 34.9% moderately satisfied and 15.7% dissatisfied, supported by a significant P-value of 0.02. For appearance, 51.2% were satisfied, 33.1% moderately satisfied, and 15.7% dissatisfied, with a statistically significant P-value of 0.03, reflecting a generally positive perception of how dentures contribute to their look. **(Table 2)**

Table 2: Level of Satisfaction with Appearance among study participants

Response	Count	Percentage (%)
Satisfied	88	51.2
Moderately Satisfied	57	33.1
Not Satisfied	27	15.7

On professional performance, 43.6% were satisfied, 40.7% moderately satisfied, and 15.7% dissatisfied, with no statistical significance (*P = 0.07*), indicating variability in how dentures impact professional confidence. In terms of pleasure from food, 44.8% were satisfied, 37.8% moderately satisfied, and 17.4% dissatisfied, with a P-value of 0.05, suggesting that while many enjoy food with dentures, some challenges remain. Regarding difficulty chewing food, 40.7% were satisfied, 41.9% moderately satisfied, and 17.4% dissatisfied, with a P-value of 0.08, indicating room for improvement. Masticatory ability results highlighted significant functional challenges faced by denture users. For time taken to chew food, 41.9% reported “hardly ever,” 49.4% “occasionally,” and 8.7% “very often,” with a statistically significant P-value of 0.01, emphasizing the need for better efficiency in chewing. Irritability during meals was reported as “hardly ever” by 45.3%, “occasionally” by 41.9%, and “very often” by 12.8%, reflecting varied emotional experiences. For denture stability, 40.7% reported “hardly ever” experiencing instability, 46.5% said “occasionally,” and 12.8% said “very often,” with a significant P-value of 0.03, underscoring the importance of improved denture design to enhance stability. Embarrassment while eating was noted as “hardly ever” by 52.3%, “occasionally” by 34.9%, and “very often” by 12.8%, without statistical significance (*P = 0.06*), indicating a mix of confidence levels during meals. **(Table 3)**

Table 3: Embarrassment While Eating among study participants

Response	Count	Percentage (%)
Hardly Ever	90	52.3
Occasionally	60	34.9
Very Often	22	12.8

Meal interruptions due to denture issues were reported as "hardly ever" by 55.2%, "occasionally" by 34.9%, and "very often" by 9.9%, with a significant P-value of 0.02, highlighting the need for better functional reliability. Special food preparation was "hardly ever" required by 52.3%, "occasionally" by 37.8%, and "very often" by 9.9%, with a significant P-value of 0.03, showing that many users can manage typical diets but some face limitations. For the force required to swallow food, 46.5% reported "hardly ever," 41.9% "occasionally," and 11.6% "very often," with a significant P-value of 0.01, indicating challenges in swallowing for certain users. Swallowing larger pieces of food due to lack of proper fragmentation was noted by 44.8% as "hardly ever," 46.5% as "occasionally," and 8.7% as "very often," with a significant P-value of 0.05, showing that this issue affects a minority of participants. Discomfort while chewing was reported by 41.9% as "hardly ever," 49.4% as "occasionally," and 8.7% as "very often," suggesting occasional functional limitations for many users. **(Table 4)**

Table 4: Discomfort While Chewing among study participants

Response	Count	Percentage (%)
Hardly Ever	72	41.9
Occasionally	85	49.4
Very Often	15	8.7

Overall, the findings reveal generally high satisfaction in areas such as smile and appearance, supported by statistically significant results, while challenges persist in masticatory abilities, particularly regarding chewing efficiency, stability, and swallowing. These results highlight the need for targeted improvements in denture design and functionality to address the specific challenges faced by users, enhancing their overall quality of life.

4. Discussion:

This study provided valuable insights into the satisfaction levels, masticatory abilities, and self-esteem of denture users, emphasizing the impact of dentures on functional and emotional well-being. A significant aspect of the findings was the relationship between satisfaction, demographic variables, and educational qualifications, which played a crucial role in shaping the participants' overall denture experience. Participants who expressed satisfaction with their smile (49.4%) and appearance (51.2%) demonstrated higher levels of self-esteem, as these aspects directly influence social and emotional confidence (P = 0.02, P = 0.03). These findings align with Gupta (2021)[17], who emphasized the critical role of denture aesthetics in restoring psychological well-being among older adults, particularly those who had lost teeth due to trauma

or disease. Similarly, Soar (2021)[18] noted that oral rehabilitation plays a pivotal role in improving self-esteem, especially in populations where tooth loss leads to significant social withdrawal and emotional distress.

Despite these positive trends, dissatisfaction in some areas, such as professional performance (15.7% dissatisfied), suggests a need for additional support to help individuals adapt socially and professionally to denture use, a challenge also highlighted in Laurent (2021)[19].

Educational qualifications emerged as an important determinant of satisfaction and adaptability. Participants with graduate-level education (66.9%) reported higher satisfaction across most parameters compared to those with undergraduate education (33.1%). This indicates that higher education levels may contribute to better denture care understanding and access to resources, as suggested by Anders (2020)[20], who reported that individuals with higher education are more likely to seek regular dental follow-ups and adopt advanced care practices, resulting in better outcomes. Santhosh (2020)[21] similarly observed that education significantly influences individuals' ability to implement proper self-care regimens, such as maintaining denture hygiene and ensuring functionality. Conversely, participants with less education experienced greater dissatisfaction, potentially due to limited access to dental care resources and inadequate awareness, a gap that Kumar (2022)[22] identified as a common barrier in underserved populations. These findings underscore the need for targeted educational interventions to bridge the knowledge gap and empower individuals with actionable denture care information.

Masticatory abilities revealed significant functional challenges that impacted participants' overall satisfaction. Functional limitations, such as the time taken to chew food ($P = 0.01$) and lack of denture stability ($P = 0.03$), were prevalent among respondents. About 41.9% of participants reported “hardly ever” experiencing delays in chewing, while 49.4% noted this issue occasionally, and 8.7% experienced it very often. Smith (2021)[23] found similar trends, reporting that functional challenges, including prolonged chewing times, significantly affected quality of life in denture users. Stability issues were also noted, with 46.5% reporting occasional instability and 12.8% experiencing it frequently, emphasizing the importance of improved denture designs. Studies by Mehra (2022)[24] and Malamed (2018)[25] advocate for continuous advancements in denture technology, such as lightweight materials and better-fitting designs, to address these persistent issues.

Furthermore, 34.9% of participants occasionally interrupted meals due to denture problems, and 9.9% did so frequently ($P = 0.02$), reflecting functional unreliability as a common concern. Similar findings by Laurent (2021)[19] highlight that interruptions during meals can severely impact users' confidence and overall satisfaction.

Social aspects, such as embarrassment while eating, also played a significant role in participants' experiences. While 52.3% rarely felt embarrassed, 34.9% experienced occasional embarrassment, and 12.8% reported frequent embarrassment. This finding aligns with Kumar (2022)[22], who noted that social confidence is often undermined by perceived instability or aesthetics of dentures. Such issues highlight the importance of enhancing both the functional and aesthetic aspects of dentures, as supported by Gupta (2021)[17].

Another critical concern was the force required to swallow food, with 41.9% reporting occasional difficulty and 11.6% frequent difficulty ($P = 0.01$), an issue also identified by Smith (2021)[23] as a key barrier to enjoying meals.

In terms of clinical recommendations, studies by Santhosh (2020)[21] and Soar (2021)[18] highlight the need for regular professional follow-ups to assess and address users' functional and aesthetic concerns. Incor

porating simulation-based training for practitioners and using emerging technologies such as digital impressions could significantly improve the quality and fit of dentures, enhancing overall satisfaction. Additionally, integrating patient education into routine dental visits, as recommended by Malamed (2018)[25], could empower users to better manage their dentures, reducing dissatisfaction stemming from improper care.

5. Conclusion:

This study underscores the dual impact of dentures on functional and emotional well-being, highlighting the importance of satisfaction with aesthetics, such as smile and appearance, in boosting self-esteem. While many participants reported positive outcomes, challenges like chewing difficulties, instability, and occasional social embarrassment remain significant concerns.

Educational qualifications played a pivotal role, with higher education levels linked to better denture care practices and greater satisfaction. These findings emphasize the need for targeted educational initiatives to bridge knowledge gaps, particularly in underserved populations.

Advancing denture technology, enhancing patient education, and ensuring regular professional follow-ups are essential to addressing these challenges. Such efforts can significantly improve the quality of life for denture users, paving the way for further research into the long-term benefits of these interventions.

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