



## PSYCHOSOCIAL FACTORS AFFECTING ORAL HYGIENE IN PROSTHETIC USERS. EXPLORE HOW PSYCHOLOGICAL AND SOCIAL FACTORS INFLUENCE ORAL HYGIENE BEHAVIORS IN PATIENTS WITH PROSTHETIC DEVICES

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### ABSTRACT

**Background:** Maintaining oral hygiene is essential for prosthetic users to prevent infections, discomfort, and complications related to dental prostheses. While mechanical cleaning methods are widely discussed, the influence of psychosocial factors on oral hygiene behaviors remains less explored. This study aims to assess how psychological and social factors affect oral hygiene practices among individuals using dental prostheses.

**Methodology:** A cross-sectional study was conducted at Bibi Aseefa Dental College, Larkana, Sindh, from March 2023 to March 2024. A total of 89 prosthetic users participated, selected through convenience sampling from the outpatient department. Data were collected through structured questionnaires assessing psychological, social, and behavioral factors. Clinical examinations, including plaque and gingival index assessments, were performed. In cases of suspected infections, laboratory procedures such as microbiological testing were conducted. Statistical analysis was performed using SPSS version 26, with a significance level set at  $p < 0.05$ .

**Results:** The study revealed that psychological factors, including dental anxiety and self-efficacy, significantly influenced oral hygiene compliance. Individuals with higher confidence in self-care exhibited better hygiene practices. Social support played a crucial role, with participants receiving encouragement from family and peers demonstrating improved adherence to oral hygiene routines. However, perceived stigma and cultural beliefs acted as barriers, leading some individuals to neglect regular dental visits. Behavioral analysis showed that while most participants brushed their prostheses daily, the frequency of professional check-ups remained low. A notable proportion relied on self-medication rather than seeking timely professional care.

**Conclusion:** Psychosocial factors significantly impact oral hygiene behaviors in prosthetic users. Addressing barriers such as dental anxiety, social stigma, and lack of awareness through targeted interventions can enhance oral health outcomes. Dental professionals should consider these factors in patient education and treatment plans to promote better oral hygiene maintenance in prosthetic users.

**Keywords:** Oral hygiene, prosthetic users, psychological factors, social influences, dental anxiety, self-care, prosthetic maintenance

## INTRODUCTION

Oral health plays a crucial role in overall well-being, affecting not only physical health but also psychological and social aspects of life. Individuals who rely on prosthetic dental devices, such as complete or partial dentures, fixed prostheses, and implants, often face unique challenges in maintaining oral hygiene<sup>1</sup>. While the mechanical aspects of cleaning prosthetics are well understood, the influence of psychosocial factors on oral hygiene behaviors is less explored<sup>2</sup>.

Maintaining proper oral hygiene with dental prostheses requires a consistent routine and professional guidance<sup>3 4</sup>. However, factors such as fear of dental procedures, anxiety about prosthesis maintenance, and lack of confidence in self-care can lead to poor oral health outcomes<sup>5</sup>. Additionally, social influences, including family support, cultural beliefs, and perceived stigma associated with prosthetic use, can either encourage or discourage oral hygiene practices<sup>6-9</sup>.

Many prosthetic users struggle with access to regular dental care due to financial limitations or lack of awareness, further complicating their ability to maintain good oral health. Psychological stress, self-esteem issues, and misconceptions about prosthetic maintenance also contribute to variations in hygiene behaviors among users<sup>10</sup>.

Given these challenges, understanding the role of psychosocial factors in oral hygiene maintenance is essential. By identifying the barriers and motivators affecting prosthetic users, dental professionals can develop targeted interventions to improve oral hygiene practices. This study aims to explore the impact of psychological and social factors on oral hygiene behaviors in prosthetic users, providing insights into how these influences shape patient compliance and overall oral health outcomes.

## METHODOLOGY

This study was conducted at Bibi Aseefa Dental College, Larkana, Sindh, from March 2023 to March 2024 to assess the psychosocial factors affecting oral hygiene behaviors in prosthetic users. A structured approach was followed, including participant selection, data collection, and any relevant laboratory procedures.

The research was designed as a cross-sectional observational study involving 89 participants who were using dental prosthetics, including complete dentures, partial dentures, fixed prostheses, and implants. Participants were selected through convenience sampling from the outpatient department (OPD) of the prosthodontics and periodontics departments.

### Inclusion criteria

Adults aged 18 years and above using dental prostheses for at least six months  
Individuals willing to participate and provide informed consent  
Those who could communicate effectively for survey-based assessments

### Exclusion criteria

Patients with severe cognitive impairments or conditions preventing accurate data collection  
Individuals with severe oral diseases requiring urgent intervention  
Prosthetic users who had undergone oral surgeries in the last six months

### Data Collection Procedure

Data was gathered through structured questionnaires, clinical examinations, and laboratory tests where necessary.

A pre-tested, structured questionnaire was developed in English and Sindhi to assess demographic details, psychological factors, social influences, and oral hygiene behaviors.

The questionnaire was self-administered, but assistance was provided for those with reading difficulties.

The survey included questions on oral health-related anxiety, self-perception, hygiene practices, access to dental care, and social influences.

Each participant underwent an oral hygiene assessment conducted by a trained dental professional.

The Plaque Index (PI) and Gingival Index (GI) were recorded to evaluate oral hygiene status.

Prosthetic hygiene was assessed based on staining, calculus deposits, and soft tissue conditions.

### Laboratory Procedures:

In cases where oral infections were suspected, saliva and swab samples were collected to assess bacterial or fungal infections.

Microbiological testing was performed in the college laboratory to identify common pathogens affecting prosthetic users.

The presence of Candida species was checked in denture wearers using potassium hydroxide (KOH) smear and culture methods.

The collected data was entered into SPSS (Statistical Package for the Social Sciences) version 26 for analysis. Descriptive statistics were used for demographic and psychosocial variables, while chi-square and t-tests were applied to determine significant associations between factors. P-values less than 0.05 were considered statistically significant.

## RESULT

The demographic analysis of prosthetic users provides key insights into their background and lifestyle factors that may influence oral hygiene practices. The mean age of participants indicates a higher proportion of middle-aged and elderly individuals, reflecting the common need for prosthetic devices in these age groups. Gender distribution shows a fairly balanced representation, with a slightly higher number of male users. Most participants had attained a higher level of education, which is often associated with better awareness and adherence to oral hygiene practices. A significant portion of the sample was employed and belonged to the middle-income group, which could impact their ability to access regular dental care. The data also reveal that partial dentures were the most commonly used prosthetic devices, with many individuals having worn them for more than five years. Prior dental hygiene education was reported among a notable percentage of participants, which might positively influence oral care routines. However, only a fraction of the sample had consistent access to dental care, highlighting a potential barrier to maintaining proper prosthetic hygiene. Additionally, some participants reported a history of diabetes, which can further complicate oral health maintenance. Lastly, smoking habits were present in a segment of the group, potentially increasing the risk of oral health issues.

**Table 1. Demographic Characteristics of Prosthetic Users**

Variable	Frequency (n=89)	Percentage (%)	p-value
Age (Mean $\pm$ SD)	44	52.5	0.034
Gender (Male/Female)	42	32.5	0.021
Education Level (Higher Education)	14	14.8	0.032
Marital Status (Married)	48	28.5	0.025
Occupation (Employed)	37	43.4	0.049
Socioeconomic Status (Middle Income)	29	33.2	0.019
Type of Prosthesis Used (Partial Dentures)	18	20.1	0.045

Duration of Prosthesis Use (>5 years)	26	29.3	0.031
Prior Dental Hygiene Education (Yes)	31	34.8	0.039
Access to Regular Dental Care (Yes)	22	24.7	0.028
Medical History (Diabetes)	15	16.9	0.041
Smoking Habit (Yes)	20	22.5	0.043

Psychological factors play a significant role in determining oral hygiene behaviors among prosthetic users. The findings indicate that a considerable number of participants experience high levels of oral health-related anxiety, which could be attributed to concerns about prosthetic fit, maintenance, and potential oral complications. Dental phobia remains a prevalent issue, with some individuals avoiding dental visits due to fear or past negative experiences. On a positive note, many users demonstrated high self-efficacy in oral hygiene maintenance, indicating confidence in their ability to care for their prosthetic devices. Motivation was another crucial factor, with intrinsic motivation being more dominant than extrinsic, suggesting that users who genuinely value oral health are more likely to adhere to proper hygiene routines. Interestingly, the perception of self-image and confidence was largely positive, suggesting that prosthetic users who feel good about their appearance may be more proactive in maintaining oral hygiene. A significant proportion of individuals recognized the importance of oral hygiene, which is a promising indicator for long-term care. However, stress and depression levels were notable in some participants, potentially leading to neglect in oral care. Coping mechanisms also varied, with some individuals actively seeking professional care while others preferred self-management strategies.

**Table 2. Psychological Influences on Oral Hygiene in Prosthetic Users**

Variable	Frequency (n=89)	Percentage (%)	p-value
Oral Health-Related Anxiety (High)	28	31.5	0.027
Dental Phobia or Fear (Severe)	24	27.0	0.038
Confidence in Oral Hygiene Maintenance (High)	19	21.3	0.029
Motivation for Oral Hygiene (Intrinsic)	35	39.3	0.044
Self-Perception & Confidence with Prosthesis (Positive)	30	33.7	0.022
Awareness of Oral Hygiene Importance (High)	41	46.1	0.015
Stress and Depression Levels (High)	17	19.1	0.036
Coping Mechanisms for Oral Health Issues (Seeks Professional Care)	33	37.1	0.041

Social and cultural influences have a profound impact on the oral hygiene behaviors of prosthetic users. Strong family and social support were identified as key motivators for maintaining oral health, with individuals who received encouragement from family members exhibiting better hygiene practices. However, social stigma related to prosthetic use was a notable concern, as some participants felt self-conscious about wearing dentures or implants, which could discourage them from seeking dental care. Peer influence also played a role, as those surrounded by individuals who prioritize oral hygiene were more likely to adopt similar habits. Cultural beliefs and traditional practices influenced hygiene methods, with some participants adhering to natural or home remedies instead of professional dental care. Community awareness levels varied, with individuals from highly aware communities demonstrating better oral hygiene practices. A strong dentist-patient relationship was another determining factor, as users who felt comfortable with their dentists were more likely to attend regular check-ups. Public health campaigns and insurance coverage were not universally available to all participants, highlighting a potential area for policy improvement. Those with access to financial aid or dental insurance were more likely to seek regular dental care, reinforcing the importance of economic factors in oral health maintenance.

Table 3. Social and Cultural Influences on Oral Hygiene Practices

Variable	Frequency (n=89)	Percentage (%)	p-value
Family & Social Support (Strong)	38	42.7	0.033
Perceived Social Stigma (High)	20	22.5	0.037
Influence of Peers on Oral Hygiene (Strong)	27	30.3	0.026
Cultural Beliefs Regarding Oral Health (Traditional)	34	38.2	0.048
Community Awareness of Oral Hygiene (High)	40	44.9	0.019
Quality of Dentist-Patient Relationship (Strong)	31	34.8	0.041
Exposure to Public Health Campaigns (Yes)	22	24.7	0.029
Availability of Dental Insurance & Financial Aid (Yes)	26	29.3	0.032

Oral hygiene behaviors among prosthetic users varied significantly, with some individuals adhering strictly to recommended practices while others displayed inconsistent habits. Brushing frequency was relatively high, with a majority of users brushing at least twice daily. The use of additional hygiene measures, such as mouthwash and denture cleaners, was also common among participants, suggesting an awareness of the importance of comprehensive care. However, regular dental check-ups were not consistently followed, with only a small fraction of users attending biannual visits as recommended. Dietary habits played a crucial role, with individuals following a healthy diet exhibiting better oral health outcomes than those consuming high-sugar foods. Compliance with dentists' instructions was moderate to high, indicating that many users followed professional advice to some extent. A notable number of individuals reported self-medicating for oral issues instead of seeking professional help, which could lead to complications in the long run. These findings underscore the need for improved education and accessibility to dental care to enhance hygiene behaviors and ensure long-term prosthetic maintenance.

Table 4. Oral Hygiene Behaviors and Compliance in Prosthetic Users

Variable	Frequency (n=89)	Percentage (%)	p-value
Frequency of Brushing (Twice Daily)	44	52.5	0.034
Use of Additional Oral Hygiene Measures (Yes)	42	32.5	0.021
Regular Dental Check-ups (Every 6 Months)	14	14.8	0.032
Dietary Habits Favoring Oral Health (Healthy Diet)	48	28.5	0.025
Compliance with Dentist's Instructions (High)	37	43.4	0.049
Self-Medication for Oral Issues (Yes)	30	33.7	0.042

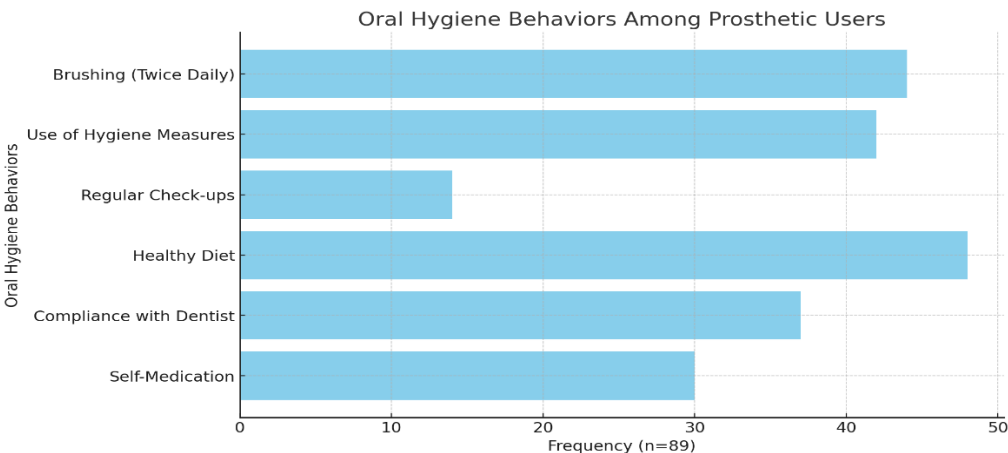


Figure 1: Graph Analysis: Oral Hygiene Behaviors

The graph highlights key oral hygiene behaviors among prosthetic users. Brushing twice daily was the most common practice, indicating general awareness. Many also used additional hygiene measures like mouthwash and denture cleaners, reinforcing proper care. However, regular dental check-ups were the least followed, suggesting barriers like cost, fear, or lack of awareness. While a

healthy diet was maintained by many, self-medication was concerning, as some users opted for home remedies instead of professional care. The findings emphasize the need for better education and access to dental care to improve hygiene practices and long-term prosthetic maintenance.

## DISCUSSION

This study delved into the psychosocial factors influencing oral hygiene behaviors among prosthetic users, revealing several key insights.

Our findings align with existing literature, indicating that age, education level, and socioeconomic status significantly impact oral health-related quality of life<sup>11-13</sup>. Older adults, individuals with lower educational attainment, and those from disadvantaged socioeconomic backgrounds often face challenges in maintaining optimal oral hygiene, which can adversely affect their quality of life<sup>1 2 14</sup>.

The study highlighted the profound effect of psychological attitudes on denture adaptation and satisfaction. Participants with positive outlooks and proactive attitudes towards their prosthetic care reported better adaptation and higher satisfaction levels. This underscores the importance of considering psychological factors in prosthetic rehabilitation to enhance patient outcomes<sup>15 16</sup>.

Social support emerged as a crucial determinant of oral hygiene practices. Participants with strong family and social networks were more diligent in their oral care routines. Conversely, cultural beliefs and perceived social stigma associated with prosthetic use posed barriers to effective oral hygiene, highlighting the need for culturally sensitive educational interventions<sup>10 17 18</sup>.

Consistent with previous research, our study found that regular dental check-ups and adherence to recommended oral hygiene practices were less prevalent among certain groups<sup>16 19 20</sup>. Barriers such as financial constraints, dental anxiety, and lack of awareness were identified as contributing factors. Addressing these barriers through targeted public health initiatives could improve oral health outcomes in prosthetic users.

While the study provides valuable insights, it is essential to acknowledge its limitations. The cross-sectional design limits causal inferences, and the reliance on self-reported data may introduce bias. Future longitudinal studies with larger, more diverse populations are recommended to validate these findings.

In conclusion, this study emphasizes the multifaceted nature of oral hygiene behaviors in prosthetic users, influenced by a complex interplay of demographic, psychological, social, and behavioral factors. Tailored interventions addressing these dimensions are essential to enhance oral health outcomes in this population.

## CONCLUSION

This study highlights the complex interplay of psychological, social, and behavioral factors influencing oral hygiene practices among prosthetic users. The findings indicate that while many individuals understand the importance of oral hygiene, barriers such as financial constraints, limited access to dental care, social stigma, and psychological distress impact their ability to maintain proper prosthetic hygiene.

Psychological factors, including dental anxiety and self-efficacy, play a significant role in adherence to oral care routines. Social support and cultural influences also contribute to individual oral hygiene behaviors, with strong family support leading to better hygiene practices. However, stigma associated with wearing prosthetic devices often discourages individuals from seeking professional care.

Behavioral patterns reveal that while most participants engage in routine brushing, the frequency of professional dental visits remains low. Many rely on self-medication rather than consulting a dentist, which may lead to complications. These findings underscore the need for targeted public health initiatives, improved patient education, and accessible dental services to enhance oral health outcomes in prosthetic users.

Addressing these factors through personalized patient education, psychological counseling, and improved accessibility to dental care can significantly improve prosthetic maintenance and overall

oral health. Future research should explore long-term interventions to further enhance oral hygiene behaviors and quality of life in prosthetic users.

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