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Why do Patients Refuse Pre-Prosthetic Procedures? A Qualitative Study in a Private Sector Dental Teaching Institute

Aleeza Sana, Tayyaba Saleem*, Anbreen Aziz, Maira Abbas***

School of Dentistry, Islamabad Pakistan, *Islamabad Medical and Dental College, Islamabad Pakistan, **Armed Forces Institute of Dentistry/National University of Medical Science (NUMS), Rawalpindi Pakistan

ABSTRACT

Objective: To explore the factors leading to patient non-compliance toward pre-prosthetic mouth preparation.

Study Design: Qualitative exploratory study.

Place and Duration of Study: Prosthodontic Department of Islamabad Dental Hospital, Bara khau Islamabad Pakistan, from May to Jul 2020.

Methodology: Semi-structured interviews were conducted from purposively selected fifteen partially dentate patients who were advised but had refused to get pre-prosthetic mouth preparation. Five content experts validated interview questions. After thematic analysis, the authors developed a consensus regarding themes and subthemes of factors that cause non-compliance of patients toward pre-prosthetic mouth preparation.

Results: Eight themes emerged. Patients were afraid of extraction and scaling and were concerned about cross-infection control, and they were short of time due to busy schedules and lengthy procedures. Few diabetic patients could not go for extraction of their teeth immediately. Patients also refused due to financial constraints and lack of awareness regarding treatment protocols. Some believe myths that removing the teeth results in other diseases such as cancer. Few quoted previous bad dental experiences and were not willing for any pre-prosthetic procedure. In addition, patients were not satisfied with the treatment plan and the associated treatment cost.

Conclusion: Fear or anxiety related to extraction or scaling, time and financial constraints, fear of delayed wound healing, and improper guidance regarding treatment protocols were central factors in refusing pre-prosthetic procedures. Patient counselling must be done regardless of patient refusal, and patient concerns should be addressed.

Keywords: Clinical protocols, Dental prosthesis, Prosthodontics, Partial denture, Patient non-compliance, Pre-prosthetic.

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INTRODUCTION

Patients seeking replacement of teeth require a thorough examination and sophisticated treatment planning for the success of prostheses. Often, the dentist comes across variations of the oral hard and soft tissues that can result in a poor prognosis of a prosthesis.[1] Improving these variations usually requires pre-prosthetic mouth preparation, which refers to procedures that prepare the oral cavity to receive the prosthesis.[2] It helps restore optimal hard and soft tissue health and contours to increase the prosthesis's success, efficiency, and longevity.[3,4]

Pre-prosthetic interventions typically based upon a multidisciplinary approach involve periodontal, surgical, soft tissue conditioning, restorative, and orthodontic preparation.[2] They include minor oral surgical procedures such as removing retained roots or impacted teeth, frenectomy, alveoloplasty, vestibulopathy etc.[2] Furthermore, sophisticated surgical procedures such as ridge augmentation procedures, sinus lifting, osteotomies, and distraction osteogenesis are also involved in mouth preparation.[3] Patient compliance is of foremost concern to the dentist and the success of treatment.[5] Patients may show non-compliance toward a treatment plan that involves pre-prosthetic interventions.[5] These patients either look for alternative options or choose not to receive treatment.[5]

Non-compliance is multifactorial. It can result from the patient's general health, beliefs, personality traits, internal motivation, time availability, the significance of comfort, function, and esthetics provided by prosthesis.[6] In addition, several social and cultural influences and demographic characteristics such as gender, age, education, awareness, and economic conditions may also influence patients' decisions regarding pre-prosthetic treatments.

Past literature has shown the most prevalent factor towards non-compliance.[4,7] In contrast, this study aims to qualitatively explore the new elements

Correspondence: Dr Aleeza Sana, Demonstrator, School of Dentistry, Islamabad-Pakistan.

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that may lead to non-compliance with pre-prosthetic mouth preparation. It would help identify the factors in-depth so that a better treatment protocol could be followed by developing a consensus between the doctor and the patient.

METHODOLOGY

This qualitative study was conducted from May to July 2020 at Prosthodontic Department of Islamabad Dental Hospital, Bara khau Islamabad Pakistan, after approval from the Institutional Review Board (Ref no. IMDC/DS/IRB/155, dated April 25, 2020).

Inclusion criteria: Patients with partially dentate arches who required but refused pre-prosthetic mouth preparation were purposively selected to get in-depth information regarding non-compliance with pre-prosthetic procedures.

Exclusion criteria: Completely edentulous patients, patients who were willing to get pre-prosthetic mouth preparation, and those who were not willing to participate were excluded from the study. In addition, most of the patients were either uneducated or had taken only primary education; hence, the education level of patients was not added to the inclusion criteria.

An interview guide having semi-structured questions regarding factors leading to non-compliance towards pre-prosthetic mouth preparation, informed consent and interview recording protocols were developed. A few steps from the AMEE Guide 87 were followed to create semi-structured questions.[8] First step was conducting a literature search regarding the topic of research. Followed by which the second step was to develop items. The third step was conducting expert validation from five content experts (FCPS Prosthodontics). The fourth and last step was the conduction of pilot testing from three patients fulfilling inclusion criteria. Later, with some minimal changes, seven open-ended, easy-to-understand questions were finalized, keeping in view the language concerns of the patients.

No language barrier existed between the transcriber, the interviewer, and the patients. The interviewers were trained and built rapport with patients before the interview. Patients who fulfilled the inclusion criteria and consented to participate in the study were appointed for the interview. Interviews were scheduled on different days to avoid the interviewer's fatigue and smoothly conduct the iterative data collection and analysis process. Data collection started by obtaining written informed consent from willing patients utilizing an interview guide. Interviews were conducted in a separate room within the Prosthodontics Department of the study institute, to which the patients were previously acclimatized. This was done to lessen workplace distractions, gain the patient's trust, ensure confidentiality, and complete the interview within the patient's familiar surroundings. The average time of the interview was four to six minutes. Conversations were audio-recorded and later tran-scribed verbatim by two authors to minimize errors. The data were saved on a password-protected laptop. Transcripts were then anonymized before sharing with other authors for data analysis. An iterative approach to data collection and analysis was followed,[9] and information was saturated at the fifteenth participant. Two more interviews were done for confirmation of data saturation.

Thematic analysis of the data was carried out by reading each line and segment of the interview to get in-vivo codes. Then, subthemes were identified by reading the transcribed data again. Finally, after substantial discussion among all authors, categorization of subthemes was done to formulate the main themes.[10] Findings have been reported in tabulated form.

RESULTS

Participants were mainly males, 10 (67%) with an age range of 30 to 50 years, 9 (60%), and all were partially dentate (Table-I).

Table-I: Characteristics of the study participants (n=15).

Characteristics	n= 15	n (%)
Gender	Male	10 (67%)
	Female	5 (33.33%)
Age Range (Years)	A1: 30-40	5 (33.33%)
	A2: 41-50	4 (27%)
	A3: 51-60	3 (20%)
	A4: 61-70	3 (20%)
Education Status	Uneducated	8 (53.33%)
	Primary	3 (20%)
	Secondary	3 (20%)
	Graduation	1 (6.67%)
Type of Arch	Partially dentate	15 (100%)

Participants' perceptions regarding non-compliance towards pre-prosthetic mouth preparation are given in tabulated form Table-II. Furthermore, Figure showed the coding tree, including the codes, subthemes and the themes resulting in non-compliance towards pre-prosthetic mouth preparation. Twelve subthemes emerged from the data under eight main themes.

Participants disclosed that they were afraid of extraction and scaling, which were required before

Table-II: Factors leading to non-compliance towards preprosthetic mouth preparation.

Themes	Subthemes	Representative Quotes
Fear of treatment	Procedural fear of extraction and scaling	"I have got a number of extractions done, and it was not a pleasant experience as it made me drowsy." (M, A1, P#08) "The process of teeth cleaning is painful, and it results in bleeding as well." (M, A1, P#03)
	Fear of becoming edentulous	"I do not want to go for tooth removal and complete toothless all at once." (M, A4, P#04)
Time constraints	Busy schedule	"I don't have time as my duty is tough and the whole treatment requires much time." (M, A1, P#14)
	Lengthy procedures	"I did not get my teeth extracted because the wound will take time much to get fine." (F, A3, P#12)
Fear of delayed wound healing	Systemic disease (Uncontrolled Diabetes)	"When my sugar will be controlled, I will get my teeth removed and also get my eye operation done." (F, A2, P#06) "I did not get my teeth extracted because the wound will take time to get fine as I have sugar." (F, A1, P#09)
Financial constraints	Non-affording	"I cannot afford treatment; if I had money, I would get the treatment done." (F, A3, P#02) "I did not get cleaning and filling of my teeth because I asked for a free treatment. I also asked them to make free of cost teeth, but they said it was not possible." (F, A1, P#09)
Lack of awareness regarding treatment protocols	Lack of awareness	"I thought that I will go for a day or two and will get my teeth, but today is my third visit, and only two teeth have been filled. I need to wait for more days to get my new teeth." (M, A4, P#05) "I do not think removing the teeth is necessary; I am tired of so many teeth removal." (M, A1, P#08)
	Believe in myths	"Will roots removal result in some other disease such as cancer. My brother-in-law caught cancer after his eye operation was done." (F, A2, P#06)
Fear of cross-infection	Ignorant about sterilization of equipments	"The instruments I think are not clean; I may get hepatitis from them." (M, A4, P#13)
Poor past dental experience	Inexperienced doctor and students	"Students here experiment and learn on patients and I had a bad past experience as my last treatment lasted for two to three months because the doctor was not experienced." (M, A2, P#07)
Improper guidance and miscommunication	Improper guidance regarding treatment expenses	"I do not have an idea of the entire treatment cost for tooth removal." (M, A2, P#07)
	Miscommunication regarding treatment plan	"I was first misinformed that my tooth could be saved by filling but later they told me that it needed removal." (M, A1, P#08) "First they did not recommend any treatment then said to get teeth cleaned and to get removal of the lower two teeth." (F, A1, P#10)

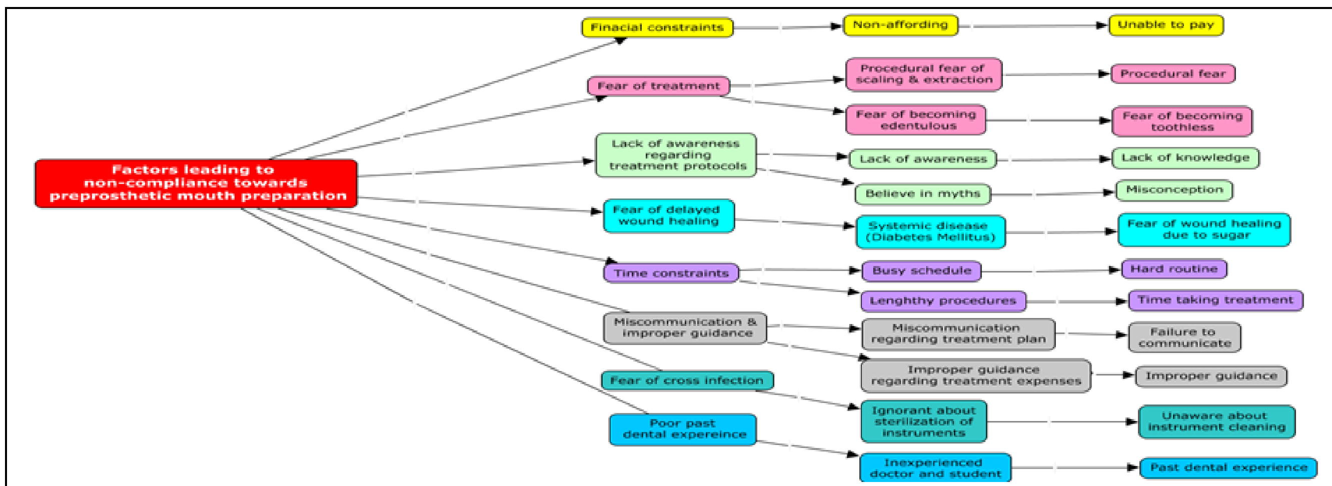

Figure: Coding Tree.

**M-Male, F-Female, A-Age group (1-4), P-Participant no*

tooth replacement. Their main fear was extracting all remaining teeth and becoming edentulous as the doctor advised it as a pre-prosthetic procedure. They were also concerned regarding cross-infection control during their mouth preparation procedures. However, most patients did not have time for lengthy pre-prosthetic procedures due to their busy schedules. In addition, few patients had diabetes, and they were concerned about their wound healing.

Moreover, the patients lacked awareness regarding the pre-prosthetic procedures before tooth replacement. For example, one of the patients believed in myths that removing their teeth might result in other diseases such as cancer. In addition, few patients had a bad previous dental experience. Therefore, they were not willing to any pre-prosthetic procedure. In addition, patients reported that they were not given proper guidance regarding a complete treatment plan or the exact total cost, including all pre-prosthetic procedures.

DISCUSSION

The primary objective of this study was to explore the factors leading to patient non-compliance toward pre-prosthetic mouth preparation. The factors that lead to the refusal in this study are fear of pre-prosthetic procedures, time and financial constraints, fear of delayed wound healing due to uncontrolled diabetes, inadequate guidance regarding comprehensive treatment plan and total expenses, and bad previous dental experience, and fear of cross-infection. Contextual factors identified in this study are lack of proper guidance regarding the comprehensive treatment plan, total expenses and miscommunication, and misunderstanding regarding the treatment plan.

The participants were afraid of surgical procedures in this study, such as extraction. Surgical procedures cause anxiety and distress, as they are associated with pain.[11] One of the most highlighted themes of this study remained fear and anxiety about dental treatment. The patient's statements include "the process of teeth cleaning is painful, and it results in bleeding as well", and "I have got a number of extractions done, and it was not a pleasant experience as it made me drowsy," clearly indicate treatment phobia. In a previous study, the author concluded that surgical treatments have a high degree of nervousness associated with them; that is why any procedure requiring surgery might result in anxiety and lowers confidence.[5] Delfino described fear associated with pain and needles as a significant factor causing phobias and hence non-compliance by patients.[12] Another study stated that dental anxiety results in infrequent dental services amongst patients.[13,14] In one study, the author established a significant relationship between fear of gender and past dental experience.[7,15] In the present study, one of the patients was afraid of a bad previous dental experience.

Many patients in this study expected immediate replacement of their teeth and refused pre-prosthetic procedures due to time constraints. In a previous study, non-compliance due to increased treatment duration was only 12.4% of the study participants.[5] Whereas in our study, 67% (10/15) participants were working males with a busy schedule and thus refused to mouth preparation which could be the reason for this difference in results.

Few patients were reluctant to undergo pre-prosthetic mouth preparation procedures due to systemic illnesses, especially diabetes, that delays wound healing. The participant's quote,"I did not get my teeth extracted because the wound will take time to get fine as I have diabetes," clearly indicates the fear regarding wound healing. Patients with comorbidities fear that the condition could get worse or hinder healing.[13] General physical illness is the most prevalent cause of noncompliance.[5, 15,16]

Financial constraint is a significant factor of non-compliance in many previous studies.[17,18] It was the most common reason for opting for alternate treatment in a study done by Nayana *et al*,[19] In this study, few patients were concerned about treatment costs. It could be due to their understanding that replacing teeth at a teaching dental hospital will have a nominal price, and additional procedures suggested were adding a financial burden on them. This study has highlighted various essential factors that patients refuse pre-prosthetic mouth preparation in the Pakistani context.

This study will help dentists reduce treatment fear, highlight the importance of pre-prosthetic procedures, and emphasize the total time required to complete procedures for treatment success. It is essential to discuss the complete treatment plan with patients, counter their myths, and answer queries in detail to their satisfaction. Awareness campaigns among patients regarding the importance of preprosthetic mouth preparation must be done over time. Researchers can conduct future longitudinal research to see the impact of awareness campaigns and the frequency of patients

refusing mouth preparation procedures. Lastly, investigating non-compliance towards these treatment protocols in patients with different geographical locations with higher patient literacy should be carried out to study the role of education in changing perspectives.

LIMITATIONS OF STUDY

The limitations of the study are that complete denture patients could have been included in the study. Moreover, data could have been collected from different sites, considering patients' socioeconomic backgrounds and literacy rates, to study the factors for non-compliance with pre-prosthetic mouth preparation procedures.

CONCLUSION

This study concluded that one of the primary reasons patients refuse the pre-prosthetic treatment is fear or anxiety associated with the pre-prosthetic procedures. The other reasons are lack of time, systemic illness, and lack of proper guidance in reading the complete treatment plan and the total expenses.

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Author's Contribution

AS: Proposal development, data collection, transcription, analysis and manuscript drafting, TS: Supervision, data analysis, final review, addition of useful content before submission, AA: Data analysis, contribution in write up and review, MA: Conceived the idea, data collection, transcription, initial coding.

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