Master of Science in Public Health

Assessment of patient's satisfaction for removable dentures (partial and complete) according to masticatory efficacy, retention and aesthetics in dental department of tertiary care hospital in Rawalpindi Islamabad.

By

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ABSTRACT

Objectives: The goal of this study is to determine the level of satisfaction among people who use dentures. These denture wearers may be of any age, demographic, occupation, or status. Denture satisfaction is multifaceted, influenced by a wide range of factors ranging from denture quality to patients' psychological and socioeconomic circumstances, necessitating a holistic approach to denture fabrication and patient education.

Gap: The literature review reveals a significant research gap in denture adaptability and long-term satisfaction, emphasizing the importance of longitudinal studies that track satisfaction over time. Furthermore, the importance of dentist-patient communication in managing expectations and increasing satisfaction is highlighted.

Methodology: This study used a cross-sectional study design with a detailed demographic analysis of 210 respondents from Rawalpindi and Islamabad, using questionnaires to assess denture satisfaction across multiple domains such as comfort, aesthetics, and functionality.

Findings: The methodology included ANOVA tests to investigate the effect of age, employment status, and comorbidity on denture satisfaction, which revealed significant associations. The findings highlight the complexities of denture satisfaction, which is influenced by a wide range of factors, including denture quality as well as patients' psychological and socioeconomic status. The statistical analysis, which included descriptive statistics and correlation analysis, revealed information about the average quality, aesthetics, speaking abilities, and retention of the dentures, emphasizing moderate to positive levels of satisfaction while identifying areas for improvement.

Implications: Healthcare providers need demographic data to tailor services and resources to different patient populations. Demographic data analysis improves interventions, services, patient satisfaction, and outcomes. We recommend fitting sessions, instructional materials, pain management solutions, nutrition coaching, emotional support, and regular checkups for personalized denture care. Sample homogeneity, cross-sectional design, and the need to incorporate patient feedback and dental technology changes limit existing studies. To improve patient outcomes, future research will focus on dental prosthesis customization, patient education, novel materials, denture psychosocial effects, and denture model comparisons.

Keywords: Partial dentures, Complete dentures, Quality of dentures, Patient satisfaction

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As people's dental health improved, they extracted fewer teeth and required more treatment for partial and total edentulism (Parel, 2018). The repair of lost teeth and associated structures is important for improving appearance, masticatory efficiency, reducing unwanted tooth movements (overeruption/drifting), and phonetic accuracy. The aesthetics and functionality of the stomatognathic system improve the patient's quality of life (Campbell et al., 2017). Long-span edentulous spaces are difficult to replace with fixed prostheses, which results in a poor prognosi (Tallarico et al., 2018). RPDs and CDs are also the greatest option for many therapeutic scenarios, such as replacing lost hard and soft tissues that necessitate esthetic support of the orofacial structures. Free end RPDs are one of the most essential situations in attaining long-term success without jeopardizing the remaining tissues, particularly in the mandible, which has a reduced quantity of bony ridge (Algallai, 2022; Sayed, 2017). Patients seeking tooth replacement visit dental clinics with various expectations and previous experiences. Patient happiness with the prosthesis can have a significant impact on treatment outcome, since discontent with an RPD is likely to result in disuse and consequent rehabilitation failure. (De Kok et al., 2017) The majority of cases involving technical and patient-related factors are amenable to the use of removable partial dentures for the treatment of partially edentulous ridges (Wöstmann et al., 2005). A considerable proportion of patients appear to be content with their complete dentures (CD) and removable partial dentures (RPD). Regarding RPDs and CDs, satisfaction is multifactorial. The efficacy of prosthodontic treatment is contingent upon patients' gratification with respect to certain denture-related aspects, including comfort, retension, aesthetics, and masticatory ability (Heikal et al., 2022). Additional factors that have an indirect impact but are crucial for determining patient satisfaction include the patient's personality, attitude toward denture use, prior dental experience, and motivation for denture utilization. Nevertheless, the assessment of satisfaction varies among dentists and patients (Larsen et al., 2022). The patient's own dental health, the health of their mucosal, gingival, and periodontal tissues, the number and condition of abutments, the construction and support of the denture, the material used, and its cleanliness are additional factors that contribute to patient dissatisfaction (Heikal et al., 2022). Another key aspect that contributes to patient dissatisfaction is the patient's disagreement with the quality of the denture and does not

recognize whether or not the denture is helping. They have a grumbling temperament, and it is difficult to satisfy them nonetheless (Kini et al., 2021).

Prosthodontics is a specialty of dentistry that focuses on improving oral function, comfort, beauty, and overall health through the utilization of biocompatible replacements for teeth and face tissues that are either absent or deficient. Prosthodontics is a subspecialty of dentistry (Evans & Pineda-Munoz, 2018). Dental prosthesis is a field of knowledge that focuses on the construction and modification of dental prostheses with the intention of strengthening patients' ability to chew, improving their appearance, and encouraging their overall well-being. A significant purpose of prosthodontic treatment is to restore oral function, with a specific emphasis on the correct geometry of the dental prosthesis to ensure that chewing becomes more effective (Alenezi et al., 2021) . This is the primary goal of prosthodontics treatment. This involves the fabrication of prosthetic teeth that imitate the natural alignment of opposing teeth. This ensures that the quality will last for a long time and minimizes the severity of damage to natural teeth through the use of prosthetic teeth. Fixed prostheses have garnered a great deal of appreciation due to the fact that they provide both stability and cosmetic value (Field et al., 2019). These prostheses are distinguished from detachable prostheses that rely on mucosal support by the fact that they are firmly attached to either individual teeth or implants. This is the primary difference between the two types of prostheses. It is essential to choose suitable materials in order to guarantee durability, long-lasting performance, and compatibility with the teeth that are located in the vicinity of the treatment region. The overall dental health will improve as a result of this . There is a substantial relationship between dental prostheses of the highest quality and the extension of the lifespan of abutments and the teeth that surround them. This is in accordance with the "8020 movement" of the World Health Organization, which has the objective of preserving twenty of a person's natural teeth by the time that they reach the age of eighty. There is a connection between oral health and overall wellness, and this connection is of the utmost relevance (Epifania et al., 2018).

Prior to beginning the process of creating prosthodontics, it is absolutely necessary to have a comprehensive grasp of the specific characteristics of tooth problems. The classification that G.V. Black developed acts as a point of reference for this process. This is a factor that is considered during the decision-making process regarding intracranial restorations for minor faults and extra coronal restorations, such as crowns and veneers, for more severe forms of damage. It is now feasible to construct restorations that are designed to fulfill both aesthetic

and functional needs with a great deal of precision (Evans & Pineda-Munoz, 2018). This is made possible by the advancements that have been made in both the materials and the procedures that are used. Direct fillings are suitable for areas that require less force to maintain, whereas inlays, onlays, and laminate veneers are more suited for larger flaws or for enhancing aesthetics. Inlays, onlays, and laminate veneers are also better suited for improving aesthetics. Whole crowns are a comprehensive solution for restoring damaged teeth. They offer a number of material options to suit a variety of requirements for durability and appearance (de Souza Batista et al., 2020). All of these solutions are available. Whole crowns are a solution that offers a total solution to the problem. There are a lot of factors that could have an impact on the degree to which patients are satisfied with their dentures. These factors include the overall quality of the dentures, psychological and socioeconomic concerns, and the specific characteristics of the location where the dentures are actually implanted. Based on the findings of the research, it is evident that there are variations in levels of satisfaction, which have a substantial influence on the quality of life in connection to oral health (AlJazairy, 2020). There are three aspects of the prosthesis that have a considerable influence on the level of enjoyment that patients who are undergoing prosthodontics therapy experience. These aspects include the prosthesis's practicality, comfort, and aesthetics. Both of these aspects ultimately play a role in the treatment's level of success. A Pakistani study found that less-experienced denture wearers were more dissatisfied but had normal oral perception. More experienced denture wearers showed less complaints but poorer oral stereo gnosis (Memon et al., 2023).

Patients usually have high expectations for their entire dentures. It's difficult to satisfy a patient's denture needs. Patients demand even more pleasure as they age, making it difficult to get them to acclimate to artificial dentures. It's hard to understand the patient's discontent after a thorough diagnosis and treatment plan. Even if the dentures are good, it's hard when patient expectations are higher than contentment. Iqbal et al. (2018) investigated whether complete denture wearers and dentist-first visitors are happier with their denturese. The study found a weak positive link between denture extension and patient aesthetic, mastication, and phonetic characteristics . The study found a weak positive connection between occlusion and patient aesthetics However, occlusion had weak positive relationships with patient mastication and phonetics.

Ahmed and Faruqui (2015) describe patient satisfaction with prosthodontics treatment. The Altamash Institute of Dental Medicine conducted this cross-sectional study. This study

included 200 partly edentulous individuals with removable or fixed prosthesis. Patients could be unsatisfied, not very satisfied, neutral, somewhat satisfied, or satisfactorily satisfied with phonetics, pain, mastication, taste, and esthetics. Prosthodontics patients are satisfied with their prosthesis and say it improves their dental health.

The aim of this study is to see the satisfaction level of those people who are using dentures. These denture wearers can be of any age group, demographic area, occupation, status.

1.2 Objectives

Here are the main objectives of study

- Assess the satisfaction level of denture wearers regarding comfort, aesthetics, and functionality.
- Identify demographic and psychological factors that influence patient satisfaction with removable dentures.
- Develop recommendations for enhancing denture services based on patient feedback.

1.3 Rational of study

The study aims to address the significant gap in understanding how removable dentures (both partial and complete) impact the satisfaction levels of patients in terms of comfort, functionality, and aesthetics. Despite the prevalence of denture use, especially among older populations, there is insufficient comprehensive data on patient outcomes and satisfaction levels. Additionally, the study seeks to explore the multifaceted factors that influence satisfaction, including psychological and socioeconomic aspects, to better tailor dental services to meet the needs of diverse patient populations. By investigating these areas, the study intends to enhance dental care practices, improve patient outcomes, and guide future research in prosthodontics services.

Chapter 2 Literature Review

Prosthodontics is a dental specialty that focuses on diagnosing, planning treatment, rehabilitating, and maintaining the oral function, comfort, appearance, and health of patients with conditions related to missing or inadequate teeth and/or facial tissues. This is achieved through the use of biocompatible substitutes (Dahane et al., 2021; Pratheebha et al., 2020). This chapter focuses on specialized prosthesis for teeth and dental structures. The fundamental criteria for dental prosthesis are evident based on the objective of prosthodontics. Hence, the primary objective of restoration is to restore and enhance oral function, particularly the ability to chew and grind food. The establishment of adequate and efficient occlusal contacts requires the consideration of the specific geometry of the dental prostheses (Karasan et al., 2023). For instance, the specific attributes of the cusps of the prosthetic tooth in the back, such as their angle, height, and shape, should correspond to those of the opposing hollow area(Field et al., 2019). Next, the two posterior teeth on opposing sides should align in a manner like a pestle and mortar, creating an effective mechanism for grinding food. Strength, resistance to intraoral aging, and fatigue resistance are essential aspects for ensuring the optimal long-term performance of dental prosthesis (Evans & Pineda-Munoz, 2018).

Additionally, when designing dental prosthesis, it is important to consider the durability and ability to withstand friction of the natural teeth they will come into contact with. To maintain the health and function of adjacent natural teeth, it is important to minimize excessive wear of tooth tissue (greater than 29μm per year) caused by dental prostheses (Torres & Schwendicke, 2020). Patient comfort is a crucial factor in assessing the efficacy of dental prostheses. From this perspective, fixed prostheses are preferred over removable prostheses. Fixed prostheses are supported by teeth and/or implants and are secured in place using either adhesion or mechanical locking. On the other hand, removable prostheses rely on support from both the teeth and the surrounding mucosa (Duong et al., 2022; Swelem & Abdelnabi, 2021). As a result, the presence of a denture base and connectors is necessary. The sensation of a foreign object becomes more pronounced when a larger denture base and additional connectors are used. The presence of a metal base and connectors further diminishes the visual appeal (Vazouras & Taylor, 2021). The primary rationale for preferring fixed therapies over removable prosthesis in prosthodontic dentistry is due to the prominent adverse consequences associated with the latter. In addition to restoring the ability to speak and chew, dental prostheses should also aim to preserve or enhance the overall health of the patient

(Shrestha et al., 2020). Restorative materials must possess excellent biocompatibility, meaning they may be employed without causing any hazardous or harmful effects on patients' biological systems. Furthermore, dental prosthetics must safeguard the existing tooth structure or teeth. A comprehensive evaluation has emphasized the beneficial impact of high-quality dental prosthesis on extending the lifespan of abutments and adjacent teeth. Prosthodontic therapies support the '8020 movement' advocated by the World Health Organization (WHO) in 2001, which aims to preserve 20 natural teeth by the age of 80 (Satpathy, 2022). Oral health and general health are closely interconnected. For instance, efficient chewing lessens the load on the digestive system. Consequently, enhancing oral health is anticipated to enhance overall health (Patel et al., 2021). The design and treatment of prosthodontics should consistently aim to optimize the following principles: The 9 aspects include function, longevity, beauty, comfort, biocompatibility, and protection. It is important to emphasize that there are no prosthesis that are completely perfect or all-powerful for every patient. Prosthodontists should carefully assess the individual's oral condition, the patient's willingness to utilize prostheses, and other aspects that may have an impact(Stewart & Bagby, 2020).

2.1 Restoration of tooth defects

The selection of a restoration method to address a tooth defect is dependent upon the specific attributes of the lesion, including its location, shape, and extent (Goodacre et al., 2023). Thus, it is advantageous to comprehend the concept of prosthodontic design by examining the usual attributes of lesions. Dr. G. V. Black proposed the most widely acknowledged categorization of dental abnormalities or cavities more than a century ago. The classification is determined by the precise site of the lesion, as demonstrated by G. V. Black's Classification (Singh & Sehgal, 2021).

- ✓ Class I cavities specifically affect the grooves and crevices on the surface of teeth, such as the occlusal areas of molars and premolars, or the little depressions on the inner side of incisors and canines. The remaining classes (II-VI) pertain to the teeth's flat surfaces.
- ✓ Class II cavities affect the adjacent and biting surfaces of premolars and molars.
- ✓ Class III cavities specifically affect the proximal surfaces of incisors and canines, excluding the incisal angle.

- ✓ Class IV cavities are found on the sides of incisors and canines and also affect the biting edge.
- ✓ In Class V cavities, the decay is seen on the outer or inner surfaces of the lower third of the teeth, and does not affect any grooves or crevices.
- ✓ In Class VI, cavities are located on the incisal edges of anterior teeth or on the occlusal cusp heights of posterior teeth. It is important to note that this classification was not originally included in G.V. Black's categorization system.

The fundamental concept of prosthetic design dictates that as long as there is an adequate amount of tooth structure above the gum line, an intracoronal restoration can be utilized regardless of the specific type of tooth defect (Pratheebha et al., 2020). The coronal tooth tissue needs to possess sufficient strength to maintain and safeguard a dental restoration against the expected forces of chewing and the reconstructed integrated structure. Intracoronal restoration is more appropriate for a live tooth than for a non-live tooth, regardless of whether root canal therapy (RCT) has been performed or not (Mannocci et al., 2022). Due to the possibility of insufficient dental tissue remaining, a root canal treated tooth that is non-vital is susceptible to becoming brittle. Typical intracoronal restorations consist of direct fillings, inlays and onlays, and laminate veneers. An extracoronal restoration is necessary when there is not enough tooth structure above the gum line to support the repair within the natural crown of the tooth. It will replicate the shape and structure of the injured crown, enabling regular oral functionality (Lempel et al., 2019).Furthermore, extracoronal restoration may be employed in cases where there are significant areas of damaged axial tooth structure, or when it is necessary to adjust the shape to enhance occlusion and enhance the appearance. The extracoronal restoration is defined as either a partial crown or a full crown, depending on whether a partial or whole crown is required. Posts and cores are indicated for situations where additional support and retention are required (Bhuva et al., 2021; Lin et al., 2020).

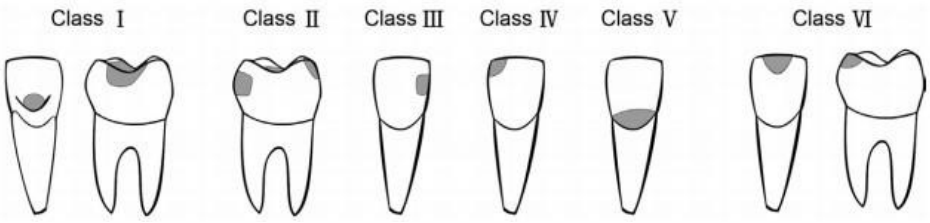

Figure 1: According to the G.V. Black Classification, various tooth defects are categorized into six classes based on the specific location of the lesions.

2.2 Direct Fillings

Restoring tooth lesions with direct fillings is a fundamental restorative dentistry technique. This method applies pliable materials directly to the cavity, suited to each lesion. Direct fillings work well for certain dental restorations because the biting force on the tooth is low(Mackenzie & Banerjee, 2017). No matter the type of lesion, dentists directly fill it with fictile materials if the biting force is low (Zhao & Wang, 2014). After shaping and curing, fillings harden and restorations form. Chair-side treatment can be done in one clinic visit.

Direct filling shapes pits and fissures and flattens surfaces. Due to material softness, rebuilding curved convex structures like cusps, marginal ridges, and incise edges is difficult. Direct filling fictile materials lack the strength and wear ability of metal alloys or ceramics. Class IV and VI lesions require strong cusps, tips, and edges, so fictile materials are not used (Torres & Schwendicke, 2020). Recent material selection improvements are notable (Patel et al., 2021). Silver amalgam fillings, especially for Class I lesions, have been popular since the 1800s due to their low cost, ease of application, strength, and durability. Mercury was criticized for harming the environment and patients. Poor aesthetics and longevity make silver amalgams unpopular and avoided (Garg & Garg, 2010). Polymerization shrinkage, wearability, strength, and discoloration should always be considered when using composite fillings.

2.3 Inlays and Onlays

As mentioned, direct fillings may not be ideal for Class IV/VI lesions or other lesions with extensive defects. Inlays and onlays are recommended. Inlay restorations fit within the clinical crown of a tooth. Onlay can restore a more severely damaged tooth, especially if the cuspal fracture has left enough tooth structure. Figure shows inlay and onlay schematics (Zhao & Wang, 2014). Casting, milling, and pressing industrial prefabricated blocks are

common processing methods. Individual and precise restoration geometry is easy to obtain. Inlays and onlays are preferred in four cases: a serious tooth defect with bad proximal relation, a food impaction needing proximal contact recovery, an abutment with caries, or an attachment with an inlay as a retainer. They can restore convex structures (Salz et al., 2007).

2.4 Laminate Veneers

Laminate veneers, created in 1937 for cosmetic dentistry, are crucial. By adding a thin veneer to a tooth, its look can be improved. High tooth structure protection and treatment simplicity are also possible. Therefore, the most obvious benefit of this procedure is cosmetic improvement with minimal tooth preparation. This appeals to patients and dentists. Laminated veneers are extensively utilized to repair facial enamel flaws and improve the appearance of discolored or misshapen teeth (Calamia & Calamia, 2007) Laminate veneers can also repair anterior diastema and slightly displaced teeth that would not respond to orthodontic treatment. Figure 3.7 shows displaced anterior teeth repaired by laminate veneer for aesthetics. Finally, laminate veneers can restore a small natural tooth or extensively worn tooth with a new protective coating (AlJazairy, 2020).

Follow-up reports show 64% clinical approval of porcelain veneers. Broken porcelain and major marginal flaws like discolouration and caries recurrence cause most failures. Most of these issues can be fixed without replacement. Thin laminate veneers with smooth surfaces, exact shapes, and excellent margins are desired. The laminate should hide discolouration and not irritate the gingiva. Ideal laminates are easy to produce and repair and have good wear, fracture, durability, coloring, and micro-leakage resistance. These features are always desired at low cost, but dentist and patient must compromise (Alenezi et al., 2021) .Composite, acrylic, porcelain, and ceramic veneers are available, but none meet the necessary requirements. The most common low-cost porcelain veneers are brittle and break easily. Extremely stained teeth cannot be repaired (Rinke et al., 2020).

2.5 Full Crowns

The full crown, also known as the entire crown, is utilized to repair a tooth that has numerous damaged axial surfaces and to replicate the clinical crown of a natural tooth. It offers the

highest level of retention achievable in any given circumstance (Smales & Etemadi, 2004). It is crucial to emphasize that a sufficient amount of healthy tooth structure is necessary for the placement of a complete crown. Alternatively, a tooth may experience a fracture or the crown may get detached. Full crowns can be categorized into three main classes based on their structure and the type of restorative material employed, each having distinct indications. The available options are: the complete metal crown, the porcelain fused to metal crown (PFM), and the nonmetal full crown (Nilsson & Wedin, 2022) .See (Figures 3.8a, b, and c respectively).

Full metal crown

When compared to crowns with a ceramic component, this crown requires less tooth tissue to be removed. Although full metal crowns are robust, their usage should only be allowed in circumstances where there are no metal allergies or aesthetic demands. For all metal-based restorations, choosing the right metal alloy requires great thought and consideration. These days, casting alloys are more common in dentistry than wrought alloys due to the more homogenous metal structure that casting technology provides (Ribka & Niemiec, 2022) . Higher precision and longer-lasting performance are the advantages of this. Casting alloys can be divided into three categories based on their compositions: noble metal alloys, non-noble metal alloys, and high-noble metal alloys. Although the alloys are softer, high noble metal content often increases bio-acceptance. These are suitable from a strength perspective for a restoration with less demanding strength specifications. Certain situations involving significant occlusal stresses or the support of a long-span FPD call for the selection of metal components that contribute to the alloy's strength and hardness. In conclusion, the patient's budget, strength needs, and biocompatibility should all be taken into account when choosing an alloy metal (Eraslan et al., 2005)

2.6 Porcelain fused to metal crown (PFM)

PFM was developed to combine strength and aesthetics in one crown (Figure 3.8b). This is done with a sturdy metal cope and porcelain veneers. Due to its natural appearance, wearability, and fracture and corrosion resistance, PFM crowns are considered permanent prostheses. The fabrication process is complicated and many factors affect PFM crown

success. A thick, homogenous porcelain layer should reduce brittleness failures. Thus, careful preparation with significant tooth structure loss is needed. Second, an opaque metal cope can reduce restoration translucency and sometimes ruin the final appearance with its golden color. Metal-porcelain bond strength is another important factor in PFM crown restoration (Peumans et al., 2000). To illustrate, thermal expansion mismatch can cause residual stresses between the materials, resulting in partial porcelain veneer breakage. This method is not always applicable. The space needed for aesthetic porcelain veneers and retention and resistance requires significant tooth preparation, so it cannot be used to restore young permanent teeth with a large pulp cavity or too small teeth. Additionally, porcelain is fragile. Patients with a severe, deep overbite or tight bite cannot use PFM crowns. As PFM crowns cannot be completed in one visit, patients who cannot undergo repeated treatments due to physical/mental status should be excluded (Batista et al., 2022).

2.7 Non-metal full crowns

. Non-metal full crowns include composite resin and all-ceramic. These can replace metal crowns for patients who are allergic or want aesthetics. Low cost, good aesthetics, and easy fabrication are composite resin crown benefits. Resin crowns are only used for temporary restorations because resin materials deteriorate over time. All-ceramic crowns are popular due to their strength, hardness, low thermal conductivity, wear-resistance, color stability, and biocompatibility. There are many ceramic materials with different properties (Jovanović et al., 2021). Feldspathic, sanidine, leucite, and lithium disilicate are used to reinforce dental porcelains, but they are too brittle to withstand large occlusal forces. Today's strongest and most popular all-ceramic crowns are alumina- or zirconia-based. A conventional all-ceramic restoration requires extensive tooth preparation, making it unsuitable for small teeth, deciduous teeth with a vivid pulp, or young permanent teeth with a severe defect (Talukdar et al., 2022).

2.8 Post-and-core

In some cases, crowns lack retention and cannot be used. For instance, a tooth may have lost large amounts of hard tooth tissue, sometimes even to the sub-gingival area. Fortunately, a root canal can support a custom crown. This method is post-and-core. Posts are placed in pre-treated root canals to improve retention. Root core retains and resists artificial crown. The

post, core, and crown make up the final restoration. The post-and-core are made to fit together. The crown was initially joined to the post-and-core unit as a dowel crown. Richmond crown is typical dowel crown. Metal bases form an artificial crown that fits the prepared abutment tooth. Most post-and-core crowns are now made separately The integrative dowel crown is less edge-fit than this restoration. It can slightly alter tooth direction and help fit a malpositioned or torsiverted tooth. If needs change, the separate-fabricated crown can be changed. Without touching the post-and-core (Theodosopoulou & Chochlidakis, 2009).

Multiple post-and-core units are commercially available and made using different methods. One method is metal casting. Milling ceramic blocks creates post-and-core assemblies with unique geometries. A new CAD/CAM glass fiber post-and-core by Liu et al. can restore a fractured anterior tooth and look good. Another method involves the dentist building the resin composite core on site using prefabricated standard posts. This method promises to build the post-and-core chairside and all at once, reducing visits but increasing operating time(de Souza Batista et al., 2020). Post-and-core materials are chosen for their properties. Meanwhile, consider post-and-core and crown reactions. If a metal post-and-core is used, the crown material should mask its metal color and restore the tooth's natural appearance (Garcia et al., 2019).

The post-and-core's proper use depends on the patient's tooth root canal. This application must be prohibited in certain situations. Short roots or curved, tiny root canals don't allow enough space for the post. Without strong bone support, a brittle root with bone absorption greater than 1/3 of the root cannot be chosen. Patients with deep bites or compact occlusions cannot use post-and-core (Zhao & Wang, 2014).

Denture wearing people’s satisfaction worldwide

Denture wearers' satisfaction with their prostheses appears to be affected by a multitude of factors, including denture quality, psychological and socioeconomic status, and denture-bearing area features.A cluster analysis study in BMC Oral Health found that denture wearers were not at all satisfied, only satisfied with doctor and general dimensions, moderately satisfied, quite satisfied, and very highly satisfied. This investigation showed that psychosocial factors and individual expectations affect denture satisfaction. The study

identified a substantial link between satisfaction aspects and showed that denture therapy improved oral health-related quality of life (OHRQoL) differently across satisfaction clusters (Teng et al., 2020). The happiness of denture users worldwide tends to vary greatly across comfort, look, and functioning. Only 5% of denture wearers were pleased, with 77% wanting comfort and 49% attractiveness improvements. The poll also indicated that 95% of patients may be unhappy with their dentures due to a lack of education or choice. Most patients would pay more for dentures that fit better, look more like natural teeth, and resist discoloration, plaque, odor absorption, and bacterial growth (Henry, 2014).

According to Čelebić et al. (2003),most of 222 total denture patients were satisfied with their prosthesis. Education, self-perception of affective and economic status, and quality of life affected satisfaction. The study found that patient satisfaction depended on denture quality, denture-bearing area, and experience. Interestingly, younger patients with first-time dentures and short-term eventuality were more satisfied with maxillary denture retention. However, these factors reduced mandibular denture retention and comfort scores. Another study examined Taiwanese senior persons' oral health-related quality of life (OHRQoL) and detachable dentures. Denture satisfaction was the strongest predictor of OHRQoL, accounting for 50% of GOHAI-T scores. Education, number of natural teeth, denture condition, and denture perceptions (such as looseness or oral ulcers) significantly affected OHRQoL. The study found that denture satisfaction is a good indicator of how denture care affects elderly people with removable dentures (Yen et al., 2015).

2.9 Denture wearing people’s satisfaction from Pakistan

A Pakistani study indicated that denture wearers with less experience were more dissatisfied, but their oral perception was unaffected. However, people with more denture experience had fewer complaints but less oral stereognosis, the capacity to detect mouth items (Memon et al., 2023).

When it comes to their complete dentures, patients typically have pretty high expectations for themselves. It is not easy to fulfill the requirements of a patient in order to make them happy with their dentures. The fact that patients expect even higher levels of satisfaction as they get older makes it extremely challenging to convince them to adjust to their artificial dentures. Despite the fact that the patient has been completely diagnosed and treatment planning has been completed prior to the provision of complete dentures, it is still difficult to comprehend the patient's level of dissatisfaction. In addition, it becomes a difficult task when the patient's

expectations are higher than the patient's level of satisfaction, regardless of the quality of the dentures. Iqbal et al. (2018) aimed to determine whether or not there is a difference in the levels of satisfaction with dentures between those who wear complete dentures and those who visit the dentist first. Components and methodologies: In total, there were 134 participants who were completely toothless and ranged in age from 48 to 65 years old. The collection of data was accomplished by means of a validated questionnaire that possessed a Cronbach α validity of 85%. On a Likert scale ranging from one to five, socio demographic data, the patient's priority, the satisfaction of the dentist, and the patient's satisfaction with the dentures were all recorded and rated. For the purpose of determining the degree of similarity between the dentist and the patient satisfaction score, Spearman's correlation was utilized. A moderately strong correlation ($p<0.05$) was found between the presence of occlusion and the level of comfort experienced by the patient. There was a weakly positive correlation ($p<0.05$) between the quality of the denture, the extension, and the patient's aesthetics, mastication, phonetics, and comfort. Additionally, a feeble positive correlation was discovered between the extension of the denture and the aesthetic, mastication, and phonetic characteristics of the patient ($p<0.05$). A very weak positive correlation was discovered between occlusion and the aesthetics of the patient ($p<0.05$). On the other hand, weak positive correlations were discovered between occlusion and the mastication and phonetics of the patient.

Ahmed and Faruqui (2015) explain the degree to which patients were satisfied with the results of their prosthodontic treatment. This study was a cross-sectional investigation that was carried out at the Altamash Institute of Dental Medicine. A total of two hundred patients who were partially edentulous and had already been restored with either removable or fixed prostheses took part in this investigation. The Likert scale was utilized to assess the level of patient satisfaction. For the purpose of determining the level of satisfaction that patients have with regard to aspects such as phonetics, pain, mastication, taste, and esthetics, the patients were provided with the options of being unsatisfied, not very satisfied, neutral, somewhat satisfied, and satisfactorily satisfied. Following the completion of statistical analysis, the Likert scale receives positive ratings for all aspects, including phonetics, pain, mastication, taste, and other aesthetic considerations. Patients who have undergone prosthodontic treatment report a high level of satisfaction with their prosthesis, all the while demonstrating that the prosthesis has a positive impact on their oral health.

CHAPTER 3: METHODOLOGY

3.1 Study design:

A cross sectional study was carried out for the assessment of satisfaction level of those people who are using dentures. These denture wearers can be of any age group, demographic area, occupation, status. of Rawalpindi and Islamabad.

3.2 Study setting:

Questionnaires based on self-reporting and people who use dentures completed the questionnaires. Data has been collected from tertiary care hospital and dental clinics in Rawalpindi and Islamabad.

3.3 Sampling unit:

Our sampling unit was the population of Rawalpindi and Islamabad who used dentures (partial or complete)

3.4 Duration:

The study completion took six months (September 2023- May 2024) after the approval of IRB.

3.5 Sample size:

The total number of respondents included in this study was 210 at a 95% confidence interval prevalence level of 16% as taken by Satishkumar et al. (2021)

3.6 Sampling technique:

Consecutive sampling technique for data collection was used by including every eligible denture user from Rawalpindi and Islamabad until the sample size of 210 respondents was reached. This method ensures every subsequent eligible participant is selected without skipping, until the desired sample size is achieved, which helps in studying every available case during the time frame of the study.

3.7 Sample selection: Inclusion criteria:

- Both males and females are included.

- People who have used partial or complete dentures for at least 6 months.
- Individuals above 18 years.

3.7.1 Exclusion criteria:

- Those who did not give consent for being part of this research.
- Physically or mentally handicapped individuals were not included.

3.8 Data collection procedure:

A questionnaire was adapted using data from previous literature (Epifania et al., 2018; Rehmann et al., 2008) . Data has been collected from dental clinics and hospitals of Rawalpindi and Islamabad via online and pen paper surveys from patients who was using partial and complete denture.

A pilot study on 10% of my sample size was done before proceeding with my research.

3.9 Tool and Plan of analysis:

All data was analyzed using SPSS version 21. A P-value less than 0.05 was considered as significant with a 95% confidence interval. A pilot study on 10% of my sample size was done before proceeding with my research.

3.10 Ethical considerations:

This study was conducted after approval by the ethical committee of Al Shifa School of Public Health. Informed consent was obtained from participants prior to taking data.

All collected data was solely used for study purpose and confidentiality was maintained. Research participants were not harmed in any way and respect for their dignity and voluntary participation was ensured.

Chapter 4: Result

Table No 4.1. Demographics Statistics of Employees (N=210)

Demographics Statistics of Employees

Sr#	Variable	Categories	Frequencies(%)
1	Age	15-25	17 (8.10%)
		26-35	43 (20.50%)
		36-45	24 (11.40%)
		46-65	32 (15.20%)
		66-75	30 (14.30%)
		76-85	54 (25.70%)
		86-95	10 (4.80%)
2	Gender	Male	92 (43.80%)
		Female	118 (57.20%)
3	Material Status	Single	59 (28.10%)
		Married	127 (60.50%)
		Others	24 (11.40%)
4	Education	No education	25 (11.90%)
		Matric	43 (20.50%)
		Intermediate	44 (27.70%)
		University	88 (41.90%)
5	Employment Status	Working	58 (27.60%)
		Non-working	59 (28.10%)
		Not currently working	93 (44.30%)
6	Occupation	Private job	19 (9.00%)
		Govt. job	8 (3.80%)
		Business	47 (22.40%)
		Housewife	56 (26.70%)
		Student	25 (11.90%)
		Unemployed	55 (26.20%)
7	Monthly Income	Less than 50,000	42 (20.00%)
		50,000-75,000	43 (20.50%)
		More than 1,00,000	87 (41.40%)
		Others	38 (18.10%)
8	Facility	Private clinic	48 (22.90%)
		Private hospital	88 (41.90%)
		Govt. hospital	74 (35.20%)
9	Location	Urban	106 (50.50%)
		Rural	104 (49.50%)
10	Comorbidity (The	Yes	109 (52.00%)

	existence of more than one disease in body)		
		No	101 (48.00%)
11	Health Issue	Hypertension	30 (14.30%)
		Diabetes	42 (20.00%)
		Cancer	18 (8.60%)
		Renal	25 (11.90%)
		No health issue	95 (45.20%)
12	Denture Type	Partial removable denture	154 (73.30%)
		Complete removable denture	56 (26.70%)
13	Which Denture	Maxillary Denture	68 (32.40%)
		Mandibular Denture	83 (39.50%)
		Both	59 (28.10%)
14	Teeth Replace	Anterior	64 (30.50%)
		Posterior	79 (37.60%)
		Both	67 (31.90%)
15	Teeth Quantity	1	3 (1.40%)
		2	57 (27.10%)
		3	55 (26.20%)
		4	16 (7.60%)
		5	14 (6.70%)
		6	2 (1.00%)
		7	6 (2.90%)
		8	5 (2.40%)
		9	4 (1.90%)
		14	4 (1.90%)
		16	2 (1.00%)
		28	38 (18.10%)
		30	4 (1.90%)
16	Brush Regularly	1 time	57 (27.10%)
		2 time	137 (65.20%)
		3 time	6 (2.90%)
		No	10 (4.80%)
17	Visit	Last Week	22 (10.50%)
		Last Month	106 (50.50%)
		Last Year	60 (28.60%)
		Don’t Remember	22 (10.50%

The demographics of employees in a study of 210 individuals reveal diverse age groups, marital statuses, educational backgrounds, employment statuses, occupations, monthly incomes, facilities used, locations, comorbidities, health issues, denture types, denture locations, teeth replacement preferences, quantity of teeth replaced, oral hygiene practices,

and dental visitation habits. Among the employees, those aged 26-35 and 76-85 form the largest age groups, with 20.5% and 25.7% respectively, indicating a workforce primarily in their middle ages. A significant majority, 60.5%, is married, and 41.9% have an university level of education, suggesting a workforce that is mostly married and fairly educated. About 57,2% respondents are females and rest are males

Regarding employment, 44.3% are not currently working, a high proportion that might reflect a variety of circumstances such as unemployment or temporary leave. In terms of occupation, the largest groups are housewives and unemployed individuals, both exceeding 26%, followed by those in business at 22.4%, indicating a diversity in job sectors among the participants. Income data shows a substantial portion, 41.4%, earning more than 100,000 monthly, highlighting a segment of the workforce with relatively high earnings. Health care preference is inclined towards private hospitals (41.9%) and government hospitals (35.2%), showing reliance on both private and public health services. The population is evenly split between urban and rural locations, indicating a wide geographic distribution of the workforce.

A significant number of individuals, 52%, report having comorbidities, with hypertension, diabetes, and renal issues being the most common health problems, showing a considerable prevalence of chronic diseases. In terms of dental health, a majority opt for partial removable dentures (73.3%) and have a preference for replacing both anterior and posterior teeth, reflecting a broad need for dental care across various types. Oral hygiene habits reveal that a majority brush twice daily, yet there's a notable portion that does not brush regularly, underscoring diverse oral health practices. Lastly, dental visitation patterns show that while many visited a dentist in the last month, a significant number do not remember their last visit, indicating varying degrees of attention to dental health. This detailed demographics analysis underscores the complexity and diversity of employee backgrounds, health statuses, and behaviors within the studied population.

4.2 Descriptive statistics

The following table describes the descriptive statistics of all variable items.

Table No. 4.2 Descriptive statistics

Variables	Items	Mean	Std. Deviation
OVERALL QUALITY OF DENTURE		3.04	0.378
	How do you rate the overall Quality of your denture?	3.24	1.17
	How do you rate the comfort of your Denture?	2.87	1.13
CHEWING FOOD		3.01	0.554
	How do you rate the ability to chew with your denture?	3.24	1.12
	How do you rate feeling about the pleasure you get from food, compared with the time when you had natural teeth?	3.23	1.17
	With respect to chewing, how satisfied are you with your dentures?	3.35	1.132
	Have you ever been unable to eat due to problems with your denture?	2.68	1.16
	Have your ever notice that your denture retained food?	2.58	1.13
AESTHETICS		3.28	0.50
	With respect to appearance, how satisfied are you with your denture?	3.48	1.17
	How do you rate the aesthetic of your denture?	3.50	1.29
	Have your ever felt embarrassed because of your mouth or denture?	2.42	1.17
	With respect to being self-assured and self-conscious, how satisfied are you with your denture?	3.73	.99
SPEAKING		3.63	0.798
	How do you rate the ability to speak with your	3.49	1.14

	denture?		
	With respect to your social and effective relationship, how satisfied are you with your oral conditions/denture?	3.65	1.05
	With respect to your professional performance, how satisfied are you with your denture?	3.75	1.11
RETENSION OF DENTURE		2.16	0.939
	Have you ever felt that your dentures were not correctly fit?	2.5	1.09
	Have your ever felt your mouth painful?	2.39	1.20
	Have your denture ever came out with chewing food?	1.52	.939

The table 4.2 provides descriptive statistics for a variety of aspects of the denture experience. These statistics are categorized under several dimensions, including overall quality, aesthetics, speaking, and retention of the denture. The respondents rated their experiences on a scale, which was indicated by means and standard deviations. Each category contains multiple items, and the respondents rated their experiences.Two aspects of the denture were evaluated in order to determine its overall quality. These aspects were the quality of the denture and its comfort. The means for these two aspects were 3.24 and 2.87, and the standard deviations for them were 1.17 and 1.13, respectively. The results of this survey indicate that respondents have a moderately positive perception of the quality and comfort of dentures.

There were five items that were examined in the category of chewing food. These items investigated the functionality and satisfaction associated with chewing, the pleasure that comes from eating, the overall satisfaction with dentures in this regard, the difficulties that come with being unable to eat, and the difficulties that come with food retention. The means for these items ranged from 2.58 to 3.35, indicating a range of satisfaction levels. The highest level of satisfaction was related to overall satisfaction with dentures when chewing (3.35), while the lowest level of satisfaction was related to problems with dentures retaining food (2.58).

The evaluation of aesthetics was conducted using four different items, with the primary focus being on the level of satisfaction with one's appearance, aesthetic rating, feelings of embarrassment caused by dentures, and satisfaction with one's self-assurance and self-consciousness. Despite the fact that aesthetics were generally rated positively, the means in this category ranged from 2.42 for feelings of embarrassment to 3.73 for satisfaction related to self-assurance and self-consciousness. This indicates that embarrassment due to dentures continues to be a concern for some individuals. The ability to speak, satisfaction with social and effective relationships, and satisfaction with professional performance due to oral conditions or dentures were the three items taken into consideration in the evaluation of speaking abilities and the social effects of dentures. It was found that the means for these items were relatively high, ranging from 3.49 to 3.75, which indicates that respondents generally had a positive attitude regarding their ability to speak and the impact that their dentures had on the social and professional aspects of their lives.

Last but not least, the retention of the denture was investigated by examining three aspects: the fit of the dentures, the presence of pain in the mouth, and the occurrence of dentures leaving the mouth while the individual was chewing food. The means for these items ranged from 1.5286 to 2.5, with the lowest mean relating to dentures coming out while chewing, suggesting that while some respondents experience issues with denture fit and comfort, the occurrence of dentures coming out during eating is less common.

The statistics indicate that, on the whole, there is a moderate to positive level of satisfaction with dentures in a variety of aspects, including quality, aesthetics, and functionality. However, there is room for improvement in certain areas, such as food retention and feelings of embarrassment.

4.3 ANOVA

Table No. 4.3 One-way Anova

ANOVA						
		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Age	Between Groups	120.985	29	4.172	1.702	0.020
	Within Groups	441.210	180	2.451		
	Total	562.195	209			
Marital status	Between Groups	13.616	29	0.470	1.330	0.134
	Within Groups	63.551	180	0.353		
	Total	77.167	209			
Education	Between Groups	27.706	29	0.955	1.061	0.390
	Within Groups	162.051	180	0.900		
	Total	189.757	209			
Employment Status	Between Groups	31.698	29	1.093	1.734	0.016
	Within Groups	113.468	180	0.630		
	Total	145.167	209			
Occupation	Between Groups	101.415	29	3.497	1.604	0.034
	Within Groups	392.514	180	2.181		
	Total	493.929	209			
Income	Between Groups	33.189	29	1.144	1.171	0.263
	Within Groups	173.999	178	0.978		
	Total	207.188	207			
Facility	Between Groups	18.476	29	0.637	1.143	0.292
	Within Groups	100.305	180	0.557		
	Total	118.781	209			
Health issue	Between Groups	244.971	29	8.447	2.478	0.000
	Within Groups	613.510	180	3.408		
	Total	858.481	209			

The ANOVA (Analysis of Variance) table shows how age, marital status, education, employment status, occupation, income, facility, location, comorbidity, and health issue

affect a dependent variable (not specified but likely related to employee performance, satisfaction, health status, or similar). Each factor's analysis compares means across groups within the factor, yielding sums of squares, degrees of freedom (df), mean square, F-statistic (F), and significance level. Age difference between groups is statistically significant (p-value 0.020), suggesting age affect the dependent variable.The analysis shows no statistically significant difference between groups by marital status (p-value 0.134). Education levels have no significant effect on the dependent variable (p=0.390). With a p-value of 0.016, employment status affects the dependent variable. Occupational differences between groups have a p-value of 0.034, suggesting occupation affects the dependent variable. Income levels have no significant effect (p-value 0.263). With a p-value of 0.292, facility does not significantly differ between groups. The p-value of 0.000 indicates that health issues significantly affect the dependent variable, as groups differ significantly on health issues. The significant p-values (less than 0.05) for age, employment status, and occupation, comorbidity, and health issues suggest these factors affect the dependent variable. These variables may not affect the dependent variable in this analysis because marital status, education, income, facility, and location do not show significant effects. This information could help explain how employee characteristics affect outcomes, guide policies, interventions, and research.

4.4 Independent Sample T-test

Gender

Table No. 4.4 Gender-Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					
								95% Confidence Interval of the Difference	
		F	Sig.	t	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
QOD	Equal variances assumed	6.150	.014	-1.505	.134	-.08543	.05677	-.19735	.02648
	Equal variances not assumed			-1.583	.116	-.08543	.05397	-.19220	.02133

The purpose of the Independent Samples T-test becomes to investigate variations in a "QOD" variable across gender agencies. The analysis incorporates two parts: the T-test for equality of means and Levene's Test for equality of variances, which provide information about the equality of variances and the variations in means between companies, respectively. A significance level of.014 from Levene's Test for Equality of Variances suggests that the two gender organizations' "QOD" variances are significantly different from one another. Because this p-value is less than the commonly accepted significance level of.05, it demonstrates that the assumption of equal variances isn't always satisfied, which leads to the usage of t-test results that don't assume identical variances.

With a p-value of.116, the t-statistic for the equality-of-means T-test under the condition of unequal variances is -1.583. The p-value is greater than the.05 significance level, indicating that the apparent difference in "QOD" between the gender corporations is not necessarily statistically significant, even though it is numerically present. With a stated indicate distinction of -.08543, the first group appears to have a somewhat lower suggest "QOD" than the second group. Although this difference was identified, it is not statistically significant due to the non-full-size p-cost.The 95% confidence interval for the mean difference spans from -.19220 to.02133, along with other factors. Since there is no evidence of a statistically significant difference in "QOD" between the genders, the inclusion of zero inside them

Location

Table No. 4.5 Location-Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					
								95% Confidence Interval of the Difference	
		F	Sig.	t	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
QOD	Equal variances assumed	1.188	.277	1.901	.059	.09861	.05187	-.00364	.20087
	Equal variances not assumed			1.901	.059	.09861	.05188	-.00367	.20090

Using an Independent Samples T-test that comprised Levene's Test for Equality of Variances and the T-test for Equality of Means, we analyzed the variable "QOD" across different locations. Since there was no statistically significant difference in the groups' variances (a significance level of.277 according to Levene's Test), we can conclude that the groups had identical variances and use that assumption in our t-test.Under the null hypothesis of no difference in variance, the t-test yields a t-value of 1.901 and a p-value of.059. Although it is marginally less than the traditional.05 level of statistical significance, it does indicate a tendency toward a mean difference in "QOD" among the sites. With a mean difference of.09861, one set of locations is somewhat more likely to have a high "QOD" rating than the other. This difference is not statistically significant, though, since the p-value is more than.05.Additionally, the mean difference has a 95% confidence interval that contains zero, ranging from -.00364 to.20087. This addition adds to the evidence that the direction of the difference is ambiguous, which supports the conclusion that the data does not support the conclusion that there is a statistically significant mean difference in "QOD" between sites.

Comorbidity

Table No. 4.6 Comorbidity -Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means					
							95% Confidence Interval of the Difference	
	F	Sig.	T	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper

QOD	Equal variances assumed	5.640	.018	-2.773	.006	-.14258	.05141	-.24394	-.04122
	Equal variances not assumed			-2.780	.006	-.14258	.05129	-.24370	-.04146

We used Levene's Test for Equality of Variances and the T-test for Equality of Means to analyze "QOD" related to comorbidity across two groups. The Levene's Test yielded a significance value of.018, suggesting that the groups' variances are not equal. Given Levene's Test, non-equal variance t-test findings should be considered. T-test results showed a t-value of -2.780 and a p-value of.006. This significant p-value, below.05, suggests a statistically significant difference in mean "QOD" across groups. The mean difference of -.14258 indicates that one group has a lower mean "QOD" than the other. The 95% confidence interval for the mean difference is -.24370 to -.04146, excluding zero. The difference in "QOD" across groups is statistically significant and likely to be meaningful in the context of comorbidity. This shows that the group classification and the "QOD" variable related to comorbidity are statistically associated, with one group having lower "QOD" values than the other.

4.5 Correlation analysis

Variable	Chew	Aesthetic	Speaking	Retention	QOD
Chew	1				
Aesthetic	-0.06	1			
Speaking	.237**	.641**	1		
Retention	.301**	-.520**	-.503**	1	
QOD	.757**	.450**	.617**	.147*	1

***. Correlation is significant at the 0.01 level (2-tailed).*
**. Correlation is significant at the 0.05 level (2-tailed).*

Results show that Chewing (r= 757 , p< 0.01) Aesthetic (r= 450 , p< 0.01) , Speaking (r= 617 , p< 0.01) and retention (r= 147 , p< 0.05) is positively and significantly related to quality of denture (QOD)

Chapter 5: Discussion

5.1 Overall discussion

Denture satisfaction is an essential component of prosthodontic treatment that has far-reaching repercussions for oral health-related quality of life (OHRQoL). The purpose of his study was to investigate the level of satisfaction reported by denture users. Denture satisfaction is an essential component of prosthodontic treatment. It is a complex phenomenon that is influenced by a multitude of circumstances, ranging from the quality of the denture to the psychological and socioeconomic situations of the patients (Teng et al., 2020; Čelebić et al., 2003). Denture satisfaction is a complex phenomenon that is influenced by a multitude of circumstances. The review of the relevant literature sheds light on the complexities of denture satisfaction.The findings from a variety of research that were highlighted in the review, such as those conducted by Ahmed and Faruqui (2015) and Memon et al. (2023), lend support to the idea that patient satisfaction is multifaceted and encompasses comfort, aesthetics, and functioning. This is an important point to consider. Because of the complexity of the situation, it is essential to take a comprehensive approach to the construction of dentures and the education of patients in order to achieve higher levels of patient satisfaction. Iqbal et al. (2018) and Yen et al. (2015) found that the review also demonstrates a variation in satisfaction levels among various demographic and geographic groups. This suggests that cultural and individual expectations play a role in determining the level of satisfaction with dentures. It is interesting to note that the review also demonstrates a variation in satisfaction levels among these groups.

The evaluation of the existing literature, on the other hand, reveals that there is a significant gap in research concerning the adaptability and long-term satisfaction of dentures among users. In spite of the fact that studies like the ones carried out by Heikal et al. (2022) and Algallai (2022) provide insights into the initial period of adaptation and instant pleasure, there is a scarcity of longitudinal studies that monitor changes in satisfaction over the course of extended periods of time. Dentures have the potential to be durable, patient expectations can shift over time, and the long-term effects of dentures on oral health and overall well-being can be studied. These types of research have the potential to yield significant information.

Additionally, the analysis highlights the significant importance that communication between the dentist and the patient plays in regard to the management of expectations and the enhancement of satisfaction (Kini et al., 2021; Larsen et al., 2022). In light of this, it would appear that dental practitioners, in addition to possessing technical expertise in denture production, should also place a high emphasis on developing constructive communicative relationships with their patients in order to successfully comprehend and manage the expectations that their patients have.

5.2 Discussion on results

Results research provides a comprehensive analysis of the obtained results, including demographics, ANOVA tests, and descriptive information. The bankruptcy sheds light on many aspects of the research, providing insights into the characteristics of the pattern population, the impact of various factors, and the overall satisfaction levels associated with denture experiences. The demographics section delves into the 210 respondents' various characteristics, including age, marital status, education, employment popularity, occupation, profits, healthcare preferences, location, comorbidities, health issues, denture types, oral hygiene practices, and dental visitation behavior. The breakdown provides a nuanced understanding of the demographic composition, reflecting a diverse range of backgrounds, fitness statuses, and behaviors among the majority of individuals.

The ANOVA analysis investigates the relationship between various factors and a predetermined variable, most likely related to worker overall performance, satisfaction, or health popularity. Significant findings emerge regarding age, employment status, career, comorbidity, and fitness issues, indicating their tremendous impact on the structured variable. In contrast, factors such as marital reputation, schooling, profits, facility, and location produce no significant results, indicating that they have a limited influence in this context.

Furthermore, descriptive facts provide a more in-depth look at various aspects of the denture experience, such as typical quality, aesthetics, speaking abilities, and retention. The analysis reveals moderate to high quality tiers of pride across distinct elements, emphasizing areas of strength and areas for improvement. While respondents generally rate their dentures favorably in terms of quality, aesthetics, and functionality, issues such as food retention and feelings of embarrassment require attention.

5.3 Implications and strengths

Obtaining information from patients has significant implications for improving patient outcomes and optimizing the delivery of health care, whether viewed from the standpoint of the health care industry. By analyzing the demographic profile of the patient population, which includes aspects such as age, marital status, education level, and work status, healthcare providers are able to gain significant insights about the individual desires and choices of their patients. Through the process of gaining an understanding of the demographic composition of the impacted population, healthcare corporations are able to customize their services and resources to better satisfy the numerous wants of patients who fall into a variety of demographic categories. By way of illustration, having knowledge of the age distribution of patients can provide information on developments in health care that are specific to that age population. packages and interventions, such as providing geriatric care for patients who are older or engaging in preventative health projects aimed at younger demographics. Patients who are unemployed or living alone are examples of vulnerable populations who may require more help or assistance in order to cope with their health care desires. In a similar vein, health care practitioners may benefit from gaining insight into the marital and occupational histories of their patients. It is possible for healthcare personnel to give more tailored and effective care when they take into account comorbidities, general fitness difficulties, and denture-related situations. It is possible for healthcare providers to assist patients in better managing their conditions and improving their regular fitness outcomes by placing an emphasis on preventative treatment and early intervention strategies that are targeted to address common fitness difficulties such as high blood pressure, diabetes, and dental fitness issues. There are potential for remarkable improvement initiatives in dental offices and health facilities related to the research of oral health and the levels of enjoyment that patients experience with their dentures. Dental experts are able to improve the level of happiness that patients have with their services and ensure that patients receive care that is both comprehensive and concentrated on the patient by concentrating on areas of discontent or discomfort pointed up by patients. In general, the information that is obtained from records that are manually collected from patients can give healthcare professionals with the ability to build focused interventions, improve service delivery, and, in the long term, improve the enjoyment and fitness of those who are affected. By utilizing these data to inform decision-making and care planning processes, healthcare organizations are able to better match the wishes of their affected populations and sell high-quality care delivery that is centered on the patient.

5.4 Recommendations

- Provide personalized denture fitting and adjustment sessions for each patient. Due to the fact that the gums and mouth of a patient can change over time, it is essential to perform follow-up modifications. This is because the dentures may no longer fit properly.
- Providing patients with comprehensive teaching materials and resources is crucial for proper care of dentures. These materials should include information on cleaning, maintenance, and storage strategies. With the correct information, patients are able to efficiently maintain their dentures, which reduces complications and increases their overall satisfaction.
- The provision of pain management and comfort solutions includes remedies for common denture discomforts such as sensitivity and difficulty chewing.Adjustments to the dentures, as well as the recommendation of appropriate adhesives and soft liners, could fall under this category.
- Guiding nutrition and eating habits can improve the quality of life for denture wearers. Provide patients with advice on how to adjust to eating with dentures and make suggestions for meals that are simpler to manage. This will ensure that patients continue to consume a diet that is balanced.
- In order to provide emotional and psychological support, it is important to acknowledge the emotional and psychological aspects of the process of accepting dentures. Offering patients the opportunity to participate in support groups or counseling services can assist them in navigating their feelings and increase their overall contentment.
- Regular checkups are vital for monitoring the condition and fit of dentures, and for addressing any issues that may arise promptly. Patients should feel comfortable discussing any problems or concerns they have, and their healthcare provider should respond with empathy and practical solutions. It is important to encourage open communication between patients and providers.
- In order to improve your dental practice, it is crucial to actively seek and incorporate input from your patients. By understanding their unique needs and challenges, you can make necessary improvements in service and patient care.

5.5 Limitation and Future directions

The investigation into how patients perceive their satisfaction with dentures has unearthed several areas ripe for further inquiry, pinpointing particular limitations that forthcoming studies could aim to surmount. Among these, the homogeneity of the study's sample population stands out. Despite the inclusion of a varied group of denture wearers, the expansion of the sample to encompass a broader spectrum of socioeconomic statuses and geographical locales could unveil more nuanced understandings of the impact of cultural and environmental determinants on user satisfaction. Moreover, the study's cross-sectional design, which snapshots patient satisfaction at a singular moment, poses another limitation. The deployment of longitudinal research methods would yield invaluable insights into the dynamics of satisfaction over time, illuminating the durability of denture solutions and the shifting needs of patients.

The challenge of measuring patient satisfaction, a concept tinged with subjectivity, emerges from the influence of a plethora of factors not entirely captured in the current study. Augmenting self-reported satisfaction metrics with more tangible measures of denture functionality could offer a holistic view of patient experiences. Furthermore, the swift evolution of dental technology, encompassing both materials and manufacturing techniques, suggests that the research might not accurately reflect the latest advancements in denture technology. It is crucial for future studies to examine the impact of these innovations on patient satisfaction, with a particular focus on improvements in fit, comfort, and visual appeal.

Additionally, the exploration of the psychological and social dimensions influencing satisfaction with dentures was not exhaustively pursued. Delving into how self-perception, social interactions, and overall psychological health affect the denture-wearing experience could unveil pivotal insights into the broader implications of dentures on patients' lives.Looking to the horizon, numerous research pathways appear promising. Customization of dental prosthetics represents a fascinating domain, highlighting the potential effects of tailored designs and material choices on user satisfaction. The significance of patient education in fostering enduring satisfaction and the proper upkeep of dentures also merits attention. Furthermore, the exploration of novel materials that promise enhanced comfort, longevity, and aesthetic value is a worthwhile pursuit. A thorough investigation into the psychosocial ramifications of wearing dentures could shed light on their impact on social participation, mental health, and overall quality of life. Lastly, research comparing the effectiveness of various denture models, including implant-supported versus conventionally

removable dentures, could offer critical guidance for clinical practice and patient advisement, steering individuals towards the denture solutions that best meet their needs and preferences.

5.4 Conclusion

This study examines denture users' satisfaction. Denture wearers can be any age, demographic, occupation, or status.Denture fabrication and patient education must be holistic because denture satisfaction is influenced by many factors, from denture quality to patients' psychological and socioeconomic situations. The literature review shows a research gap on denture adaptability and long-term satisfaction, highlighting the need for longitudinal studies. Also stressed is the importance of dentist-patient communication in managing expectations and improving satisfaction.. Findings showed significant associations between age, employment status, and comorbidity and denture satisfaction. The findings show that denture satisfaction is complicated, influenced by many factors, including denture quality and patient psychology and socioeconomic status. Descriptive statistics and correlation analysis revealed the average denture quality, aesthetics, speaking abilities, and retention, emphasizing moderate to positive satisfaction and areas for improvement. Health providers must collect demographic data to tailor services and resources to diverse patient populations. Demographic data analysis improves interventions, services, patient satisfaction, and outcomes. For customized denture care, we recommend fittings, instructional materials, pain management, nutrition coaching, emotional support, and frequent checkups. Study limitations include sample homogeneity, cross-sectional design, and patient input and dental technology developments. Dental prosthesis customization, patient education, novel materials, psychosocial effects of dentures, and denture model comparisons for optimal patient results are future research.

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APPENDIX A: Consent Form

I am Sana Khan , student of MSPH-4th semester, Alshifa School of Public Health, Alshifa Trust Eye Hospital, Rawalpindi. I am conducting research on to determine the level of satisfaction among people who use dentures.

Purpose of the research:

The purpose of this study is to determine the level of satisfaction among people who use dentures.

Participation:

By taking this study there is no discomfort or inconvenience to you. your participation is strictly voluntary, and you may withdraw your participation at any time during the study without any penalty. I request you to answer as honestly as possible. It will not take more than 10 minutes to answer my questions. All the information collected will be used only for my research and will be kept confidential. Your identity & your responses will not be identifiable; all data will be sorted anonymously. No incentive will be provided for answering the questions. Thank you for your participation in the study, your feedback is important.

☐ I have read and understand the information sheet and agree to participate in the study. (Check the box)

Participant's Signature: _____ Date: _____

Consent Form

Fauji Foundation Hospital Rawalpindi

I am Sana Khan , student of MSPH-4th semester, Alshifa School of Public Health, Alshifa Trust Eye Hospital, Rawalpindi. I am conducting research to determine the level of satisfaction among people who use dentures.

Purpose of Research:

I would like to conduct my research in Prosthodontic department of Fauji Foundation Hospital. The purpose of this study is to determine the level of satisfaction among people who use dentures. The research will be conducted on 50 patients over the time of 30 days. All the information collected will be used only for my research and will be kept confidential. The identity of the patients and their responses will not be identifiable; all data will be sorted anonymously.

Participation:

By taking this study there will be no discomfort or inconvenience to your patients. Their participation will be strictly voluntary and they may withdraw their participation at any time during the study without any penalty. No incentive will be provided for answering the questions.

The research would consist of google forms and surveys.

☐ I have read and understand the information sheet and agree to participate in the study. (Check the box)

Participant's Signature: _____ Date: _____

APPENDIX B: Questionnaire

Denture using patient's satisfaction Questionnaire

This is a survery to assess satisfaction of Patients using removable dentures in various dental facilities in pindi/Islamabad
Dentures are the false teeth made to replace the lost teeth

zaincomsats202@gmail.com Switch account

Not shared

1. ***Age (years):***

Your answer

2.Marital status:

- ◯ single
- ◯ married
- ◯ others
- ◯ Other:

3. Education

- ◯ No education
- ◯ Matric
- ◯ Intermediate
- ◯ university
- ◯ Other: _____

4. Employment Status:

- ◯ Working
- ◯ Non-working
- ◯ Not currently working
- ◯ Other: _____

5. Occupation:

- ◯ Private Job
- ◯ Govt. Job
- ◯ Business
- ◯ Housewife
- ◯ Student
- ◯ Unemployed

6. Monthly Income (as per total household income/Month) :

- ◯ Less than 50000
- ◯ 50000-75000
- ◯ 75000-100,000
- ◯ More than 100,000
- ◯ Other: _____

7. Facility (In rawalpindi/Islamabad) from where you got your denture:

- ◯ Private clinic
- ◯ Private hospital
- ◯ Govt. Hospital
- ◯ Other: _____

8. Location:

- ◯ Urban
- ◯ Rural
- ◯ Other: _____

9. Do you have any comorbidity?

- ◯ Yes
- ◯ No
- ◯ Other: _____

10. Which health issue do you have:

- ◯ Hypertension
- ◯ Diabetes
- ◯ Cancer
- ◯ Renal (kidney problem)
- ◯ No health issue

DENTURE STATUS:

11. What kind of removable Denture are you using:

- ◯ Partial removable denture
- ◯ Complete removable denture
- ◯ Other: _____

12. Which denture are you using?

- ◯ Maxillary Denture
- ◯ Mandibular Denture
- ◯ Both

13. Which teeth are replaced by denture?

- ◯ Anterior
- ◯ Prosterior
- ◯ Both

14. How many teeth are replaced?

Your answer

ORAL HYGIENE:

15. Do you brush your teeth regularly? if yes then how many times?

- ◯ 1 time
- ◯ 2 times
- ◯ 3 times
- ◯ No
- ◯ Other: _____

16. Last visit to Dentist:

- ◯ Last week
- ◯ Last Month
- ◯ Last year
- ◯ Don't remember
- ◯ Other: _____

This questionnaire is about Patient's satisfaction in regard of aesthetics, masticatory efficacy and retention of the dentures they are using which they got from different dental facilities (Dental hospitals, clinics) by different dentists. Please think of your satisfaction level about the denture youre wearing and share your overall experience. Please read each statement carefully.

1. Strongly Disagree. 2. Disagree. 3. Neutral. 4. Agree. 5. Strongly Agree

OVERALL QUALITY OF DENTURE

17. How do you rate the overall Quality of your denture?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5

18. How do you rate comfort of your Denture?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ Other:

CHEWING FOOD:

19. How do you rate the ability to chew with your denture?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5

20. How do you rate feeling about the pleasure you get from food, compared with the time when you had natural teeth?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5

21. With respect to chewing, how satisfied are you with your dentures?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5

22. Have you ever been unable to eat due to problems with your denture?

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

23. Have your ever notice that your denture retained food?

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

AESTHETICS:

24. With respect to appearance, how satisfied are you with your denture?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5

25. How do you rate the aesthetic of your denture?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5

26. Have your ever felt embarrassed because of your mouth or denture?

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

28. With respect to being self-assured and self-conscious, how satisfied are you with your denture?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5

SPEAKING:

29. How do you rate the ability to speak with your denture?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5

29. How do you rate the ability to speak with your denture?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5

30. With respect to your social and effective relationship, how statisfied are you with your oral conditions/denture?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5

31. With respect to your professional performance, how satisfied are you with your denture?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5

RETENSION OF DENTURE:

32. Have you ever felt that your dentures were not correctly fit?

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

33. Have your ever felt your mouth painful?

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

34. Have your denture ever came out with chewing food?

- ◯ strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly Disagree

APPENDIX C: Gantt chart

	September 2023	October 2023	November 2023	December 2023	January 2024	February 2024	March2024	April 2024
Topic Selection								
Literature Search								
Synopsis and IRB approval								
Pilot Testing								
Data Analysis								
Thesis Write-up								
Thesis Submission and Thesis Defense								

APPENDIX D: Budget

Budget Item	Transport	Stationery and Internet	Printing
Pilot Testing	9,000 Rs/-	5,000 Rs/-	4,000 Rs/-
Data Collection	15,000 Rs/-	5,000 Rs/-	4,000 Rs/-
Thesis Write-up	2,000 Rs/-	2,000 Rs/-	8,000 Rs/-
Total Expenditure	27,000 Rs/-	12,000 Rs/-	16,000 Rs/-
Grand Total	55000 Rs/-		