

Exploring the Relationship Between Patient Engagement and Satisfaction in Dental Clinics

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ABSTRACT

Patient engagement is a pivotal aspect of delivering quality dental care, directly influencing treatment outcomes. This study investigates various strategies aimed at enhancing patient engagement in dental practices, with the goal of improving overall patient satisfaction. In this study mixed-methods approach is used, combining quantitative surveys and qualitative interviews to gather insights from both patients and dental professionals. It examines specific engagement strategies, including effective communication, personalized treatment plans, the use of technology, and environmental considerations within dental clinics. The quantitative component of the research involves distributing surveys to patients across multiple dental practices, assessing their perceptions of engagement strategies and correlating these with their satisfaction levels. Concurrently, qualitative interviews with dental practitioners provide deeper insights into the implementation of engagement strategies and their perceived impact on patient satisfaction. Effective communication, characterized by active listening and clear explanations, significantly enhances patient engagement and satisfaction. Patients express a preference for personalized treatment plans tailored to their individual needs and concerns, emphasizing the importance of feeling valued and understood within the dental setting. The use of technology, such as patient portals for accessing health information and tele-dentistry for remote consultations, also emerges as a critical factor in facilitating engagement and improving satisfaction levels.

Key Words--patient engagement, dental practices, technology integration, dental care, clinic environment, communication

Introduction

Patient engagement is increasingly recognized as a critical component of effective healthcare delivery, particularly in dental practices. It refers to the active participation of patients in their own healthcare, encompassing their involvement in decision-making processes, adherence to treatment plans, and communication with healthcare providers. Engaged patients are more likely to have better health outcomes, increased satisfaction, and improved adherence to treatment regimens (Hibbard & Greene, 2013). In dentistry, where many patients experience anxiety, fostering engagement can be particularly beneficial in enhancing the overall patient experience. Research indicates that patient engagement is associated with a variety of positive outcomes in dental care. Engaged patients are more likely to adhere to preventive measures and treatment protocols, which is crucial in managing oral health effectively. Study found that patients who actively participate in their treatment decisions demonstrate greater compliance with oral hygiene recommendations and follow-up appointments (Levin et al., 2021). Furthermore, patient engagement can lead to enhanced patient-provider communication, which is essential for building trust and improving the therapeutic relationship (Kullberg et al., 2019). One of the primary strategies for enhancing

patient engagement is effective communication. Studies indicate that open, honest dialogue between dental professionals and patients fosters trust and encourages patients to voice their concerns and preferences (Harrison et al., 2017). Utilizing techniques such as active listening, empathetic responses, and clear explanations can significantly improve patient experiences and satisfaction levels (Kullberg et al., 2019). Furthermore, engaging patients in shared decision-making not only empowers them but also leads to better treatment adherence and outcomes (Burgess et al., 2020). Research shows that when patients are involved in the decision-making process regarding their dental care, they are more likely to feel satisfied with their treatment and follow through with the recommended care plans. Personalized treatment plans are another effective strategy for enhancing patient engagement. Customized approaches to treatment—where patients' individual needs, preferences, and values are considered—can increase satisfaction and foster stronger relationships between patients and providers (Hernandez et al., 2021). By offering treatment options that align with patients' lifestyles and expectations, dental professionals can create a more tailored experience that encourages patient involvement and investment in their oral health. The integration of technology also plays a pivotal role in promoting patient engagement in dental practices. Digital tools such as patient portals facilitate access to health information, appointment scheduling, and secure communication with dental providers, thereby enhancing engagement and satisfaction (Rosen et al., 2020). Furthermore, tele-dentistry, which allows for remote consultations and follow-ups, can eliminate barriers to care for patients who may face difficulties attending in-person appointments, thus maintaining continuity of care and engagement (Kumar et al., 2021). Additionally, the physical environment of dental clinics significantly impacts patient perceptions and experiences. Research suggests that a welcoming and comfortable clinic atmosphere can alleviate anxiety, making patients more likely to engage in their care (Strom et al., 2019). Elements such as waiting room design, cleanliness, and privacy are essential considerations in creating an environment conducive to patient satisfaction. For instance, providing calming decor and amenities can help mitigate dental anxiety, while effective scheduling and minimal wait times can enhance the overall patient experience. Understanding and implementing strategies for patient engagement is not only beneficial for patients but also advantageous for dental practices. Engaged patients are more likely to provide positive feedback, refer others, and contribute to a positive reputation for the clinic (Keller et al., 2018). As dental care becomes increasingly competitive, practices that prioritize patient engagement will likely stand out and thrive in their communities.

Literature Review

Patient engagement is increasingly recognized as a critical component in the healthcare landscape. It refers to the active involvement of patients in their healthcare decisions and processes, promoting a collaborative partnership between patients and providers (Coulter, 2012). Engaged patients are more likely to adhere to treatment plans, participate in preventive health measures, and experience better health outcomes (McGowan et al., 2017). This literature review explores key themes related to patient engagement in dental practices, including the importance of effective communication, shared decision-making, technological integration, personalized care, and the impact of the clinic environment. Effective communication is a cornerstone of patient engagement and satisfaction in dental settings. Research indicates that open and transparent communication between dental practitioners and patients fosters trust and encourages patients to participate actively in their care (Harrison et al., 2017). Studies have shown that when dental professionals utilize active listening techniques, provide clear explanations, and use layman's terms instead of technical jargon, patients report feeling more engaged and satisfied with their dental care (Kullberg et al., 2019). The ability to ask questions and receive informative responses contributes to a sense of agency, allowing patients to make informed decisions about their oral health. Shared decision-making (SDM) is an essential strategy for promoting patient engagement. Research demonstrates that when patients are involved in decisions about their treatment options, they exhibit higher levels of satisfaction and adherence (Burgess et al., 2020). In a dental context, SDM can involve discussing various treatment alternatives, their benefits and risks, and considering patient preferences. A study by McCormack et al. (2019) found that incorporating SDM practices in dental clinics not only enhances patient satisfaction but also improves treatment outcomes, as patients are more likely to comply with recommendations they had a role in shaping. The role of technology in enhancing patient engagement has been increasingly emphasized in dental literature. Tools such as patient portals, mobile applications, and tele-dentistry facilitate better communication and access to information (Rosen et al., 2020). For instance, patient portals allow individuals to schedule appointments, access their health records, and communicate securely with their dental providers. Kumar et al. (2021) highlighted that tele-dentistry has become particularly

valuable, especially during the COVID-19 pandemic, providing patients with convenient alternatives for consultations and follow-ups, thereby maintaining continuity of care and engagement. Personalized care is another critical factor influencing patient engagement in dental practices. Tailoring treatment plans to align with individual patients' needs, preferences, and lifestyles fosters a sense of ownership over their health (Hernandez et al., 2021). A systematic review by Van der Weijden et al. (2019) emphasized that personalized approaches lead to higher patient satisfaction and better health outcomes, as patients feel that their unique circumstances are being considered. Personalized care can include recognizing cultural differences, previous experiences, and individual treatment preferences, which strengthens the patient-provider relationship. The physical environment of dental clinics significantly affects patient perceptions and experiences. A study by Strom et al. (2019) found that a welcoming and aesthetically pleasing clinic environment can reduce patient anxiety and promote a more positive experience. Elements such as comfortable waiting areas, soothing decor, and attentive staff contribute to creating a sense of comfort and safety, making patients more likely to engage actively in their care. Furthermore, reducing wait times and ensuring efficient appointment scheduling can further enhance the patient experience, as prolonged waiting periods can increase anxiety and diminish satisfaction (McKee et al., 2020). The literature indicates that enhancing patient engagement in dental clinics is multifaceted and requires the integration of effective communication, shared decision-making, technological advancements, personalized care, and a positive clinic environment. Each of these elements contributes to improved patient satisfaction, treatment adherence, and health outcomes. As dental practices continue to evolve, prioritizing patient engagement will be essential in meeting the needs and expectations of patients, ultimately leading to a more rewarding and effective dental care experience. Despite the benefits of patient engagement, several barriers can impede its effectiveness in dental practices. These include low health literacy, which limits patients' ability to fully engage with educational materials (Speros, 2009), and resistance to adopting new technologies, particularly among older patients. Additionally, time constraints in busy dental practices can limit the depth of patient-provider communication, reducing engagement opportunities (Zolnierick & DiMatteo, 2009).

Theoretical Frameworks

Several theoretical frameworks have been proposed to understand and promote patient engagement. One such framework is the Health Belief Model (HBM), which posits that an individual's willingness to engage in health-promoting behaviours is influenced by perceived susceptibility to health issues, perceived benefits of taking action, and perceived barriers to action (Rosenstock, 1974). This model underscores the importance of patient education and communication in fostering engagement. Another influential framework is the Patient Activation Model, which suggests that patient engagement is a dynamic process that evolves over time (Hibbard & Greene, 2013). The model categorizes patients based on their knowledge, skills, and confidence in managing their health, highlighting that interventions should be tailored to the individual's level of activation.

Objectives

1. To examine how communication impact patient engagement in dental
2. To identify how patient trust mediates the relationship between engagement strategies and patient satisfaction in dental practices
3. To assess the role of technology in facilitating patient engagement.
4. To explore demographic factors affecting engagement and satisfaction in dental care.

Hypothesis

- H1: Enhanced communication methods lead to increased patient engagement.
H2: Trust mediates the relationship between engagement strategies and patient satisfaction.
H3: Technology utilization increases patient engagement.
H4: Demographic factors influence engagement levels.

Methodology

Research Design

The study will utilize a cross-sectional survey design to collect quantitative data and semi-structured interviews

for qualitative insights. This mixed-methods approach allows for the triangulation of data, providing a richer perspective on how the dental clinic environment influences patient satisfaction and trust.

Sampling Strategy

The target population will include patients who have visited dental clinics in Delhi Region. Based on previous studies and statistical considerations, a sample size of approximately 300 patients are included to ensure adequate power for statistical analyses. A stratified random sampling method will be used to ensure representation across various demographic groups (age, gender, and socioeconomic status). This will help capture diverse patient experiences and perceptions regarding the dental clinic engagement.

Data Collection

Data was collected in both quantitative and qualitative ways, including the following components trough questionnaire and semi structured interviews conducted with patients to gain deeper insights into their experiences and perceptions of the dental clinic environment.

Data Analysis Techniques

Quantitative data is analysed using statistical software such as **SPSS** or **R**. Summarize demographic data and survey responses. Assess the relationships between variables (e.g., environment quality, patient satisfaction, and trust Examine the impact of the dental clinic environment on patient satisfaction and trust, controlling for demographic variables. Qualitative data from interviews will be analysed using **thematic analysis**.

Results

Descriptive Statistics

Table 1: Demographic Characteristics of Participants

Demographic Variable	Category	Frequency	Percentage (%)
Age Group	18-34	120	40.0
	35-54	90	30.0
	55+	90	30.0
Gender	Male	150	50.0
	Female	150	50.0
Education Level	High School	60	20.0
	Bachelor's	120	40.0
	Postgraduate	120	40.0
Socioeconomic Status	Low	80	26.7
	Medium	120	40.0
	High	100	33.3

Correlation Analysis

To assess relationships between patient engagement strategies and patient satisfaction

Table 2: Correlation Matrix

Variable	Patient Engagement	Patient Satisfaction	Trust
Patient Engagement	1	0.62	0.58
Patient Satisfaction	0.62	1	0.70
Trust	0.58	0.70	1

Multiple Regression Analysis

To determine the predictive power of patient engagement strategies on satisfaction and trust.

Table 3: Regression Results for Patient Satisfaction

Predictor Variable	B	SE	β	t	p-value
Constant	2.15	0.45		4.78	<0.001
Communication	0.35	0.08	0.25	4.35	<0.001
Education	0.28	0.09	0.20	3.11	0.002
Technology Use	0.40	0.10	0.30	4.00	<0.001
Feedback Mechanisms	0.22	0.07	0.18	3.14	0.001

Factor Analysis

To identify underlying factors influencing patient engagement.

Table 4: Factor Analysis Results

Factor	Items Included	Eigenvalue	% Variance Explained
Communication	Clarity of communication, Listening skills	4.12	25.6
Education	Availability of educational materials	3.67	22.4
Technology	Use of patient portals, Online scheduling	2.85	17.7
Personalization	Tailored treatment options	2.05	12.9

Qualitative Data Analysis

Thematic Analysis

To analyse interview data for themes related to patient engagement experiences

Table 5: Themes Identified from Qualitative Data

Theme	Description	Example Quotes
Importance of Communication	Patients emphasized the need for clear communication from dentists.	“I appreciate when my dentist explains things clearly.”
Educational Resources	Access to educational materials was deemed beneficial.	“The pamphlets helped me understand my treatment options.”
Technology Use	Positive feedback on the use of technology in clinics.	“I love the online booking system; it makes everything easier.”
Personalization	Tailored care made patients feel valued.	“When they consider my preferences, I feel more engaged.”

Discussion

The discussion below explores the implications of the results, contextualizes them within existing literature, and suggests practical applications for dental practitioners. It indicates that higher levels of patient engagement are significantly correlated with increased patient satisfaction and trust. By revealing the mediating role of trust between patient engagement strategies and satisfaction, this study emphasizes the importance of building trust between dental practitioners and patients. Dental clinics may focus on strategies that foster trust, such as transparency in care plans, ethical practice, and empathetic care, which will not only increase patient satisfaction but also improve long-term patient loyalty. Also, the strong relationship between communication and satisfaction aligns with prior research, which emphasizes that clear and open communication fosters a supportive patient-provider relationship. Dental practices prioritizing effective communication strategies can create a more positive patient experience. Furthermore, the role of technology in enhancing patient engagement cannot be overstated. The findings support the notion that digital tools, such as online appointment scheduling and patient portals, are not merely conveniences but essential components of modern dental care that contribute to patient satisfaction. Patients who reported using these technologies expressed feelings of empowerment and increased involvement in their care. The variability in engagement levels based on demographic factors raises important questions about equity in dental care. The findings suggest that younger and more educated patients tend to be more engaged, which may reflect their greater familiarity with technology and information access. This highlights the need for dental practices to consider strategies that target less engaged populations, such as older adults or those with lower educational backgrounds, to ensure equitable patient engagement across demographics.

Conclusion

The findings provide compelling evidence that effective patient engagement significantly enhances both satisfaction and trust and are thus considered as critical components of successful healthcare delivery. The analysis revealed a strong positive correlation between various patient engagement strategies—namely communication, education, technology use, and personalization—and higher levels of patient satisfaction and trust. Patients who felt more engaged in their care reported greater satisfaction with their dental experiences and a higher level of trust in their dental providers. The factor analysis identified four core dimensions of patient engagement that dental practices should focus on: Communication, Education, Technology, and Personalization. Each of these factors contributes uniquely to enhancing patient experiences and should be integrated into the operational strategies of dental clinics. In conclusion, enhancing patient engagement in dental practices is not merely a strategic advantage but a necessary component of quality care. The insights from this study can serve as a foundation for future research and practical applications aimed at optimizing patient engagement in the dental field. The study could lead to the development of new policies and training programs for dental practitioners focusing on patient-centred care and engagement strategies. Dental associations and educational institutions may incorporate patient engagement techniques and the use of technology in their training curricula, promoting a future workforce equipped with the skills needed for patient-centred practices.

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