

RESEARCH ARTICLE



A Cross-Sectional Study to Analyse Patients' Decision-Making Variables for Prosthodontic Treatment

 OPEN ACCESS

Received: 15-02-2024

Accepted: 17-05-2024

Published: 03-06-2024

Janvi Kalra^{1*}, Pankaj Dhawan¹, Sapna Rani¹, Vidushi Saxena¹¹ Manav Rachna Dental College, MRIIRS, Sector-43, Surajkund Road, Faridabad, Haryana, India

Citation: Kalra J, Dhawan P, Rani S, Saxena V (2024) A Cross-Sectional Study to Analyse Patients' Decision-Making Variables for Prosthodontic Treatment. Indian Journal of Science and Technology 17(23): 2381-2389. <https://doi.org/10.17485/IJST/v17i23.423>

* Corresponding author.

janvikalra1999@gmail.com**Funding:** None**Competing Interests:** None

Copyright: © 2024 Kalra et al. This is an open access article distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Published By Indian Society for Education and Environment ([iSee](https://www.isee.org/))

ISSN

Print: 0974-6846

Electronic: 0974-5645

Abstract

Objectives: The patient's attitude, appropriate treatment planning, and decision-making are necessary to fabricate dental prostheses. This study aimed to evaluate the factors influencing patients' decision-making, patient expectations, and approval of the suggested treatment strategy regarding prosthodontic treatment by the population in the Faridabad region. **Methods:** A cross-sectional survey was carried out amongst 143 patients in the Department of Prosthodontics at Manav Rachna Dental College, Faridabad, over one month to determine patient's attitudes toward treatment for dental prosthesis. The self-administered questionnaire was made in both English and Hindi languages. The questionnaire's Part A section included demographic data about patients enrolled in the epidemiological survey. Part B of the survey assessed their attitude toward the absence of teeth. Part C comprised close-ended multiple-choice questions assessing the factors affecting decision-making. Part D assessed the patient's expectations from the prosthodontic treatment. Part E evaluated whether the suggested course of treatment was accepted and the reason why the suggested treatment course was rejected. **Statistical Analysis:** Logistic regression analysis and cross-tabulation analysis were performed using the SPSS 23.0 program to assess the relation between the decision to choose dental prosthesis treatment and independent variables using Tukey's test. **Findings:** In this analysis, the p-values for age, marital status, gender, level of education, and socio-economic status, when associated with the acceptance of the treatment plan, were all above 0.05, suggesting no statistically significant correlation in these specific associations. However, the elderly population (>60 years) showed a higher percentage of acceptance. Also, female patients readily accepted the suggested treatment plan. Most patients demonstrated acceptance of the proposed course of treatment, with financial considerations emerging as a primary deterrent for those who declined. However, patients were hesitant to get treatment done if surgery was required. **Novelty:** This epidemiological survey highlighted the importance of the development of health policies regarding dental treatment to make it more affordable for all socioeconomic groups. **Conclusion:** The importance that patients have on appearance and the crucial role that dentists play in

creating treatment plans. As a result, it draws attention to crucial areas that require improvement and intervention.

Keywords: Decision making; Prosthodontics; Treatment protocol; Patient education; Patient acceptance of healthcare

1 Introduction

Today's outlook on dentistry acknowledges the patient's emotions and psychological perspective in relation to dental concerns, dental care, and especially aesthetics.⁽¹⁾ Whether the teeth are present or not plays a significant role in maintaining self-confidence, as tooth loss requires substantial social and psychological readjustment. In dental offices, patients frequently encounter an extensive amount of information, which can be overwhelming, particularly regarding the options and requirements for prosthodontic treatment.⁽²⁾

It has been suggested that acceptance of new dental prostheses depends upon an individual's feelings about edentulism.⁽³⁾ For a particular clinical situation regarding edentulousness, various prosthodontic treatment options are available, such as removable, fixed, and implant-supported prostheses. Clinical judgment is dependent on experience and is highly complex. Inconsistency in the recommended course of treatment among clinicians is a real possibility.⁽⁴⁾ Among the multiple factors affecting clinical decision-making, such as the need for surgery, time required for the treatment, cost of treatment, etc., clinical case factors are of the most significant importance to dental practitioners. In the past, the dentist was responsible for selecting treatment options for a patient.⁽⁵⁾ But today, patients are taking a prominent role in deciding upon a particular treatment plan by mentioning their needs and expectations.⁽⁶⁾

The two-way communication to reach a preferred treatment plan is shared decision-making (SDM). According to the concept of SDM, clinicians and patients work together to select the best treatment option by using scientific evidence and considering clinicians' clinical experience and patients' preferences.⁽⁷⁾ Before devising a treatment plan, educating the patient about maintaining oral health is vital. This would ultimately improve the quality of life for geriatric patients by making sure that they are well-informed and actively involved in their treatment decision-making process.⁽⁸⁾

The choice to receive dental prosthetic treatment is anticipated to be affected by demographic factors such as gender, age, level of education, and financial status. Various other factors that might affect the process of decision-making are mindset towards the absence or presence of teeth, expectations regarding the treatment, and the current state of edentulism. Hence, formulating the plan for treatment-related dental prostheses and the factors that affect decision-making regarding treatment for dental prostheses are meaningful to the patients and the dentist.⁽⁹⁾ Patient's acceptance of suggested treatment, as measured by a questionnaire before they receive treatment, could be a valuable means for determining satisfaction with the treatment chosen.⁽¹⁰⁾

Evaluation of the factors that affect the patient's decisions regarding treatment choice, expectations, and acceptance of the suggested treatment plan is less frequently seen in the literature. In the past, factors pertaining to expenditure have been the ones that have been explored the most. This epidemiological survey pertains to assessing what other factors affect the patient's decision-making in relation to the treatment, such as the need for surgery, the dentist's reputation, the time required for the completion of treatment, etc. This survey also assessed whether they chose a treatment course different from the one recommended and provided reasoning or if they accepted the most appropriate treatment course that had been suggested to them.

2 Methodology

Before commencing the study, we obtained ethical approval from the institutional ethics committee (MRI-IRS/MRDC/SDS/IEC/2023/24). The survey adhered to the ethical principles of the Helsinki Declaration and Good Clinical Practice. Informed consent was provided by the patients in written forms.

Initially, the survey was provided to 30 patients not involved in the main study to ensure its comprehensibility and usability, allowing for necessary corrections. Patients reporting to the institute’s outpatient department at the Department of Prosthodontics were enrolled for the study according to the inclusion and exclusion criteria over one month, from 28th November 2023 to 28th December 2023.

The following survey was devised as a strategic tool to align dental care with patient expectations, fostering improved patient outcomes, informed decision- making, and a patient-centred healthcare approach. The survey questionnaire was subdivided into five parts.

Table 1.

A questionnaire-based survey for appraisal of decision-making factors amongst patients regarding options for missing teeth treatment		
S. No.	Question	Response
Demographic data		
1	Name	
2	Age	<input type="checkbox"/> 18-35 <input type="checkbox"/> 36-59 <input type="checkbox"/> >60
3	Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female
4	Marital Status	<input type="checkbox"/> Married <input type="checkbox"/> Unmarried <input type="checkbox"/> Divorcee <input type="checkbox"/> Widow
5	Education	<input type="checkbox"/> Primary School <input type="checkbox"/> High School <input type="checkbox"/> Graduate <input type="checkbox"/> Postgraduate
6	Socio-economic Status	<input type="checkbox"/> Upper class <input type="checkbox"/> Upper middle class <input type="checkbox"/> Lower middle class <input type="checkbox"/> Upper lower class <input type="checkbox"/> Lower class
General characteristics		
1	Do you believe the presence of teeth to be an important part of daily life?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2	Have you had work done on your missing teeth?	<input type="checkbox"/> Yes <input type="checkbox"/> No
3	Do you require a dentist’s services to restore any lost teeth?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Decision making factors		
1	How significant is the dentist’s reputation in your choice-making process?	<input type="checkbox"/> Very significant <input type="checkbox"/> Significant <input type="checkbox"/> Less significant <input type="checkbox"/> Not significant <input type="checkbox"/> Not sure
2	Quantity of appointments – how significant is this factor in your decision making?	<input type="checkbox"/> Very significant <input type="checkbox"/> Significant <input type="checkbox"/> Less significant <input type="checkbox"/> Not significant <input type="checkbox"/> Not sure
3	How significant is the appointment’s duration in your decision-making process?	<input type="checkbox"/> Very significant <input type="checkbox"/> Significant <input type="checkbox"/> Less significant <input type="checkbox"/> Not significant <input type="checkbox"/> Not sure
4	How significant is your family or friends’ advice in deciding on a prosthodontic (replacement of teeth) treatment?	<input type="checkbox"/> Very significant <input type="checkbox"/> Significant <input type="checkbox"/> Less significant <input type="checkbox"/> Not significant <input type="checkbox"/> Not sure
5	How significant do you believe current technology and digital planning are in your decision-making process?	<input type="checkbox"/> Very significant <input type="checkbox"/> Significant <input type="checkbox"/> Less significant <input type="checkbox"/> Not significant <input type="checkbox"/> Not sure
6	How has the lack of confidence caused by tooth loss impacted your capacity to make decisions?	<input type="checkbox"/> Very highly <input type="checkbox"/> Highly <input type="checkbox"/> Moderately <input type="checkbox"/> Not affected <input type="checkbox"/> Not sure
7	How does the need for surgery before prosthodontic treatment affect your decision making?	<input type="checkbox"/> Very highly <input type="checkbox"/> Highly <input type="checkbox"/> Moderately <input type="checkbox"/> Not affected <input type="checkbox"/> Not sure
Patient’s Expectations		
1	Did you consider prosthodontic treatment before making your appointment time?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2	Do you search treatment options before going to the prosthodontist?	<input type="checkbox"/> Yes <input type="checkbox"/> No
3	Which of the following considerations are vital when receiving prosthodontic treatment?	<input type="checkbox"/> Esthetics <input type="checkbox"/> Phonetics <input type="checkbox"/> Mastication <input type="checkbox"/> Other (if any, please specify)

Continued on next page

Table 1 continued

Acceptance of Treatment Plan	
1	Do you agree with the suggested treatment plan? <input type="checkbox"/> Yes <input type="checkbox"/> No
2	If 'No', specify the reason: <input type="checkbox"/> Not convinced regarding the proposed treatment plan <input type="checkbox"/> High expenditure <input type="checkbox"/> Poor dental experience in the past <input type="checkbox"/> Other (Please Specify)

2.1 Selection Criteria

Inclusion Criteria

- Patients with ages between 25-60 years of either sex.
- Patients in need of prosthodontic treatment.

Exclusion Criteria

- Participants with hearing impairments, neuromuscular disorders, and patients who cannot make decisions themselves.

2.2 Sample Size Estimation

The sample size was calculated based on the previous study.

Below α is the level of significance and is equal to 0.05. Estimation of sample size was performed using SPSS 23.0 software for a confidence level of 95% and Precision of 5%.

1-a/2 = Desired confidence level = 95%

Level of significance (α err prob) = 0.05

Power ($1-\beta$ err prob) = 0.80

Effect Size = 0.6

Output: A minimum sample size of 138 patients was calculated based on the criteria of inclusion.

2.3 Statistical Analysis

Logistic regression analysis and cross-tabulation analysis were performed using the SPSS 23.0 program. Tukey's test was used to identify the relation between independent variables and the decisions to receive dental prosthetic therapy. The following independent variables were assessed: demographic data (i.e., gender, age, education, marital status, and socio-economic level), expectations regarding dental prosthesis therapy, and expectations regarding past dental treatment.

3 Results and Discussion

3.1 Results

Over one month, 143 patients were recruited for the survey at the Department of Prosthodontics among patients requiring teeth replacement. The survey questionnaire was subdivided into five parts. Part A of the survey questionnaire acquired demographic information of patients enrolled in the survey. Part B of the survey questionnaire assessed their attitude towards the presence of teeth. Part C comprised close-ended multiple-choice questions assessing the factors affecting decision-making. Part D assessed the patient's expectations from the prosthodontic treatment. Part E evaluated acceptance of the suggested treatment course and the reason why the treatment course was rejected. The questionnaire was prepared in two languages, English and Hindi, to facilitate the processing of the data and avoid any ambiguity. Part A: The demographic data of the patients in this survey are depicted in Table 2. It included Age, Education, Gender, Marital status, and Socioeconomic status.

A cross-tabulation analysis was done using Tukey's test to compare the demographic data of the participants with the acceptance of the suggested treatment plan. The relation between age group and treatment acceptance was p-value=0.234. When associating gender with treatment acceptance, the correlation was found to be p-value=0.264. Marital status had a negative correlation with treatment acceptance, p-value=0.873. The p-value for both education and socio-economic status, when associated with acceptance of treatment, was found to be equal to 0.58 (Table 3).

Part B of the survey questionnaire evaluated the participants' general characteristics, such as the significance of teeth in their life and their attitude toward dental treatment (Figure 1).

Table 2. Demographic Data of Participants

	Characteristics	Frequency	Percent
Age	>60	46	32.2
	18-35	65	45.5
	36-59	32	22.4
Gender	Female	62	43.4
	Male	81	56.6
Marital status	Married	74	51.7
	Unmarried	60	42.0
	Widow	9	6.3
Education	Graduate	76	53.1
	High School	45	31.5
	Post-graduate	18	12.6
Socio-economic status	Primary School	4	2.8
	Lower Class	3	2.1
	Lower Middle Class	59	41.3
	Upper Lower Class	10	7.0
Total (n)	Upper Middle Class	71	49.7
		143	100

Table 3. Association of demographic data with treatment acceptance

Demographic Data	Acceptance of the Treatment Plan		P-Value
	No	Yes	
Age			0.234
>60	3	43	
18-35	10	55	
36-59	6	26	
Gender			0.264
Male	10	52	
Female	9	72	
Marital Status			0.873
Married	9	65	
Unmarried	9	51	
Widow	1	8	
Education			0.581
Graduate	12	64	
High School	4	41	
Post Graduate	3	15	
Primary Level	0	4	
Socio Economic Status			0.580
Lower class	0	3	
Lower middle class	10	49	
Upper lower class	2	8	
Upper middle class	7	64	

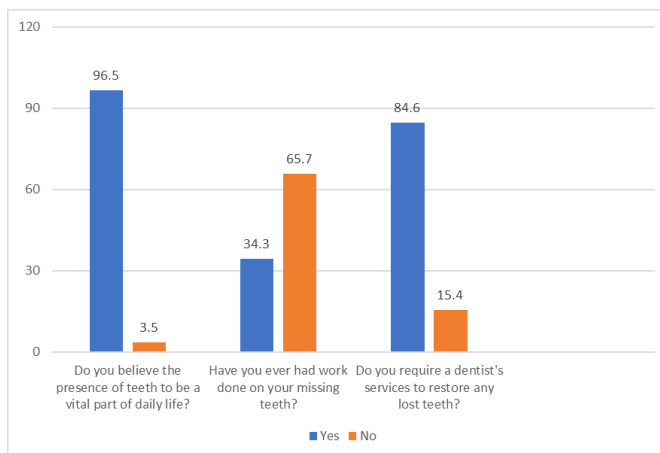


Fig 1. General Characteristics of Participants

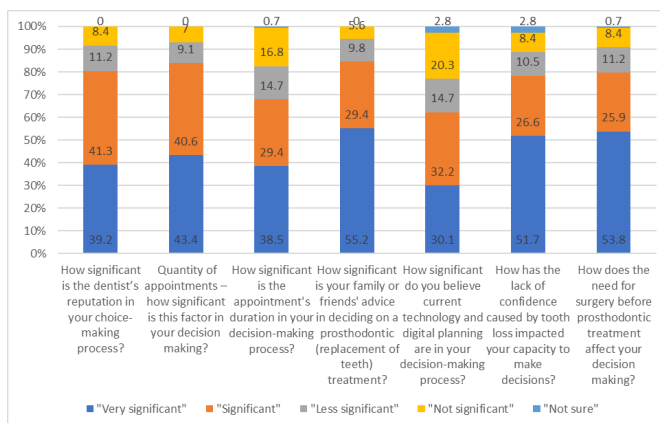


Fig 2. Decision-Making Factors

Part C of the questionnaire evaluated the decision-making factors regarding prosthodontic treatment, as shown in Figure 2. These factors determine what causes a patient to accept or reject the treatment plan.

Part D of the epidemiological survey evaluated the respondent's expectations regarding prosthodontic treatment, represented in Figures 3 and 4. A majority of patients preferred aesthetics.

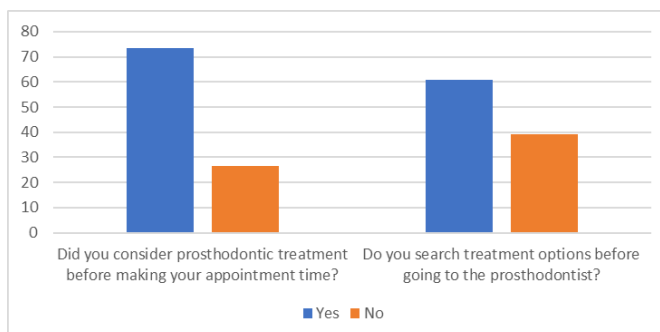


Fig 3. Patient's Expectations

Part E of the survey questionnaire evaluated patients' acceptance of the suggested treatment plan after explaining it to them. The majority of patients accepted the suggested treatment plan (86%).

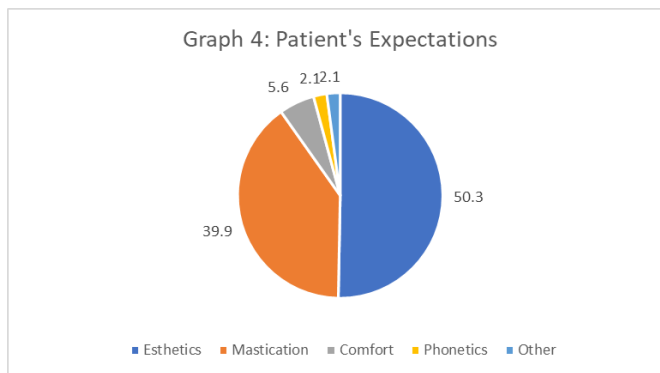


Fig 4. Patient's Expectations

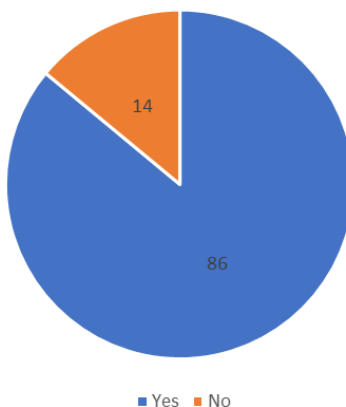


Fig 5. Do you agree with the suggested treatment plan?

Out of 143, 19 participants rejected the suggested treatment plan. The most common reason for rejecting the suggested treatment was its cost (Table 4).

Reasons for rejecting the treatment course	Frequency
Not convinced towards the suggested treatment plan	4
Poor dental experience in the past	3
High expenditure	11
Opted dental implant therapy	1
Total	19

3.2 Discussion

Prosthetic treatment has revolutionized patient treatment and solved clinical circumstances where other treatment modalities have failed. With the aging population and longer life expectancy, tooth loss is inevitable. To restore form, function, and aesthetics for life, replacing lost teeth has become more crucial.⁽⁸⁾

Various studies have been conducted to assess the factors that affect clinical decision-making regarding the choice of dental prosthesis by dentists.^(5,11) Patient appreciation towards the treatment conducted has also been studied.⁽¹¹⁾ **Brandt S**⁽²⁾ in his study emphasized that patients frequently encounter an extensive amount of information, which can be overwhelming, particularly when it comes to the options and requirements for prosthetic treatment.

This epidemiological study highlighted which factors in particular affect the decision-making of patients. A significant number of patients who participated in the survey were between 18 and 35 years of age and had a graduate education level, which agreed with the study conducted by **Alhaddad AJ et al.**⁽⁹⁾ In agreement with the study by **Nayana P et al.**⁽¹²⁾, a higher percentage of acceptance among elderly patients was seen, i.e., 93.5%, which showed a higher requirement for prosthetic treatment in geriatric patients. Hence, the geriatric group should be shown efficient care, and the research should focus on manufacturing newer prostheses and prosthetic materials according to the patient's needs and demands.

According to the research conducted by **Benecke M et al.**,⁽¹³⁾ patients considered dentists important in restoring any lost teeth and their proposed treatment plan to be vital, similar to the results found in Part B of our study. The survey provided valuable insights into the factors influencing patients' decision-making. The number of appointments emerged as a substantial factor, highlighting the impact of scheduling considerations on decision-making. The same results were analyzed in our study as well. **Alfouzan AF et al.**⁽¹⁴⁾ emphasized the influence of family or friends' advice in receiving prosthodontic treatment. The same was inferred from the current study conducted, emphasizing the impact of social networks on decision-making.

A study conducted by **Hall MA et al.**⁽¹⁵⁾ indicated differences in the knowledge, awareness, and perception of current technology and digital planning among the study subjects. Although not as uniformly perceived, digital planning still holds importance; this indicated a growing recognition of the role technology plays in shaping treatment decisions. The impact of tooth loss on decision-making is striking, noting a significant effect on confidence levels. **Renuka S et al.**⁽¹⁶⁾ stated that the desire for treatment regarding dental prosthesis has an association with extending edentulous space and affects the patient's confidence. A similar result was seen in this study, where the majority of patients reported a lack of confidence due to tooth loss. This underscored the psychological aspect of the loss of teeth and the need for holistic approaches in patient care.

The current study inferred a reluctance towards surgery before prosthodontic treatment, emphasizing the weight patients assign to procedural considerations. **Sana A et al.**⁽¹⁷⁾ reported fear or anxiety related to the extraction, fear of delayed wound healing, and improper guidance regarding treatment protocols as central factors in refusing pre-prosthetic procedures.

These findings collectively emphasize the multi-faceted nature of decision-making in missing teeth treatment, encompassing factors ranging from personal confidence to practical considerations. **Leelavathi L**⁽³⁾ also reported aesthetics as the main reason for teeth replacement among patients.

A majority of the patients who visited the department accepted the suggested treatment course (86%). This could be due to the lower costs of removable prostheses in the department. For the population who did not accept the suggested treatment plan (14%), the reason stated was "high cost," which falls in accordance with the previous study by **Parlani S et al.**⁽¹¹⁾. It is notable that the costs were considered higher in terms of fixed prostheses and implant-supported prostheses. Alternatively, when a removable prosthesis was suggested, patients agreed to the treatment plan.

The findings of the current survey suggested that most of the population was convinced that the treatment plan provided by the dentist still cost is a constraining factor, so future prospective studies with a larger population size involving multi-centres can be included. To address the challenges posed by patient reluctance, particularly in cases requiring surgery, proactive measures are recommended. Also, for those patients who require treatment regarding dental prosthesis but are unable to afford the treatment, government initiatives, such as implementing an oral health drive for the alienated group's prosthetic treatment, are vital.

There were a few limitations of the study, such as the sample size was limited and restricted to one institution only.

4 Conclusion

The responsibility lies on clinicians and professionals within the dental field to effectively communicate the significance of prosthetic treatment, fostering a proactive approach toward oral health maintenance. The pivotal role of dentists in formulating treatment plans and the emphasis placed on aesthetics by patients highlight critical areas for intervention and improvement.

It was seen that although demographic data did not have a significant effect on the acceptance of treatment ($p < 0.05$), the younger population, especially women, were more likely to accept the proposed treatment plan. This highlighted that the older population must be made aware of the significance of teeth in their life, as it will help in a better lifestyle in terms of social settings and nutrition as well.

Another factor that impacted the decision-making was the need for surgery prior to prosthodontic treatment. A staggering population of 53.8% were hesitant to undergo any surgical procedure. Therefore, patients must be assured about the safety of the procedure, and the importance of the surgery must be emphasized.

The cost of the treatment was another factor that led to the rejection of the treatment plan. Out of 19 patients who rejected the treatment plan, 11 patients stated high expenditure as a barrier to getting treatment done. This epidemiological study highlighted how significant it is to create health policies that will lower the cost of dental care for people of all socioeconomic backgrounds.

By eliminating the barriers to obtaining the recommended treatment, the dental community may make a substantial contribution to prosthetic solutions. It will ultimately contribute to the promotion of a population that is healthier and better informed.

References

- 1) Goldstein RE, Patzer G. Concepts of Dental Esthetics. In: Ronald E. Goldstein's Esthetics in Dentistry. Wiley. 2018;p. 1–22. Available from: <https://doi.org/10.1002/9781119272946.ch1>.
- 2) Brandt S, Lauer HC, Güth JF, Bühling S, Sayahpour B, Romanos G, et al. Impact of two different patient decision aids in prosthodontic consultations: a prospective randomized controlled study. *Clinical Oral Investigations*. 2023;27(12):7841–7849. Available from: <https://dx.doi.org/10.1007/s00784-023-05375-7>.
- 3) Leelavathi L, Rani SL. Awareness and Attitude Towards Missing Tooth Replacement Among Partially Edentulous Outpatients - A Hospital Based Study. *International Journal of Pharmaceutical Research*. 2020;12(1):2466–2474. Available from: <https://doi.org/10.31838/ijpr/2020.12.01.380>.
- 4) Murdoch AIK, Blum J, Chen J, Baziotis-Kalfas D, Dao A, Bai K, et al. Determinants of Clinical Decision Making under Uncertainty in Dentistry: A Scoping Review. *Diagnostics*. 2023;13(6):1–18. Available from: <https://dx.doi.org/10.3390/diagnostics13061076>.
- 5) Ellakany P, Fouda SM, Alghamdi M, Aly NM. Factors Affecting Clinical Decision-Making Among Dentists and Dental Students: A Cross-sectional Study. *The International Journal of Prosthodontics*. 2022;35(5):581–587. Available from: <https://dx.doi.org/10.11607/ijp.7359>.
- 6) Tomaselli G, Buttigieg SC, Rosano A, Cassar M, Grima G. Person-Centered Care from a Relational Ethics Perspective for the Delivery of High Quality and Safe Healthcare: A Scoping Review. *Frontiers in Public Health*. 2020;8:1–11. Available from: <https://dx.doi.org/10.3389/fpubh.2020.00044>.
- 7) Schell J, Cavanaugh K, Gutman T. Shared Decision-making. In: Evidence-Based Nephrology. John Wiley & Sons Ltd.. 2022;p. 473–487. Available from: <https://doi.org/10.1002/9781119105954.ch71>.
- 8) Shukla S, Awasthi A, Singh S, Arora M, Jain S. Awareness and Attitude of Geriatric Patients Regarding Implant Prosthodontic Options. *Journal of Advanced Sciences*. 2023;2(1):22–27. Available from: <https://dx.doi.org/10.58935/joas.v2i1.25>.
- 9) Alhaddad AJ, Munshi N, Ali WM, Aldoiej AA, Ali A, Alnemari FH, et al. Factors affecting patients' behaviors toward prosthodontic treatment needs in Saudi Arabia. *Medical Science*. 2021;25(118):3345–3355. Available from: https://www.discoveryjournals.org/medicalsecience/current_issue/v25/n118/A31.htm.
- 10) Nedumgottil BM. A study to scrutinize the aspects concerning patient decision-making and dental prosthesis selection. *Journal of Pharmacy And Bioallied Sciences*. 2022;14(Suppl 1):S518–S518. Available from: https://dx.doi.org/10.4103/jpbs.jpbs_96_22.
- 11) Parlani S, Tripathi S, Bhoyar A. A cross-sectional study to explore the reasons to visit a quack for prosthodontic solutions. *The Journal of Indian Prosthodontic Society*. 2018;18(3):231–238. Available from: https://dx.doi.org/10.4103/jips.jips_24_18.
- 12) Nayana P, Dhakshaini MR, Raghavendra SK, Sowmya S, Ravi MB. An Evaluation of Factors Affecting Patient's Decision Making Regarding Dental Prosthetic Treatment. *Journal of Evolved Medicine and Dental Science*. 2009;8(49):3683–3687. Available from: https://www.jemds.com/data_pdf/nayan%20pual-dec-9-.pdf.
- 13) Benecke M, Kasper J, Heesen C, Schäfer N, Reissmann DR. Patient autonomy in dentistry: demonstrating the role for shared decision making. *BMC Medical Informatics and Decision Making*. 2020;20:1–10. Available from: <https://doi.org/10.1186/s12911-020-01317-5>.
- 14) Alfouzan AF, Labban N, Al-Otaibi HN, Taweel SMA, Alshehri HA, Alradan M, et al. Public Perception and Motivation for Prosthodontic Rehabilitation in Saudi Arabia. *International Journal of Medical Dentistry*. 2022;26(2):291–302. Available from: <https://ijmd.ro/wp-content/uploads/2022/06/017-Afnan-F.-Alfouzan-291-302.pdf>.
- 15) Hall MA, Karawia I, Mahmoud AZ, Mohamed OS. Knowledge, awareness, and perception of digital dentistry among Egyptian dentists: a cross-sectional study. *BMC Oral Health*. 2023;23(1):1–9. Available from: <https://dx.doi.org/10.1186/s12903-023-03698-1>.
- 16) Renuka S, Kirubakaran SS, Sankari M. Perception of prosthodontic need of patients during and after extraction - A survey. *Drug Invention Today*. 2020;14(2):279–283. Available from: <https://openurl.ebsco.com/EPDB%3Agcd%3A3%3A24752979/detailv2?sid=ebsco%3Aplink%3Ascholar&id=ebsco%3Agcd%3A142963151&cl=c>.
- 17) Sana A, Saleem T, Aziz A, Abbas M. Why do Patients Refuse Pre-Prosthetic Procedures? A Qualitative Study in a Private Sector Dental Teaching Institute. *Pakistan Armed Forces Medical Journal*. 2022;72(3):1032–1036. Available from: <https://dx.doi.org/10.51253/pafmj.v72i3.7777>.