ORIGINAL ARTICLE

Frequency of Different Factors Affecting Patient's Decisions Making on Prosthodontics Treatment Plan

Muhammad Farooq Kamran[1]	**BDS, FCPS**
Aqsa Akhtar Khan[2]	**BDS, FCPS**
Danish Azeem Khan[3]	**BDS, FCPS**
Qudsia Iqbal[4]	**BDS, FCPS**
Menahil Basit[5]	**BDS**
Kiran Dilnawaz[6]	**BDS**

OBJECTIVE: The objective of this study was to look at the elements that influence patients' decision making and selection of dental prostheses.

METHODOLOGY: A cross sectional survey was done to examine patients' views toward tooth replacement. This survey was conducted using a pre-validated questionnaire that contained demographic information for each patient, whether or not they accept the treatment plan proposed by the dentist, and close ended multiple choice questions stating the reasons cited by them if they decline the proposed treatment plan.

RESULTS: At a significance level of $P < 0.05$, the data were statistically analyzed using the Chi-square test. The single most compelling reason a patient chose not to follow the suggested treatment plan was shown to be correlated with their demographic data, including age, gender, marital status, educational attainment, and monthly income. Within the population sample under investigation, the majority of patients (54.45%) rejected the suggested treatment plan and agreed to the alternative. The main cause of this rejection is high expense (31.17%).

CONCLUSION: The financial cost is the primary reason patients reject standard prosthodontic treatment plans. Additional factors such as treatment duration and urgency also significantly influence patient decisions. Addressing these barriers through patient-centered communication, education, and policy efforts is critical to improve treatment acceptance and dental care outcomes.

KEYWORDS: Decision-making, patient autonomy, prosthodontics treatment, patient-focused dentistry

HOW TO CITE: Kamran MF, Khan AA, Khan DA, Iqbal Q, Basit M, Dilnawaz K. Frequency of Different Factors Affecting Patient's Decisions Making on Prosthodontics Treatment Plan. J Pak Dent Assoc 2024;34(2):45-49.

DOI: https://doi.org/10.25301/JPDA.342.45

Received: 30 October 2024, Accepted: 01 July 2025

INTRODUCTION

The demand for aesthetic and functional prosthodontic treatments is steadily increasing, driven by improvements in living standards, rising life expectancy, and greater social engagement.[1-3] Successful prosthodontic outcomes depend not only on clinical expertise but also on thoughtful treatment planning that considers patient preferences and expectations.[4-5] Patient satisfaction is most often linked to three key outcomes: function, comfort, and aesthetics.[3-5]

Traditionally, dental treatment planning followed a paternalistic model where dentists made most clinical decisions independently.[5-9] However, modern dentistry has shifted toward a more collaborative approach, where patients actively participate in treatment planning.[5,9,10] This has led to the increasing adoption of shared decision-making (SDM)- a process where treatment choices are made jointly by the patient and dentist, combining clinical evidence with patient values and preferences.[3,7,11]

Research shows that SDM can enhance patient satisfaction, increase adherence to treatment, and reduce the need for invasive procedures.[1,3,5,9,13,14] In fact, many health systems now recognize SDM as a cornerstone of patient-centered care, especially in high-income countries.[2-5,15] A

1. Assistant Professor, Department of Prosthodontics, Rawal Institute of Health Sciences.
2. Professor and Head of Department Prosthodontics, Rawal Institute of Health Sciences.
3. Assistant Professor, Department of Prosthodontics, Watim Medical and Dental College.
4. Senior Registrar, Department of Prosthodontics, Institute of Dentistry CMH Lahore Medical College.
5. Demonstrator, Department of Prosthodontics, Rawal Institute of Health Sciences.
6. Demonstrator, Department of Prosthodontics, Rawal Institute of Health Sciences.

Corresponding author: "Dr. Aqsa Akhtar Khan " < aqsa.akhtar1@gmail.com >

central aspect of SDM is patient autonomy (PA), where individuals are empowered to choose interventions based on their personal needs and goals.[1,3,4,6,7]

However, autonomy does not mean the dentist's role is diminished. Effective SDM involves balancing the patient's preferences with the clinician's expertise and the best available evidence.[1,7,9,13,18] This approach ensures the selected treatment plan is both clinically sound and aligned with the patient's expectations.

Prosthodontics offers a range of options-including removable, fixed, and implant-supported prostheses-for replacing missing teeth.[1,3,5,11,13] Selecting among these options depends not only on clinical findings but also on social, demographic, and economic factors.[5,7,9] These non-clinical variables can lead to significantly different treatment choices among patients with similar diagnoses in different regions or healthcare systems.[2,3,5,9]

Patient-specific factors such as age, gender, financial situation, education, and cultural background all influence treatment decisions.[4,6,9,11] Mismatches can occur when clinicians follow a strictly normative treatment model without considering patient preferences.[9,13,18] Despite the growing emphasis on SDM and patient-centered care, there is still limited research on how much autonomy dental patients prefer and how actively they wish to participate in decision-making.[1,3,7,8] While many articles discuss patient autonomy in theory, few explore it in real-world clinical settings-especially in low- and middle-income countries.[3,7,12]

In Pakistan, research on patients' attitudes toward prosthodontic treatment and decision-making is scarce. Most existing studies have focused on clinician-driven treatment outcomes, with little attention to patient preferences and the reasons behind their choices.

This study aims to fill that gap by exploring the factors that influence patients' decision-making when selecting various types of prostheses in a tertiary care setting in Islamabad. By understanding the social, economic, and psychological reasons behind patient choices, this research contributes new insight into how patient autonomy and shared decision-making are practiced in a local context-offering potential guidance for improving communication, treatment planning, and policy in prosthodontic care. This study addresses that gap by investigating the factors influencing patients' prosthodontic treatment decisions in a tertiary care hospital setting in Islamabad, Pakistan. While some research exists globally, there is a lack of region-specific data from South Asia that consider local cultural, social, and economic dynamics. This study aims to contribute novel insights into patient decision-making in prosthodontics within a Pakistani context, thereby enriching the global discourse on personalized, evidence-based dental care.

METHODOLOGY

This cross-sectional study was carried out in the Department of Prosthodontics at Rawal Institute of Health Sciences, Islamabad, between January and August 2021. We included all patients who visited the department during this period for the replacement of missing teeth. A focused non-probability sampling method was used to select participants.To determine the appropriate sample size, we used the Raosoft online calculator with a 95% confidence level, a 5% margin of error, and an estimated population size of 1.15 million. This yielded a sample size of 385, and all selected participants gave informed consent before taking part in the study.The study received ethical approval from the Institutional Ethical Review Committee (Approval No. RIHS/IRB/D/24/018).Data were collected using a structured questionnaire that was developed and validated in two phases. First, three subject experts from prosthodontics and public health reviewed the content to ensure it was clear, relevant, and comprehensive. After incorporating their feedback, we conducted a pilot study with 30 patients from the same department to test the questionnaire's clarity and ease of understanding. Minor adjustments were made based on this feedback to finalize the tool.

The questionnaire had two main sections:

1. Demographic and Socioeconomic Information: This part gathered data on participants' age, gender, education level, occupation, and household income. Socioeconomic status was assessed using commonly reported indicators from existing literature.
2. Treatment Decision Factors: This section explored the reasons why some patients declined the standard treatment plan proposed by their dentist and chose alternative options instead. The questions were based on the most frequently reported reasons from previous studies.

To minimize bias, all interviews were conducted face-to-face by a single, calibrated investigator. The investigator underwent specific training and practice interviews to ensure consistency. Interviews were held in a private space to maintain confidentiality and make participants feel comfortable sharing honest responses.

We analyzed the data using IBM SPSS Statistics (Version 21.0). Descriptive statistics (frequencies and percentages) were used to summarize the responses. To explore relationships between categorical variables, we used the Chi-square test. This test was chosen because it is well-suited for identifying associations between non-numerical (categorical) data. A p-value of less than 0.05 was considered statistically significant.

RESULTS

Among 385 participants, 54.28% were females and 57.92% in their middle age. Majority of respondents were married (74.50%) and with lower class socioeconomic status (56.10%) and had undergone previous dental treatment (77.40%). Only 22.56% participants had no previous experience of dental treatment.

Table 1: General characteristics of participants

Characteristics	Category	n	Percentage
Gender	Male	176	45.71
	Female	209	54.28
Age	Young adults (18–35)	98	25.45
	Middle-aged (36–59)	223	57.92
	Older adults (>60)	64	16.62
Marital Status	Married	288	74.50
	Unmarried	86	22.34
	Widowed	11	2.86
Socioeconomic Status	Upper class	70	18.18
	Middle class	99	25.71
	Lower class	216	56.10
Past Dental Treatment	Yes	298	77.40
	No	87	22.59
Past Dental Experience	No experience	87	22.56
	Satisfactory	76	19.74
	Good	134	34.80
	Bad	88	22.86
Acceptance of Plan	Accepted	61	15.84
	Not accepted/Alternate chosen	324	84.15

Among the 324 participants who did not accept the proposed standard treatment plan, the most commonly cited reason was high treatment cost (31.17%), followed by long treatment duration and busy schedules (27.47%). A smaller number reported needing faster treatment (14.81%) or having fear or dissatisfaction with previous dental procedures. These findings are detailed in Table 2.

Table 2: Reasons for not accepting the proposed treatment plan

Reason	n	Percentage (%)
Treatment cost is very high	101	31.17
Treatment time / busy schedule	89	27.47
Need quick treatment	48	14.81
Fear of extensive procedures	25	7.72
Do not want such extensive treatment	21	6.48
Do not want to undergo preprosthetic procedures	21	6.48
Previous dental treatment was not good	19	5.86
Total	324	100

Of those who cited cost as the reason for treatment refusal, more than half (54.45%) declined implant-supported fixed prostheses, while others opted out of implant-retained overdentures and tooth-supported prostheses. These figures are shown in Table 3.

Table 3: Treatment options refused due to cost

Treatment Option	n	Percentage (%)
Implant-supported fixed prosthesis	55	54.45
Implant-retained overdenture	23	22.77
Tooth-supported fixed prosthesis	12	11.88
Tooth-supported overdenture	3	2.97
Cast partial denture	8	7.92
Total	101	100

Statistical analysis using the Chi-square test showed significant associations between specific reasons for treatment refusal and the proposed standard treatment plans. For example, refusal due to high treatment cost and long treatment durations were both statistically significant ($p = 0.02$ and $p = 0.03$, respectively). Effect sizes were calculated using Cramér's V, indicating moderate associations ($V = 0.26$ for cost; $V = 0.23$ for treatment time). Confidence intervals were not computed due to categorical grouping, but subgroup sizes support the reliability of these associations.]

Table 4: Association between reasons for treatment refusal and standard plan

Reasons for not accepting treatment	n	Percentage (%)	p-value
High treatment cost	101	31.17	0.02**
Long treatment duration	89	27.47	0.03**
Do not want extensive treatment	21	6.48	0.050
Fear of extensive procedures	25	7.72	0.08
Preprosthetic procedures	21	6.48	0.050
Require immediate treatment	48	14.81	0.04*
Negative previous experience	19	5.86	0.07

Note: $p < 0.05$ considered statistically significant.

DISCUSSION

This study highlights the importance of patient autonomy preferences in dental care, especially when replacing missing teeth. Patients seek dental restoration primarily to regain function, but factors such as aesthetics, phonetics, psychological well-being, and social considerations also play critical roles.[1,3,5] A wide variety of prosthetic options exist, including removable prostheses (complete, temporary, and cast partial dentures) and fixed prostheses (crowns, bridges, and implants).[1-3] Treatment planning ideally involves a shared decision-making process between the patient and dentist. However, there is limited literature evaluating how patients make treatment decisions prior to beginning therapy, particularly whether they accept the most effective recommended treatments.[1,3,5] In our study, a majority of

patients (84.15%) declined the proposed standard treatment plan and opted for alternatives. The primary reasons for refusal were high treatment costs (31.17%), long treatment duration (27.47%), urgency for quicker care (14.81%), and fear of extensive procedures including pre-prosthetic interventions. These findings align with previous research emphasizing financial and time barriers as significant factors influencing treatment acceptance.While shared decision-making (SDM) is increasingly recognized in clinical medicine, its documentation in dentistry remains limited.[1,3] Benecke et al. reported that prosthodontic patients desire greater autonomy in treatment decisions compared to traditional medical settings.[3] Despite this, many dentists do not routinely use patient decision aids or fully engage patients in choosing between reasonable treatment alternatives.[2] Asa'ad similarly underscored the role of patient decision aids and informed consent as essential components of SDM in dentistry.[2] Education level has been frequently cited as a key factor affecting patient involvement in decision-making, consistent with Western studies. Age also influences participation, with older adults tending to take a more passive role, potentially due to lower clinical experience and educational levels.[16,18] In contrast to findings from Middle Eastern contexts where male family members often dominate health decisions[3,16] our analysis did not observe this pattern, suggesting a need for further research on gender roles in decision-making within different cultural settings.

Implant dentistry has rapidly advanced with improvements in diagnostics, surgical techniques, and CAD-CAM technology, making treatment outcomes more predictable.[11,17] However, the decision-making processes behind implant therapy remain underexplored. Alzahrani and Gibson's review highlighted the limited research on patient-dentist interactions during implant consultations and decisions regarding implant placement.[2] Osterberg et al. emphasized that aesthetic considerations often outweigh functional ones in tooth replacement decisions, with the position of missing teeth playing a crucial role in patient preferences and treatment acceptance.[11] Our study reflects similar variability in patient values and highlights the importance of individualized treatment planning.

Furthermore, patient-related factors such as the number of visits and treatment time were given moderate importance, consistent with findings from other studies on prosthodontic care in diverse settings.[11] Rocha et al. found that clinical and behavioral factors significantly impact oral health perceptions among mothers, supporting the need for integrating patient perspectives into treatment planning.[18] Hochadel proposed a clinical framework to support thorough decision-making, aiming for predictable outcomes aligned with patient needs.[18] Clinically, these findings emphasize the necessity for dentists to incorporate discussions about cost, treatment duration, and patient concerns during consultations to improve acceptance of optimal treatment plans. Developing more affordable treatment options and enhancing patient education could reduce refusal rates. From a policy perspective, public awareness initiatives about prosthetic options and insurance availability are essential to address financial barriers. Future studies should investigate interventions that promote shared decision-making and evaluate their impact on patient satisfaction and treatment outcomes. This study's limitations include its relatively small sample size and its institutional setting, which may not represent private dental care environments where costs vary. Larger, multicenter studies are recommended to validate these findings and increase their generalizability.

In conclusion, this study confirms that financial cost is the primary reason patients reject standard prosthodontic treatment plans. Additional factors such as treatment duration and urgency also significantly influence patient decisions. Addressing these barriers through patient-centered communication, education, and policy efforts is critical to improve treatment acceptance and dental care outcomes.

CONCLUSION

This study has certain limitations, including a small sample size and an institutional setting with less prosthesis treatment costs than private dental care facilities. Within specific parameters, we may state that: The majority of patients choose the alternative treatment plan over the recommended one; the main reason for this rejection is its high cost. Women expressed more fear of undergoing dental prosthesis therapy than did males. Men knew less about the benefits of the procedure. An immediate response is required to these issues. This includes initiatives to increase the general public's awareness of prostheses, the availability of insurance, and studies on reasonably priced materials. More studies from the patient's perspective should be conducted so that we can formulate better policies which will aid in achieving the ideal treatment plan for the patients.

CONFLICT OF INTEREST

None to declare

REFERENCES

1. Alsulamy N, Lee A, Thokala P, Alessa T. Views of stakeholders on factors influencing shared decision-making in the Eastern Mediterranean Region: a systematic review. Eastern Mediterranean Health J. 2021; 27:300-11.
https://doi.org/10.26719/emhj.20.139

2. Patil PG. Shared Decision Making in Prosthodontics and Implant Dentistry. Int J Prosthodont Restor Dent 2021;11:2.
https://doi.org/10.5005/jp-journals-10019-1307

3. Benecke M, Kasper J, Heesen C, Schäffler N, Reissmann DR. Patient autonomy in dentistry: demonstrating the role for shared decision making. BMC medical informatics and decision making. 2020;20:1-0.
https://doi.org/10.1186/s12911-020-01317-5

4. Reissmann DR, Bellows JC, Kasper J. Patient preferred and perceived control in dental care decision making. JDR Clinical & Translational Research. 2019;4:151-9.
https://doi.org/10.1177/2380084418811321

5. Khan DA, Azad AA, Aslam A, Ishfaque Q. Attitude of clinicians towards clinical decision-making in Prosthodontics. PAFMJ. 2021; 71:1782-86.
https://doi.org/10.51253/pafmj.v71i5.3846

6. Nedumgottil BM. A Study to Scrutinize the Aspects Concerning Patient Decision-making and Dental Prosthesis Selection. J Pharm Bioallied Sci. 2022; 14:S518-S521.
https://doi.org/10.4103/jpbs.jpbs_96_22

7. Shrirao ND, Deshmukh SP, Pande NA, Radke UM. An evaluation of patient's decisions regarding dental prosthetic treatment. J Indian Prosthodontic Society. 2016;16:366.
https://doi.org/10.4103/0972-4052.191287

8. Dalazen CE, Bomfim RA, De-Carli AD. Factors behind self-perceived need for dental treatment and prosthesis in Brazilian elderly people. Cien Saude Colet. 2018; 23:945-952.
https://doi.org/10.1590/1413-81232018233.09682016

9. Vieira AH, Leles CR. Exploring motivations to seek and undergo prosthodontic care: an empirical approach using the Theory of Planned Behavior construct. Patient Prefer Adherence. 2014; 8:1215-1221.
https://doi.org/10.2147/PPA.S69619

10. Vieira AH, E Silva DC, Nogueira TE, Leles CR. Exploring motivations to seek and undergo prosthodontic care: a cross-sectional study in a Brazilian adult sample. Patient Prefer Adherence. 2015; 9:803-809.
https://doi.org/10.2147/PPA.S81645

11. Zierden K, Grau LS, Wöstmann B, Rehmann P. Clinical Outcomes of Implant-Supported Dental Prostheses: A Retrospective Analysis Considering Patient-Related Factors. Int J Oral Maxillofac Implants. 2021; 36:985-991.
https://doi.org/10.11607/jomi.8784

12. Nayana P, Dhakshaini MR, Raghavendra SK, Sowmya S, Ravi MB. An Evaluation of Factors Affecting Patient's Decision Making Regarding Dental Prosthetic Treatment. J Evolution of Med Dent Sci. 2019. 9; 8:3683-8.
https://doi.org/10.14260/jemds/2019/797

13. Assery MK. Knowledge, attitude, and practice regarding prosthodontic rehabilitation and factors affecting the patients visiting private clinics in Riyadh, Saudi Arabia: A cross-sectional study. Journal of family medicine and primary care. 2019. 8;10:3362.
https://doi.org/10.4103/jfmpc.jfmpc_686_19

14. Murdoch AI, Blum J, Chen J, Baziotis-Kalfas D, Dao A, Bai K, Bekheet M, Atwal N, Cho SS, Ganhewa M, Cirillo N. Determinants of clinical decision making under uncertainty in dentistry: a scoping review. Diagnostics. 2023. 13;13:1076.
https://doi.org/10.3390/diagnostics13061076

15. Tabassum N, Ahmed S, Alshammari Y, Barri G, Alnafea M, Subhi M, Alatiyyah AA, Alarajah A. Patient's attitude towards dental treatment: treatment plan versus patient willingness. Int J Dentistry Res. 2017; 2:73-5.
https://doi.org/10.31254/dentistry.2017.2304

16. Wakabayashi N, Wada J. Structural factors affecting prosthodontic decision making in Japan. Japanese Dental Science Review. 2015; 51:96-104.
https://doi.org/10.1016/j.jdsr.2015.04.001

17. Leles CR, Freire MD. A sociodental approach in prosthodontic treatment decision making. Journal of Applied Oral Science. 2004; 12:127-32.
https://doi.org/10.1590/S1678-77572004000200009

18. Sayed ME, Jurado CA, Tsujimoto A. Factors Affecting Clinical Decision-Making and Treatment Planning Strategies for Tooth Retention or Extraction: An Exploratory Review. Nigerian J Clinical Practice. 2020; 23:1629-38.
https://doi.org/10.4103/njcp.njcp_649_19

19. Shafiei S, Yazdani S, Jadidfard MP, Zafarmand AH. Measurement components of socioeconomic status in health-related studies in Iran. BMC Res Notes. 2019;31:12:70.
https://doi.org/10.1186/s13104-019-4101-y