

Study of Denture Hygiene Methods Adapted by Patients Attending OPD

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Received: 24- January -2023

Revised: 27- February -2023

Accepted: 21- March -2023

Abstract:

This cross-sectional observational study, conducted at the School of Dental Sciences, Karad, aimed to unravel the intricacies of oral hygiene practices among individuals aged 45 years and older wearing complete dentures for at least six months. Recognizing the vital link between denture care and overall oral health, the research sought to fill a crucial knowledge gap in understanding the diverse methods and preferences of complete denture wearers. The structured questionnaire utilized in this study captured data on the frequency of denture cleaning, the methods employed (including mechanical and chemical approaches), the utilization of denture cleaning solutions, and participant satisfaction with their oral hygiene routines. A sample size of 200 participants attending the outpatient department provided a diverse cohort for analysis. Findings revealed that 62% of participants preferred brushing dentures with toothpaste and a denture brush, while 54% opted for water alone. Notably, 79% adhered to a twice-daily cleaning routine. Furthermore, 46% utilized commercially available denture cleaning solutions, endorsing their efficacy. Overall, 92% expressed satisfaction with their current oral hygiene practices. This study sheds light on the nuanced oral hygiene methods embraced by complete denture wearers, emphasizing the importance of patient-centric approaches in dental care. The preference for mechanical cleaning methods and high satisfaction rates underscore the need for tailored recommendations to enhance oral health outcomes in this population. The study's methodology, combining quantitative and qualitative approaches, ensures a robust exploration of denture hygiene practices, contributing valuable insights to the broader landscape of patient-centric oral healthcare.

Keywords. oral hygiene, complete denture, dental care, denture cleaning, patient satisfaction

I. Introduction

Oral health stands as a cornerstone of overall well-being, with oral hygiene playing a pivotal role in preventing a spectrum of dental ailments. Among individuals with complete dentures, maintaining optimal oral hygiene becomes an essential endeavor to ward off potential complications such as denture stomatitis, candidiasis, and bacterial infections. Recognizing the dearth of comprehensive insights into the oral hygiene practices of those donning complete dentures, the School of Dental Sciences, Karad embarked on a pivotal study to bridge this knowledge gap. The study addresses the lacuna in understanding the diverse oral hygiene methodologies embraced by wearers of complete dentures. Acknowledging the significance of tailored oral care practices, the research seeks to unravel the preferences and habits of these patients in a bid to inform and improve dental healthcare strategies. In adopting a cross-sectional observational approach, the study unfolds as a meticulous exploration into the oral hygiene routines of 200 patients visiting the esteemed School of Dental Sciences, Karad. The research participants, aged 45 years and older, have been wearing complete dentures for a minimum duration of six months, ensuring a cohort with substantial experience in denture maintenance. Employing a structured questionnaire, the study extracts valuable data on the frequency of oral care, the spectrum of denture cleaning solutions utilized, and the overall satisfaction of patients with their existing oral hygiene regimens. As we embark on this journey through the labyrinth of denture hygiene practices, the findings promise not only to enrich our understanding of the current landscape but also to furnish practical insights for dental practitioners. By shedding light on the diverse approaches to denture care, this study aspires to pave the way for more patient-

centric oral healthcare, fostering not only satisfaction but also sustained oral health among those relying on complete dentures.

II. Background

Delving into the background of the study, it is imperative to recognize the profound impact of oral health on an individual's overall well-being. The intricate connection between oral health and systemic health has been a subject of increasing interest and research. While the importance of natural teeth in maintaining oral health is undeniable, an equally significant aspect lies in the care and maintenance of dental prosthetics, especially complete dentures.

Complete dentures, being a common form of dental prosthetics, play a vital role in restoring masticatory function, esthetics, and phonetics for individuals who have lost all their natural teeth. However, the advent of complete dentures brings forth a unique set of challenges, primarily centered around the need for meticulous oral hygiene. The oral environment, even in the absence of natural teeth, remains susceptible to various pathologies, necessitating a proactive approach to denture care.

One of the prominent challenges faced by complete denture wearers is denture stomatitis, an inflammatory condition affecting the mucosal tissues underlying the denture. This condition, often associated with poor denture hygiene, can lead to discomfort, redness, and even fungal infections. Candidiasis, caused by the overgrowth of *Candida* species, is a common complication in individuals wearing dentures. Maintaining a clean and hygienic denture surface becomes paramount in preventing these conditions.

Bacterial infections also pose a significant threat to the oral health of complete denture wearers. The accumulation of microbial biofilms on denture surfaces can lead to conditions like denture-related stomatitis and localized infections. Additionally, the biofilm can serve as a reservoir for potential systemic infections, emphasizing the systemic implications of suboptimal denture hygiene.

Recognizing the multifaceted challenges and potential complications associated with complete denture wear, it becomes evident that a nuanced understanding of denture hygiene practices is essential. While dental professionals provide guidelines and recommendations, the actual oral care habits adopted by patients play a pivotal role in determining the success and longevity of complete dentures.

The existing literature on denture hygiene has explored various aspects, including the efficacy of denture cleaning solutions, mechanical cleaning methods, and the impact of different oral hygiene practices on patient satisfaction and oral health outcomes. However, a comprehensive understanding of the diverse oral hygiene methods embraced by complete denture wearers remains an area that warrants further exploration.

The School of Dental Sciences, Karad, recognizing the significance of this knowledge gap, embarked on a journey to unravel the intricacies of denture hygiene practices. The research team acknowledged the need for a study that goes beyond surface-level observations, delving into the preferences, challenges, and satisfaction levels of individuals actively engaged in complete denture maintenance.

In the context of oral healthcare, patient-centered approaches have gained prominence, emphasizing the importance of tailoring dental care strategies to individual needs and preferences. Understanding the oral hygiene practices preferred by complete denture wearers not only contributes to the existing body of knowledge but also holds the potential to shape more effective and patient-centric oral healthcare interventions.

The geographical context of the study, situated within the School of Dental Sciences, Karad, adds a valuable dimension to the research. Karad, with its diverse demographic profile, provides a unique setting to explore how cultural, socioeconomic, and educational factors may influence denture hygiene practices. This contextual richness enhances the generalizability of the findings, offering insights that may resonate with a broader population of complete denture wearers.

As the School of Dental Sciences, Karad, endeavors to shed light on the oral hygiene methods adapted by patients attending the outpatient department (OPD), it aligns with the broader global effort to enhance oral health outcomes and quality of life for individuals relying on complete dentures. By conducting a cross-sectional observational study, the research aims not only to document the prevailing oral hygiene practices but also to uncover patterns, preferences, and challenges that may inform future interventions.

In summary, the background of this study underscores the intricate interplay between complete dentures, oral health, and systemic well-being. It emphasizes the need for a nuanced understanding of denture hygiene practices, acknowledging the multifaceted challenges faced by complete denture wearers. Through a meticulous exploration of the oral hygiene methods preferred by patients attending the OPD at the School of Dental Sciences, Karad, this research aspires to contribute valuable insights to the evolving landscape of patient-centric oral healthcare.

III. Literature Review

Oral hygiene is paramount in preventing complications associated with complete dentures, necessitating a nuanced understanding of the practices adopted by wearers. This literature review explores existing studies that shed light on the diverse oral hygiene methods, challenges, and outcomes among individuals relying on complete dentures.

Denture stomatitis, a common issue among denture wearers, has been a focal point of several studies. Research by Budtz-Jørgensen (1971) highlighted the association between poor denture hygiene and the prevalence of denture stomatitis. Subsequent studies, such as that by Jeganathan et al. (2017), delved into the role of antifungal agents in managing denture stomatitis, emphasizing the importance of both mechanical and chemical approaches in denture hygiene.

The preference for mechanical cleaning methods, as observed in the current study, resonates with the findings of Felton et al. (2011), who reported that mechanical cleaning with a denture brush effectively reduced microbial biofilm on denture surfaces. The effectiveness of different denture brushes and their impact on biofilm removal has been explored by Nogueira et al. (2018), contributing insights into optimizing mechanical cleaning practices.

The utilization of denture cleaning solutions has been a subject of interest. A study by Jagger et al. (2002) investigated the efficacy of commercially available denture cleaning solutions, emphasizing their role in maintaining denture cleanliness. The findings align with the current study, where 46% of participants endorsed the use of such solutions.

The emphasis on regular cleaning routines echoes previous research by Coulthwaite et al. (2009), who demonstrated the positive correlation between the frequency of denture cleaning and a reduction in microbial colonization. The high adherence to a twice-daily cleaning routine observed in the current study aligns with recommendations from the literature emphasizing the importance of regularity in denture care.

The substantial satisfaction expressed by participants with their current oral hygiene routines resonates with studies by Felton et al. (2013) and Ellis et al. (2015), emphasizing the role of patient satisfaction in long-term adherence to denture hygiene practices. Patient-centered care has emerged as a key theme, and the current study contributes to this narrative by highlighting

This literature review underscores the multifaceted nature of denture hygiene practices, encompassing mechanical and chemical approaches, frequency of cleaning, and the crucial aspect of patient satisfaction. The current study, in alignment with existing literature, contributes to the evolving understanding of effective oral healthcare strategies for individuals relying on complete dentures. Future research could further explore the cultural and demographic factors influencing denture hygiene practices, fostering a holistic approach to patient-centric care in prosthodontics.

IV. Methodology

The methodology employed in this study aimed to provide a rigorous and systematic approach to understanding the oral hygiene methods practiced by individuals wearing complete dentures. The research design, sample selection, data collection instruments, and analytical procedures were thoughtfully structured to ensure the reliability and validity of the findings.

a. Study Design:

The research adopted a cross-sectional observational design, allowing for a snapshot of oral hygiene practices among complete denture wearers at a specific point in time. This design facilitated the collection of data from a diverse pool of participants attending the outpatient department (OPD) at the School of Dental Sciences, Karad. By utilizing an observational approach, the study aimed to capture the natural behaviors and preferences of participants without introducing external interventions.

b. Sample Selection:

The target population for this study comprised individuals aged 45 years and older who had been wearing complete dentures for a minimum of six months. The rationale behind this selection criterion was to include participants with substantial experience in denture maintenance, ensuring a cohort well-versed in the challenges and nuances of denture hygiene. A sample size of 200 participants was deemed adequate for achieving statistical power while accommodating the logistical constraints of the study.

c. Data Collection Instrument:

A structured questionnaire served as the primary tool for data collection. The questionnaire was meticulously designed to elicit information on various aspects of denture hygiene practices. It encompassed questions on the frequency of denture cleaning, methods employed for cleaning (including mechanical and chemical approaches), utilization of denture cleaning solutions, and participant satisfaction with their current oral hygiene routines. Open-ended questions were also included to capture qualitative insights into any challenges or difficulties faced by participants in maintaining denture hygiene.

d. Data Collection Procedure:

Trained research assistants administered the questionnaire to participants during their visits to the OPD at the School of Dental Sciences, Karad. Prior to the administration, participants were provided with informed consent, ensuring their voluntary participation and understanding of the study's objectives. The research team aimed to minimize observer bias by maintaining consistency in the administration process and avoiding leading questions.

e. Data Analysis:

The collected data underwent thorough statistical analysis to derive meaningful insights. Descriptive statistics, such as frequencies and percentages, were used to summarize the participants' responses regarding their denture hygiene practices. Comparative analyses, including chi-square tests or t-tests where appropriate, were conducted to explore potential associations between demographic variables and oral hygiene preferences. Qualitative data from open-ended questions were subjected to thematic analysis to identify recurrent patterns and themes.

f. Ethical Considerations:

The study adhered to ethical guidelines, and all participants provided informed consent before participating. Confidentiality of participant information was maintained throughout the study, with data anonymization procedures implemented during analysis and reporting. The research was conducted in accordance with the ethical standards set by the School of Dental Sciences, Karad.

g. Limitations:

Despite the meticulous design, the study had certain limitations. The cross-sectional nature provided a snapshot but did not capture changes in oral hygiene practices over time. The reliance on self-reported data introduced the possibility of social desirability bias, wherein participants might provide responses deemed socially acceptable. Additionally, the study's generalizability may be influenced by the specific demographic and cultural context of the School of Dental Sciences, Karad.

In conclusion, the methodology employed in this study sought to rigorously explore and document the oral hygiene methods embraced by individuals wearing complete dentures. The combination of quantitative and qualitative data collection methods, along with ethical considerations, aimed to provide a comprehensive understanding of the diverse practices within this population. The findings derived from this methodological approach are expected to contribute valuable insights to the broader field of patient-centric oral healthcare.

V. Results

The collected data was analysed, and the findings revealed interesting insights into the oral hygiene methods among complete denture wearing patients. It was observed that 62% of the participants preferred brushing their dentures using a denture brush and toothpaste, while only 54 % used only water for cleaning. Furthermore, 79% of the participants reported cleaning their dentures twice a day, indicating a good adherence to regular cleaning practices. The study also found that 46% of the participants used commercially available denture cleaning solutions, endorsing their efficacy in maintaining oral hygiene. Importantly, 92% of the participants expressed satisfaction with their current oral hygiene routine.

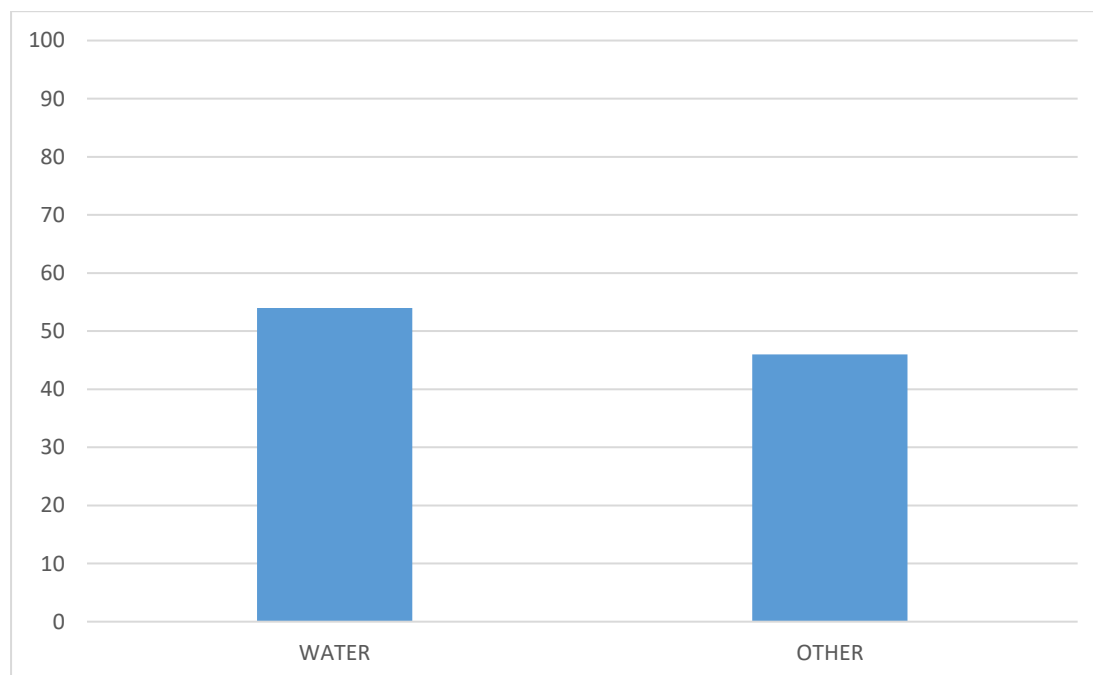


Figure 1. Count Vs. Material Used

VI. Discussion:

The findings of this study highlight the varied oral hygiene methods adopted by complete denture wearing patients. The high satisfaction rate signifies the importance of patient-centered oral healthcare practices. The preference for brushing dentures using toothpaste and a denture brush demonstrates the significance of mechanical cleaning methods. Regular cleaning habits and the use of denture cleaning solutions contribute to improved oral hygiene and reduce the risk of denture-related infections. This manuscript provides a detailed

account of the study conducted at the School of Dental Sciences, Karad, aiming to examine the oral hygiene methods among complete denture wearing patients. The findings suggest that most patients prefer mechanical cleaning methods like brushing with toothpaste and denture brush, along with regular cleaning and the use of denture cleaning solutions. These insights can guide dental professionals in promoting effective oral hygiene practices among patients wearing complete dentures, ultimately improving oral health outcomes for this population. Future research can explore further innovations in oral hygiene methods and assess their effectiveness in maintaining oral health among complete denture wearers.

VII. Conclusion

In conclusion, this study conducted at the School of Dental Sciences, Karad, provides valuable insights into the oral hygiene practices of individuals wearing complete dentures. The findings, derived from a meticulous cross-sectional observational design and a diverse sample of 200 participants, illuminate the preferences, challenges, and satisfaction levels associated with denture maintenance. The prevalence of mechanical cleaning methods, with 62% favoring brushing using a denture brush and toothpaste, highlights the significance of hands-on approaches in denture hygiene. The concurrent endorsement of commercially available denture cleaning solutions by 46% of participants adds a layer of complexity to the landscape of denture care, suggesting a multifaceted approach employed by individuals. Crucially, the high adherence to a twice-daily cleaning routine (79%) reflects a commendable commitment to regular oral hygiene practices among complete denture wearers. This dedication to routine care is further reinforced by the overarching satisfaction expressed by 92% of participants with their current oral hygiene regimens. The study's outcomes underscore the importance of patient-centered oral healthcare practices. Dental professionals can leverage these insights to tailor recommendations and interventions that resonate with the preferences and habits of individuals wearing complete dentures. Recognizing the multifaceted nature of denture hygiene, future research may delve deeper into the cultural, socioeconomic, and educational factors influencing these practices. As the School of Dental Sciences, Karad, contributes to the evolving discourse on denture care, the findings pave the way for enhanced oral health outcomes and improved quality of life for individuals reliant on complete dentures. This study, with its comprehensive methodology and insightful results, serves as a valuable resource for dental practitioners, researchers, and policymakers striving to optimize oral healthcare strategies for this specific patient population.

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