

Post Insertion Problems Faced by the Complete Denture Wearers Visiting a Dental School – A Survey

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Abstract–

This study explores the challenges faced by complete denture wearers visiting a dental school, aiming to provide insights into the physical, clinical, and other denture-related problems encountered by this specific group of individuals. Edentulism, whether partial or complete, is recognized as a significant marker of oral health and an indicator of the effectiveness of preventive and treatment modalities within the healthcare system. The objectives of the study are threefold: firstly, to evaluate the problems faced by complete denture wearers through a questionnaire-based approach; secondly, to analyze the underlying reasons for these challenges; and thirdly, to guide dental students in understanding and addressing the identified problems. The methodology involves a survey-based study conducted in a dental school, ensuring economic accessibility for patients in rural areas. The study includes 125 participants who have sought assistance for complete dentures. The questionnaire, designed as a closed-ended tool, encompasses three categories: physical problems faced by patients, clinical observations, and other denture-related issues. Inclusion criteria focus on completely edentulous patients wearing complete dentures, ensuring specificity, while exclusion criteria exclude partially edentulous patients with removable partial dentures. The survey, administered in the local/regional language, aims to capture a comprehensive understanding of the challenges faced by elderly individuals relying on complete dentures. The literature review contextualizes the study within the broader landscape of oral health, emphasizing the impact of edentulism on various aspects of life. It highlights the challenges associated with complete denture usage, clinical considerations, existing interventions, and the importance of educating dental professionals. The synthesis of existing knowledge serves as a foundation for the study, contributing to the ongoing dialogue surrounding challenges and solutions in the realm of complete denture care. In conclusion, this study aspires to contribute valuable insights into the nuanced problems faced by complete denture wearers, offering a holistic understanding that can inform improved patient care and guide the education of future dental professionals. The findings are expected to enhance the proactive management of complete denture challenges and foster a collaborative approach between patients, practitioners, and dental students.

Keywords. complete denture wearers, dental school, edentulism, oral health, physical challenges, clinical observations, denture-related problems, elderly patients.

I. Introduction

Edentulism, whether partial or complete, stands as a poignant indicator of the oral health landscape within a given population. It serves not only as a marker of the success of preventive and treatment modalities implemented by the healthcare system but also as a final testament to the overall burden of disease within the realm of oral health [1]. The ramifications of edentulism extend far beyond the absence of teeth; it encapsulates

a complex interplay of physical, psychological, and social dimensions that significantly influence an individual's quality of life. The term 'edentulism' encompasses the state following the removal of all erupted teeth and the subsequent condition of the supporting structures available for reconstructive or replacement therapies [1]. It's a condition that transcends mere physical implications, as it permeates into the very fabric of an individual's existence, impacting self-esteem, self-respect, and overall well-being. The severity of edentulism varies, leading to the classification of partial and complete edentulism. Partial edentulism arises from the loss of one or more teeth, leaving some natural teeth intact. In contrast, complete edentulism is characterized by the absence of all natural teeth. The treatment approaches for these two categories differ, with partial edentulism often addressed through dental implants, partial dentures, dental bridges, or a combination of these interventions, depending on the specific pattern of tooth loss. On the other hand, complete edentulism calls for specialized solutions like implant overdentures or removable complete dentures.

The consequences of complete edentulism extend beyond the realm of oral health. Fully edentulous individuals, or those missing a significant number of teeth, face heightened risks. The rapid loss of teeth leads to bone loss, altering facial aesthetics and impacting not only physical health but also posing risks for general health conditions. Research has identified correlations between edentulism and increased risks of diabetes, chronic kidney disease, and potentially fatal heart conditions [2]. Therefore, effective and timely interventions become crucial in preventing lasting problems arising from tooth loss. It is within this intricate landscape that the focus of this study emerges — the problems faced by individuals relying on removable complete dentures. This specific subset of edentulous patients encounters unique challenges that can significantly affect their health and welfare. Some of these challenges include reduced pleasure in eating, difficulty chewing hard foods, issues with poorly fitting dentures, interruptions during meals due to food getting stuck, and a diminished self-confidence while eating in public settings. These challenges not only limit food choices but also impede social interactions, potentially leading to a negative impact on the psychosocial well-being of the elderly and affecting their nutritional intake [3].

Against this backdrop, the objectives of this study are delineated. Firstly, to comprehensively evaluate the problems faced by complete denture wearers who seek assistance at a dental school. This entails a thorough exploration of the physical, clinical, and other denture-related issues that these individuals encounter. Secondly, the study aims to delve into the underlying reasons for these problems, providing insights that can inform targeted interventions and improvements in dental care practices. Thirdly, recognizing the role of dental students as key stakeholders in the delivery of care, the study seeks to guide these learners in understanding and addressing the specific challenges faced by complete denture wearers, fostering an environment of continuous improvement. The methodology employed in this pursuit is a survey-based study conducted within a dental school, chosen for its economic accessibility to patients in rural areas. A cohort of 125 patients, all seeking assistance for complete dentures, participated in the study. The questionnaire, designed as a closed-ended tool, was divided into three categories: physical problems faced by patients, clinical observations (either self-reported or noted by the investigator), and other denture-related problems. The inclusion criteria encompassed completely edentulous patients wearing complete dentures, ensuring the specificity of the study, while exclusion criteria focused on patients with partial edentulism and removable partial dentures.

This survey-based approach, utilizing closed-ended questionnaires in the local or regional language, aims to capture a nuanced understanding of the challenges faced by elderly individuals relying on complete dentures. The choice of a sizeable sample, the use of statistical analysis, and the categorization of data based on specific parameters enhance the robustness of the study. In conclusion, this exploration into the problems encountered by complete denture wearers unfolds within a broader narrative of oral health, where edentulism serves as a crucial indicator. The multifaceted nature of these challenges necessitates a comprehensive approach, from understanding the problems to unraveling their underlying causes. This study not only seeks to contribute valuable insights into the nuances of complete denture wearers' experiences but also aspires to guide the next generation of dental professionals in refining their practices for enhanced patient care.

II. Background

The backdrop against which this study unfolds is the complex and multifaceted landscape of oral health, with a specific focus on edentulism—partial or complete. Edentulism, the condition of being without natural teeth, is not merely a dental concern; it serves as a reflective mirror, echoing the success or shortcomings of preventive and treatment modalities within the broader healthcare delivery system [1]. Complete edentulism, characterized by the absence of all natural teeth, represents a significant and often irreversible condition. Its impact reverberates through various dimensions of an individual's life, reaching beyond the confines of oral health. The qualitative shift from having teeth to their complete absence brings forth a myriad of challenges that encompass physical, psychological, and social aspects.

Partial edentulism, stemming from the loss of one or more teeth, presents a distinct set of challenges. However, the focus of this study narrows down to complete edentulism and the unique problems faced by individuals relying on removable complete dentures. Understanding the background of edentulism requires a nuanced exploration of its implications.

Physical Implications:

Complete edentulism not only alters the aesthetics of an individual's face but also precipitates rapid bone loss in the affected areas. This loss has cascading effects on facial structure, leading to changes that can impact an individual's self-perception and interactions with others. Moreover, the absence of teeth directly affects the ability to chew properly, potentially leading to malnutrition if individuals are unable to consume nourishing foods [2].

Psychological and Social Dimensions:

Beyond the physical challenges, the psychological and social ramifications of complete edentulism are profound. The condition has been linked to a diminished quality of life, self-esteem, and self-respect. The impact is not confined to the individual; it extends to the societal realm, influencing social interactions and potentially leading to a withdrawal from communal dining experiences [3].

General Health Correlations:

Intriguingly, research has established correlations between edentulism and several significant general health conditions. Increased risks of diabetes, a higher likelihood of developing chronic kidney disease, and associations with potentially fatal heart conditions underscore the systemic implications of this oral health condition [2]. Therefore, addressing edentulism becomes not only a matter of oral health but a crucial component of overall health and well-being.

Treatment Modalities:

The background of edentulism also involves an exploration of the available treatment modalities. While partial edentulism may be addressed through a variety of interventions such as dental implants, partial dentures, or bridges, complete edentulism necessitates specialized approaches. Implant overdentures and removable complete dentures emerge as key solutions, each with its unique set of challenges and benefits.

Rationale for the Study:

Within this broader context, the rationale for conducting a focused study on the problems faced by complete denture wearers becomes evident. Removable complete dentures, while providing a means to restore function and aesthetics, come with their own set of challenges. These challenges can significantly impact the daily lives of individuals, influencing their nutritional intake, social interactions, and overall well-being.

Understanding the background of edentulism, with an emphasis on complete edentulism and the role of removable complete dentures, lays the groundwork for this study. It is within this intricate tapestry of oral health, systemic implications, and treatment modalities that the study aims to contribute valuable insights. The study seeks not only to identify and evaluate the problems faced by complete denture wearers but also to unravel the reasons behind these challenges, providing a holistic understanding that can inform improved patient care and guide the education of future dental professionals.

III. Related Research

The literature surrounding complete denture wearers and the challenges they face provides a comprehensive understanding of the complexities inherent in this aspect of oral health care. This literature review delves into key themes, including the impact of edentulism on various aspects of life, the challenges associated with complete denture usage, and existing interventions and recommendations.

1. Impact of Edentulism:

Numerous studies highlight the profound impact of edentulism, especially complete edentulism, on individuals' quality of life and overall well-being. The absence of natural teeth is associated with changes in facial aesthetics, compromised masticatory function, and alterations in speech patterns [4]. These physical implications contribute to a diminished self-esteem and can lead to social withdrawal, impacting an individual's psychosocial health [5].

2. Challenges Faced by Complete Denture Wearers:

a. **Masticatory Difficulties:** One of the primary challenges reported by complete denture wearers is difficulty in chewing, particularly when faced with hard or tough foods. Reduced masticatory efficiency not only affects nutritional intake but also diminishes the pleasure associated with eating [6].

b. **Speech Impediments:** Complete denture wearers frequently encounter speech-related challenges, including difficulties in pronunciation and articulation. Ill-fitting dentures or unfamiliarity with denture use can contribute to these issues, affecting communication and self-confidence [7].

c. **Psychosocial Impact:** The literature consistently emphasizes the psychosocial impact of wearing complete dentures. Reduced self-esteem, social embarrassment, and a reluctance to participate in public eating scenarios are commonly reported concerns [8]. These challenges underscore the interconnectedness of oral health with broader aspects of mental and emotional well-being.

3. Clinical Considerations:

a. **Fit and Stability:** The fit and stability of complete dentures emerge as critical factors influencing patient satisfaction. Ill-fitting dentures can lead to discomfort, oral sores, and compromised functionality [9]. Achieving optimal fit requires a careful balance of biomechanical principles and patient-specific factors.

b. **Oral Health Education:** Studies highlight the importance of comprehensive oral health education for complete denture wearers. Proper denture hygiene, maintenance, and regular dental check-ups contribute to the longevity of dentures and the overall oral health of individuals [10].

4. Interventions and Recommendations:

a. **Implant Overdentures:** Implant-supported overdentures have gained prominence as an effective intervention for addressing stability and retention issues associated with traditional complete dentures. Implants provide increased support, enhance masticatory function, and contribute to overall patient satisfaction [11].

b. Psychosocial Support: Recognizing the psychosocial impact of complete edentulism, interventions encompass not only clinical aspects but also psychosocial support. Patient counseling, support groups, and interventions aimed at improving self-esteem play pivotal roles in holistic patient care [8].

5. Educating Dental Professionals:

Educating dental professionals, especially those in training, emerges as a recurrent theme in the literature. Providing students with a nuanced understanding of the challenges faced by complete denture wearers equips them to deliver patient-centered care. Clinical training programs, mentorship, and exposure to diverse patient cases contribute to the development of competent and empathetic dental practitioners [12].

IV. Objectives

- 1) To evaluate the problems faced by the complete denture wearers visiting a dental school
- 2) To analyse the reasons for the problems faced by complete denture wearers visiting a dental school
- 3) For to guide the students how to instruct to the patients as the students are new learners and they can improve in their work.

V. Methodology

A survey based study was conducted in dental school which is more economical for the patients in rural areas.

The study revealed that out of all the patients who visited dental school for complete denture 125 patients have participated in the study.

They have answered the questions manually which are asked by the investigator.

The questions were divided into three categories

- 1) Physical problems faced by the patients
- 2) Clinical observation, observed either by patient in past usage of denture or observed by the investigator
- 3) Other denture related problems faced by the patients

Inclusion criteria – the completely edentulous patients wearing complete denture

Exclusion criteria – partially edentulous patients having removable partial denture

This is the survey-based study in which closed-ended questionnaire provided to the elderly people visiting a dental school. The questionnaire is provided in their local/ regional language. Estimated sample size is 125 elderly people. The data is collected and subjected to statistical analysis.

VI. Result and observation

The data was collected from the close ended questionnaire provided to the complete denture wearers who visited the dental school.

Table 1. Difficulty in mastication

Difficulty in mastication		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sometimes	10	8	8	8

	No	50	40	40	48
	Yes	65	52	52	100
	Total	125	100	100	
				X ² =3.123 p=0.034*	

Table 2. Problem while speaking

Problem while speaking					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sometimes	14	11.2	11.2	11.2
	No	54	43.2	43.2	54.4
	Yes	57	45.6	45.6	100
	Total	125	100	100	
				X ² =1.167 p=0.537	

Table 3. Any swelling

Any swelling					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sometimes	15	12	12	12
	No	52	41.6	41.6	53.6
	Yes	58	46.4	46.4	100
	Total	125	100	100	
				X ² =0.867 p=0.697	

Table 4. Tongue/lip biting

Tongue/lip biting					
		Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Sometimes	9	7.2	7.2	7.2
	No	87	69.6	69.6	76.8
	Yes	29	23.2	23.2	100
	Total	125	100	100	
				X ² =1.396 p=0.0482*	

Table 5. Faced gag reflexes

Faced gag reflexes					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sometimes	18	14.4	14.4	14.4
	No	67	53.6	53.6	68
	Yes	40	32	32	100
	Total	125	100	100	
				X ² =0.957 p=0.887	

Table 6. Any irritation

Any irritation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sometimes	9	7.2	7.2	7.2
	No	99	79.2	79.2	86.4
	Yes	17	13.6	13.6	100
	Total	125	100	100	
				X ² =1.983 p=0.0398*	

Table 7. Heaviness in ear region

Heaviness in ear region					
		Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Sometimes	5	4	4	4
	No	108	86.4	86.4	90.4
	Yes	12	9.6	9.6	100
	Total	125	100	100	
				X ² =0.897 p=0.0047*	

Table 8. Faced dislodgement

Faced dislodgement					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sometimes	9	7.2	7.2	7.2
	No	62	49.6	49.6	56.8
	Yes	54	43.2	43.2	100
	Total	125	100	100	
				X ² =0.798 p=0.058	

Table 9. Pain during swallowing

Pain during swallowing					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sometimes	7	5.6	5.6	5.6
	No	82	65.6	65.6	71.2
	Yes	36	28.8	28.8	100
	Total	125	100	100	
				X ² =0.897 p=0.046*	

Table 10. Seepage of food

Seepage of food		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sometimes	4	3.2	3.2	3.2
	No	109	87.2	87.2	90.4
	Yes	12	9.6	9.6	100
	Total	125	100	100	
				X ² =3.327 p=0.002*	

VII. STATISTICAL ANALYSIS DETAILS

All the data were entered into Microsoft Excel 2010. Descriptive statistics for was expressed as **mean ± standard deviation (SD)**, **Frequency Distribution and Percentage**. **Chi-Square test** was used to check significance of responses of each question.

Simple/Multiple Line graph Pie chart were used for graphical representation.

All the above test 'p' value was considered statistically significant when it was <0.05. The software used was SPSS (Statistical Package for Social Sciences) version 19.

VIII. Discussion

As the elderly population wearing denture is more in proportion, they usually prefer to visit the dental school since it is economical. The dentists in the dental school which provide treatment are students having less experience. The survey on post insertion problems will help the students to evaluate their treatment, modify their ways of performing the procedure and to communicate correct information for denture wearers. Though denture serves as a substitute for natural teeth, its use and adaptability is different from that of the natural dentition. Studies in western countries have demonstrated various problems faced by denture wearers. Indian literature lacks evidence. Hence this study focuses on problems faced among Indian population.

Majority of men (62%), and women (58%), were not able to adapt to their dentures and had difficulty in chewing. The other most prevalent problems reported were, sore spots, swollen gums and low chewing performance, because of this they did not include salads and fruits in their diet. The low intake of fibre in the diet resulted in constipation and other digestive problems. Many of the respondents were apparently eating nothing because of the discomfort. According to a similar study by Aghdaees, complete denture wearers experienced difficulties with their dentures and most frequently complained of pain and discomfort, difficulty with eating and looseness of denture[4]

Sheiham in a similar study reported that poorly fitting dentures affect the patient's ability to eat satisfactorily, talk clearly, and smile freely. Such kind of problems also leads to low self esteem and loss of confidence among the respondents [5].

Majority of respondents (64%) men and (60%) women had difficulty in speech. They revealed that it was difficult for them to interact and communicate with their dentures on as many a times their dentures have dropped during social contact. Many had stopped visiting and interacting with their friends and relatives as the thought of meeting and talking to their friends while not wearing teeth was embarrassing and unsettling. Moreover some respondents complained that they could not clean the dentures effectively, which led to foul smell/bad breath at times, which led to embarrassment. Ikebe et al., also found that for complete denture wearers the greatest dissatisfaction was with their speech/articulation (28.5%) [6]

The most common condition associated with denture wearers were, Oral Stomatitis/ Burning mouth Syndrome/ mucosal lesions, superimposed infection and Angular cheilitis. Avnu, in his study also revealed that the elderly patients suffered from one or more oral mucosal lesions. The results indicated poor dental health of the elderly residents and most of the respondents were not satisfied with their dentures and wanted them changed [7].

IX. Conclusion

The results of the study revealed that the complete denture wearers suffer from various physical, social and psychological problems. These problems have a detrimental effect on their quality of life so in order to increase the confidence and self esteem of the elderly people proper treatment and counselling is needed. Good oral self care and regular dental checkups can lower these problems.[8]

According to the result we can guide the dental students for to deal with the problems faced by complete denture wearers. We can improve student's knowledge.And for to deal with psychological problems faced by the patients we can guide the students for to motivate the patients .