

Exploring Predictors of Patient Satisfaction in Dental Services: A Secondary Analysis Study

Mohammed S Aldossary¹, Eman H Ismail², Mashael M Almutawaa³, Shahad M Alhajri¹,
Afnan M Almuaddi¹, Mervat M El Dalatony^{1,4}

¹General Directorate of Research and Studies, Ministry of Health, Riyadh, Saudi Arabia; ²Clinical Dental Science Department, College of Dentistry, Princess Nourah bint Abdulrahman University, Riyadh, Saudi Arabia; ³Department of Prosthodontics, College of Dentistry and Nursing, Vision Colleges, Riyadh, Saudi Arabia; ⁴Public Health & Community Medicine Department, Faculty of Medicine, Menoufia University, Shibin El Kom, Menoufia Governorate, Egypt

Correspondence: Eman H Ismail, Clinical Science Department, College of Dentistry, Princess Nourah bint Abdulrahman University, Airport Road, Riyadh, Saudi Arabia, Email ismail.e.h@hotmail.com; ehismail@pnu.edu.sa

Purpose: Understanding the factors that influence the level of patient satisfaction with dental services and identifying the strengths and weaknesses in dental clinics will subsequently increase patient satisfaction and contribute to improving dental care quality. This study aims to evaluate the variables that impact patients' satisfaction with dental services received in specialized dental care centers of the Ministry of Health in Saudi Arabia.

Patients and Methods: Secondary data at the national level from a patient experience program were used in this study. Completed Press Ganey[®] surveys submitted by patients during the first half of 2022 were included. The effect of the different domains (access to dental clinic, moving through dental visit and dentist) on the overall assessment rating of patient satisfaction was assessed using Pearson's correlation coefficient (r) and multiple linear regression models.

Results: A total of 964 surveys were completed and subsequently analyzed. The overall assessment rate of patient satisfaction was 73.4%. All items of the domains showed highly significant correlation levels ($P < 0.001$). However, the Dentist domain exhibited the highest correlation with the overall assessment rate of patient satisfaction.

Conclusion: The dentist acts as the most significant predictor of patient satisfaction.

Keywords: patient satisfaction, patient-centered care, quality of health care, Saudi Arabia

Introduction

Public awareness of health is growing; thus, as patients become more informed, their expectations also increase.¹ The term "patient satisfaction" has been used more frequently not just in the healthcare field but also at the community level.² Satisfaction is defined as the person's emotion of pleasure or disappointment after evaluating how well or poorly a product met their expectations.³ Accordingly, during their healthcare journey, patients' subjective experience of care, referred to as "patient satisfaction", reflects the whole healthcare experience and is a top priority for healthcare managers and policymakers.² Intellectual, emotional, and psychological factors, and the patient's past experiences and expectations, make up patient satisfaction.³ Fulfillment of patients' expectations and needs, positive assurance, good communication with the patient, and resolution of the patient's confusion and doubts, would result in greater patient satisfaction and their return to avail further high-quality treatment.⁴

Evaluation of healthcare delivery should always be considered in any health service organization to identify problems and help healthcare managers and workers decide to improve the quality of care provided.⁵ Patient satisfaction is one of the "triple objectives" of healthcare quality. Hence, health institutions assess patient satisfaction through patient surveys, which usually divide healthcare satisfaction into domains. Third-party vendors, such as Press Ganey, enter into contracts with healthcare organizations in various countries to provide patient satisfaction data for healthcare quality improvement.⁶



Similar to all medical fields, understanding the factors that affect the level of patient satisfaction with dental services and identifying the different aspects of strengths and weaknesses in dental centers will aid in improving patient satisfaction and dental care quality.¹ Therefore, patients' level of satisfaction with dental services must be monitored to meet patient needs, improve patient compliance, and maintain the reputation of such institutions.⁷

In Saudi Arabia, the patient experience program in the Ministry of Health (MOH) employs a survey designed and administered by Press Ganey nationwide.⁸ This survey is a standardized self-administered questionnaire that determines patients' experience with healthcare services provided by MOH's different specialties, including dental services.^{8–10}

Therefore, this study aims to assess factors that can predict patients' level of satisfaction with dental care provided in Saudi MOH specialized dental centers.

Materials and Methods

This study collected the secondary data of Saudi patients who visited MOH's specialized dental clinics (n = 29) across the Kingdom of Saudi Arabia during the first half of 2022 (January–June 2022). These data were obtained from the patient experience program of Saudi MOH. Generally, no questions in the Press Ganey questionnaire are mandatory to be answered, and each patient is free to answer the questionnaire completely or partially. For consistency, we included only those survey questionnaires that were answered completely. This study was approved by the Central Institutional Review Board of the MOH in Saudi Arabia (approval No.: 22-42M).

We focused on the responses to 13 questions from the following three main domains related to dental care: access to dental clinic (5 questions), moving through dental visit (3 questions), and dentist (5 questions). We also gathered the overall assessment rates. The questions are written in Arabic and English. The survey is usually shared with patients through their registered mobile phones within a couple of days following their visit to the dental clinic, inviting them to participate by providing feedback after they were explained the survey objectives and ensured information confidentiality.

The questionnaire asked the patients to rate their experience on a 5-point Likert scale, from 1 as “very poor” to 5 as “very good”.

Statistical Analyses

Data were managed and edited using Microsoft Excel (Microsoft Office 2019, Microsoft Corp, Redmond, WA, USA). All the statistical data were analyzed using the Statistical Package for the Social Sciences (IBM SPSS Statistics 25, Armonk, NY, USA). Descriptive statistics were conducted. The effect of the four domains on the overall assessment rating was assessed using Pearson's correlation coefficient (r) and multiple linear regression models (significance level at 0.01 for r and 0.05 for the regression analyses).

Results

Out of 7549 responses obtained during the first half of 2022, only 964 (12.8%) were complete and included in this study. [Table 1](#) shows the overall satisfaction scores of the dental care domains.

[Table 2](#) lists the detailed questions (items) of the four Press Ganey survey domains and their correlations with the overall assessment rate. All domain items exhibited highly significant correlation levels ($P < 0.001$). However, the Dentist domain had the highest correlation with the overall assessment rate of patient satisfaction.

Regarding the factors affecting patient's overall assessment rate of dental care, regression analysis revealed that the domain of Access to the dental clinic was not statistically significant ($P = 0.036$), but the Dentist domain acts as the most significant predictor of patient satisfaction ($P < 0.001$, [Table 3](#)).

Table 1 Overall Results of the Press Ganey Survey Domains' Satisfaction Score for Dental Care Settings

Domain	Access to Dental Clinic	Moving Through Dental Visit	Dentist	Overall Assessment Rate
Mean of satisfaction score (% of 5)	3.29 (65.8)	3.38 (67.6)	3.75 (75)	3.67 (73.4)

Table 2 Correlations of Patient Satisfaction with the Domains (Access to Dental Clinic, Moving Through Dental Visit, and Dentist), and the Overall Assessment Rate

Domains	Variables	Mean±SD	Correlation Coefficient	P value
Access to dental clinic	Availability of appointments at a day/time that met your needs	3.01±1.61	0.635	0.001**
	Ease of scheduling your appointment	3.12±1.61	0.592	0.001**
	Ease of contacting (eg, email, phone, internet) the dental clinic	2.73±1.52	0.574	0.001**
	Ease of registration process upon arrival	3.77±1.39	0.640	0.001**
	Courtesy of the receptionist	3.86±1.32	0.629	0.001**
	Overall Access Domain	3.29±1.29	0.709	0.001**
Moving through dental visit	How well you were kept informed about any delays	3.22±1.50	0.714**	0.001**
	The comfort of the reception room	3.39±1.42	0.640**	0.001**
	Wait time at the dental clinic (from arriving to leaving)	3.54±1.42	0.716**	0.001**
	Overall Moving through Domain	3.38±1.30	0.762**	0.001**
Dentist	How well the dentist listened to you	3.85±1.47	0.836**	0.001**
	Explanations the dentist gave you about your problem or condition	3.83±1.48	0.841**	0.001**
	Dentist's efforts to include you in decisions about your care	3.74±1.51	0.848**	0.001**
	Explanation of your options for treatment	3.70±1.54	0.857**	0.001**
	Likelihood of you recommending this dentist	3.64±1.60	0.863**	0.001**
	Overall Dentist Domain	3.75±1.46	0.883**	0.001**

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

Table 3 Predictors of the Overall Assessment Rate

Domain	R Square	Adjusted R Square	Standard Error	Confidence Interval (95%)		t	P value
				Lower Bound	Upper Bound		
Access to dental clinic	0.802	0.802	0.028	0.004	0.113	2.096	0.036**
Moving through dental visit			0.030	0.137	0.253	6.590	0.001**
Dentist			0.021	0.615	0.697	31.433	0.001**

Note: **Regression is significant at the 0.05 level.

Discussion

Using a nationwide database, this study identified the factors influencing patient satisfaction with dental treatment and shared recommendations for mitigating any source of dissatisfaction.

Patient satisfaction reflects patients' demands and expectations for using healthcare services.¹¹ Therefore, patients' level of satisfaction is increasingly used as a measure of healthcare quality.^{12,13} It is based not only on treatment quality but also on multiple factors, such as staff behaviors, facilities, and basic environmental needs.¹¹ Therefore, in the absence of healthcare service quality indicators, patient satisfaction should be evaluated because it frequently highlights the effectiveness of the provided healthcare services and the readiness of the healthcare system.¹¹

In this study, all parameters and items of the domains had a highly significant correlation with the patients' overall satisfaction.

The item regarding waiting time at the dental clinic (from arriving to leaving) was not the highest predictor of patient satisfaction, as reported by some other previous studies. This result may be explained by the fact that the "Sehhaty" application of MOH in Saudi Arabia provides users with wide-ranging healthcare services, including appointment booking, enabling them to access integrated healthcare. In a study involving pediatric otolaryngology outpatient clinics in the USA, the low Press Ganey satisfaction scores among pediatric patients in otolaryngology were related to longer waiting periods.¹² In another study conducted in South Korea, patient satisfaction was proportionally related to waiting time at dental clinics; therefore, positive responses to waiting time positively correlated with patient satisfaction.¹⁴

In China, costs, transportation, waiting times, and cleanliness were considered less significant predictors of patients' overall satisfaction with outpatient health services than treatment outcomes and physician–patient communication.¹⁵ Similarly, another study found that the highest mean score of patient satisfaction was reported for dental treatment, particularly satisfaction with the patient–dentist interaction during treatment, followed by facilities, and then appointments.⁷

Likewise, the highest satisfaction score in dental healthcare centers in Kuwait was with dental performance, which accounted for 42.6% of the overall satisfaction, followed by dental assistants.¹⁶

Our study highlights the influence of patient satisfaction with the dentist on the overall rating because the Dentist domain showed the highest correlation with the overall assessment rate of patient satisfaction. Of note, the dentist explains the treatment options available for a patient's case and exerts some effort to engage the patient in making healthcare decisions in addition to clarifying the whole problem or condition. These results are comparable to those of a study involving 129 participants at the National Guard Health Affairs Dental Center in Riyadh, Saudi Arabia.¹ This previous study demonstrated that most of the participants were satisfied with the dentist's courtesy and respectful attitude, especially the clear language used for explaining the treatment plans, in addition to the provided services.¹

Consistent with these results, a study in Finland explored the self-reported factors of the patients that can improve dental care and found that the dentist's understanding approach, attentiveness, and compassion were highly valued by the study participants.¹⁷

Similarly, clinicians' helpfulness, expertise, competency, and kindness, in addition to the explanation on the exact diagnosis and treatment plan to the patient, emerged as key predictors of patient satisfaction among Portuguese patients who visited an emergency department.¹⁸

Limitations

This study has some limitations that need to be addressed. First, using secondary data, we encountered a few missing variables, such as the characteristics and demographics of the study population; these variables would have added important information to our study. Second, the sample size is relatively small on a national level. The Press Ganey surveys are dependent on patient participation, thereby limited by patient cooperation. Finally, a huge number of incomplete data were excluded, considering answering all the questions is not mandatory in Press Ganey surveys.

Conclusion

In conclusion, our findings revealed that patients' overall satisfaction with their dental care journey is primarily influenced by the dentist. This is evident from the high levels of correlation detected between patients' satisfaction levels and the dentist domain of the Press Ganey survey among Saudi patients. This underscores the crucial role of dentists in ensuring high-quality dental care. However, other patient satisfaction domains, such as Moving Through and Access During Dental Visit, also play a significant role in overall patient satisfaction. All these factors act as indicators of overall healthcare quality. Finally, patient satisfaction is a complex, multifactorial topic that requires further investigation to gather more details and contribute to the ongoing improvement of healthcare services.

Acknowledgments

This research was funded by Princess Nourah bint Abdulrahman University Researchers Supporting Project number (PNURSP2023R350), Princess Nourah bint Abdulrahman University, Riyadh, Saudi Arabia. We extend our gratitude to the General Directorate of Patient Experience Center, Ministry of Health, Riyadh, Saudi Arabia, for their valuable support and provision of the necessary data for the successful completion of this study.

Disclosure

The authors report no conflicts of interest in this work.

References

1. Subait AA, Ali A, Alsammahi O, et al. Perception and level of satisfaction of patients seeking dental care; a cross-sectional study in a major healthcare center in Saudi Arabia. *J Dent Oral Disord.* 2016;2(4):1021.
2. Alsayali MM, Al-Sahafi A, Mandoura N, et al. Patients' satisfaction after primary healthcare centers' integration with ministry of health hospitals, Jeddah. *J Epidemiol Glob Health.* 2019;9(2):135–142. doi:10.2991/jegh.k.190522.001
3. Patel YD. A study on evaluation of patient satisfaction with dental healthcare services. *Int J Sci Res Pub.* 2014;4(8):3277.
4. Madhulatha G, Manasa P, Jaya Krishna B, Harshavardhan T. Evaluation of contentedness of patients over the services provided by comprehensive oral healthcare system. *Int J Curr Res.* 2017;9(09):57674–57677.
5. do Amaral JHL, Vasconcelos M, Gomes VE, et al. User satisfaction with the secondary dental care services: is there an association between structure and work process? *Community Dent Oral Epidemiol.* 2022;50(1):27–37. doi:10.1111/cdoe.12716
6. North F, Tullledge-Scheitel SM. Patient satisfaction with providers: do patient surveys give enough information to help providers improve specific behaviors. *Health Serv Res Manag Epidemiol.* 2020;6:1–6.
7. Balhaddad AA, Alshammari A, Alqadi A, Nazir MA. Patient satisfaction with dental services and associated factors in a Saudi dental institution. *J Clin Diagn Res.* 2018;12(12):ZC36–ZC39. doi:10.7860/JCDR/2018/38358.12399
8. Aldossary MS, Alahmary MA, Almutawaa MM, et al. Patient satisfaction in dental healthcare settings at Saudi ministry of health: a Descriptive Study. *Patient Prefer Adherence.* 2023;17:2377–2383. doi:10.2147/ppa.s419978
9. Ministry of Health - Saudi Arabia. Available from: <https://www.moh.gov.sa/en/Ministry/pxmp/Pages/default.aspx>. Accessed December 5, 2023.
10. Senitan M, Alhaiti AH, Gillespie J. Patient satisfaction and experience of primary care in Saudi Arabia: a systematic review. *Int J Qual Health Care.* 2018;30(10):751–759. doi:10.1093/intqhc/mzy104
11. Adhikary G, Shawon MSR, Ali MW, et al. Factors influencing patients' satisfaction at different levels of health facilities in Bangladesh: results from patient exit interviews. *PLoS One.* 2018;13(5):e0196643. doi:10.1371/journal.pone.0196643
12. Redding TS, Stephens AR, Kazmers NH, Park AH. Evaluation of factors impacting patient satisfaction in a pediatric otolaryngology clinic. *Int J Pediatr Otorhinolaryngol.* 2022;156:111122. doi:10.1016/j.ijporl.2022.111122
13. Afrashtehfar KI, Assery MKA, Bryant SR. Patient satisfaction in medicine and dentistry. *Int J Dent.* 2020;2020:6621848. doi:10.1155/2020/6621848
14. Ji MG, Lee MR. The convergence research on waiting time, hospital image, and patient satisfaction in dental care consumers. *J Converg Inf Technol.* 2018;8(4):27–35. doi:10.22156/CS4SMB.2018.8.4.027
15. Zhang H, Wang W, Haggerty J, Schuster T. Predictors of patient satisfaction and outpatient health services in China: evidence from the WHO SAGE survey. *Fam Pract.* 2020;37(4):465–472. doi:10.1093/fampra/cmaa011
16. Ali DA. Patient satisfaction in dental healthcare centers. *Eur J Dent.* 2016;10(3):309–314. doi:10.4103/1305-7456.184147
17. Taina K, Pirjo K, Vuokko A. Self-reported factors for improving patient's dental care: a pilot study. *Clin Exp Dent Res.* 2022;8:1284–1294. doi:10.1002/cre2.625
18. Abidova A, da Silva PA, Moreira S. Predictors of patient satisfaction and the perceived quality of healthcare in an emergency department in Portugal. *West J Emerg Med.* 2020;21(2):391–403. doi:10.5811/westjem.2019.9.44667

Patient Preference and Adherence

Dovepress

Publish your work in this journal

Patient Preference and Adherence is an international, peer-reviewed, open access journal that focusing on the growing importance of patient preference and adherence throughout the therapeutic continuum. Patient satisfaction, acceptability, quality of life, compliance, persistence and their role in developing new therapeutic modalities and compounds to optimize clinical outcomes for existing disease states are major areas of interest for the journal. This journal has been accepted for indexing on PubMed Central. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <https://www.dovepress.com/patient-preference-and-adherence-journal>