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## Impact of Dental Services on Patients' Perception at Private Dental Clinics in Riyadh, Saudi Arabia.

Main Researcher

Sami Alhabib

Second Researcher

Osamah Albarikan

<sup>1</sup> University Name & City:

Department of Health  
Administration, Collage of Business  
Administration, King Saud  
University, Riyadh, Saudi Arabia

\* Corresponding author:

E-mail address:

[osamah1410@yahoo.com](mailto:osamah1410@yahoo.com)

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### Impact of Dental Services on Patients' Perception at Private Dental Clinics in Riyadh, Saudi Arabia

#### Abstract:

This cross sectional descriptive study aims to evaluate the patients' perception of received services across private dental clinics in Riyadh, Saudi Arabia by measuring the satisfaction level toward patient–dental staff interaction, technical competency, system/administrative efficiency and clinic setup/environment. These dimensions assessed using self-administrated questionnaires distributed through several dental clinics. Results show that treatment's pre-explanation, privacy, and later advice gained the highest satisfaction, while the treatment incompleteness, side talking of the staff and the long waiting time before getting the treatment were the most discontent aspects. The mean score of satisfaction with patient–dental staff interaction was 63.8%, technical competency was 59.8%, system/administrative efficiency and clinic setup/environment was 54.9%. The overall satisfaction level was 59.5%. There is an essential need establish policies and guidelines to adjust the relationship between dental staff and their patients. Specialized bodies should develop and apply code of professional conduct to enhance the technical competency of dental staff. They are required to provide sufficient level of human, technological, administrative and financial resources to keep up with the growing steady demand on the dental care services and to assist in offering appropriate, fast and comprehensive treatment.

**Keywords:** patient satisfaction; dental staff; dental services; private dental clinics; Saudi Arabia

#### المخلص:

تهدف هذه الدراسة المقطعية الوصفية لتقييم انطباعات المرضى حيال الخدمات التي يتلقونها في عيادات طب الأسنان الخاصة بمدينة الرياض بالمملكة العربية السعودية، وذلك عبر قياس مستوى الرضا تجاه ثلاثة جوانب هي: التفاعل بين المرضى وأفراد طاقم طب الأسنان، والكفاءة الفنية لأفراد طاقم طب الأسنان، وفاعلية الإجراءات الإدارية والتنظيمية وتجهيزات وبيئة العيادة. تم تقييم الانطباعات باستخدام استبانات ذاتية التعبئة وزعت على العديد من عيادات طب الأسنان. حظي الشرح المسبق للإجراء الطبي، والحفاظ على خصوصية المريض، وتقديم النصح والتوجيه بعد الجلسة بأعلى مستوى من الرضا، بينما حاز عدم تقديم العلاج الكامل، والأحاديث الجانبية بين أفراد طاقم طب الأسنان، وطول وقت الانتظار قبل العلاج على أكبر قدر من الاستياء. أظهرت النتائج أن متوسط نسبة الرضا تجاه التفاعل بين المرضى وأفراد طاقم طب الأسنان 63.8%، وتجاه الكفاءة الفنية لأفراد طاقم طب الأسنان 59.8%، وتجاه فاعلية الإجراءات الإدارية والتنظيمية وتجهيزات وبيئة العيادة 54.9%، فيما كان المعدل الإجمالي لنسبة الرضا 59.5%. هناك حاجة ماسة لإيجاد تنظيمات وتوجيهات لضبط العلاقة بين أفراد طاقم طب الأسنان والمرضى. ينبغي على الجهات المتخصصة والمعنية إنشاء وتطبيق مدونات لقواعد السلوك المهني لتحسين الكفاءة الفنية لأفراد طاقم طب الأسنان وتوفير القدر الملائم من القدرات البشرية والتقنية والإدارية والمالية لمواكبة الطلب المتزايد على خدمات طب الأسنان وللمساعدة في تقديم خدمات علاجية ملائمة وسريعة ومتكاملة.

كلمات مفتاحية: رضا المرضى، طاقم طب الأسنان، خدمات طب الأسنان، عيادات الأسنان الخاصة، المملكة العربية السعودية

## Introduction

Patient plays the pivotal role of giving the intrinsic value for any healthcare facilities in terms of quality, perfection, integrated institutional and professional work (Saha, et al., 2008). It has a significant role in determining the health outcomes and in the quality of health-care services provided by any health-care organization, since that, patients' satisfaction is one of the most important purpose and strategic goal for all healthcare providers (Alrasheedi, et al., 2019). Hospitals and healthcare systems that invest in programs to detect how patients evaluate their experiences will gain valuable information toward transformational changes in care delivery and services (Ferrand, et al., 2016). Therefore, Measuring quality outcomes and patients' satisfaction with healthcare services classified as a priority and a primary competitive yardstick in healthcare. The ongoing organizational, methodological and technological paradigm changes in health and social care result in health systems transformation toward P5 systems medicine (personalized, preventive, predictive, participative and precision medicine). Such system comprised fully distributed, highly dynamic, strongly integrated, multi-disciplinary (or multi-domain) intelligent ecosystems. It includes both structured systems, communities governed by rules, and combinations thereof (Blobel, 2019).

Patient satisfaction defined as level of an individual's experience compared with his or her expectations (Sathiyaseelan, et al., 2015). Therefore meeting patient expectations by taking time to understand the needs and giving the right instructions is associated with higher satisfaction (Aldosari, et al., 2017). Enhancing such experience reduces the burden associated with new client gaining, satisfied patients more easily kept, and the value of an existing client usually increases with time. While in the other hand patient's dissatisfaction could result in a loss of long-term gains because of decreased retention, fewer repeat visits, and conveyance of dissatisfaction with the organization to others. Patient's satisfaction is a performance indicator that measures the extent to which patient is contented with the level of care provided by health-care institutions and providers (Alrasheedi, et al., 2019). It also may represented as the degree to which anticipated goals have been accomplished with inclusion of both cognitive and emotional facets and relation to previous experiences, expectations, and social networks (Verma & Jauhari, 2014). Nevertheless, patient's satisfaction as a concept is a multidimensional and complex since it affected by personal manners, past experience, upcoming expectations and influenced by the healthcare provider (Al Shahrani, et al., 2015). From medical perspective, clinical outcomes strongly influenced by patient cooperation and understanding, which in its turn, relies on patients' satisfaction (Al Saffan, et al., 2019). That importance of patients' role in the development of healthcare supported by the transformation of health care from a sellers' market to a consumers' market where the satisfaction of the patients' needs is part of the definition of quality (AlMutairi, 2016). In a business-focus view, patients' perceptions of quality had shown to account for 17 to 27 per cent of the variation in a hospital's financial measures such as earnings, net revenue, and return on assets (Dewi, et al., 2011). Whenever the patients received a high quality care with professional and respectful communication, they will reward the facility by recommending the services to others, paying the premium price and expressing cognitive loyalty (Nelson, et al., 2004). Whereas from a community-based perspective,

measurement of patient satisfaction realizes the principle of community participation in health care (Aliman & Mohamad, 2016).

### **Theoretical Framework**

Dentist-patient relationship is the heart of successful dentistry. It consists of interactions and ties between the dental staff with their patients and includes interpersonal relations, information transmission and treatment decision (Vuori, 1991). Dental health practitioners who interacted with their patients classified as significantly more qualified than others (Othman & Razak, 2010; Subait, et al., 2016). Personal communication aspects contain the level of trust, sympathetic attitude, scientific background about the job, professional behavior and polite assistants (Al Johara, 2010). The positive impacts include enhancing patient trust and gratification, reducing the risk of negative impact, increasing appropriate competence of practice and gaining patient adherence and recognition (Okullo, 2004). This mixture of formal and friendly connections influences patients' compliance, their use of dental services, and lessen their anxiety, which, in turn, associated with health outcomes and health status (Lukoschek, et al., 2003). Interaction and communication skills are two essential components that help in building up a successful dentist's career (Zijlstra-Shaw, 2015). Good doctor-patient relationship results in better efficiency and feeling between patient and doctor, surveys point out that there is a significant relationship between individual communication skills of doctor and satisfaction of patient (Moosavi, et al., 2015). Patient-Dentist relationship, which includes trust, greatly affects patients' compliance and consequently influences the regularity of patient's visits (Nagappan & John, 2014). In cases where a patient shows discomfort or dissatisfaction, it is important for the caregiver to communicate with the patient and retrieve his/her trust. Failing to do so may result in difficulties when trying to build a strong client base (Han & Lim, 2017).

Technical competency of the dentist is a key determinant of patient satisfaction associated with the technical aspect of care. It refers to the competence of the providers as they go about performing their tasks; these include thoroughness, clinical and operating skills of the doctors and clinical outcomes. Technical features of dentists are directly associated with patient satisfaction, these features include awareness about the treatment offered to the patient, instructing the patient about the dental hygiene, utilization of modern equipment, well preserved dental chair and carefully dealing with tools (Verma & Jauhari, 2014).

It is worth for hospitals to deal with patients as their partners and consider them as referees against what they receive of either medical and even non-medical matters such as amenities and interpersonal relations. Satisfaction derived from the patient's experience since entering the clinic until leaving. Such experience includes, but is not limited to, received treatment and services, confidentiality gained, accuracy of appointments, staff appearance and attitude, in addition to the surrounding environment (Khan, et al., 2018).

Globally, studies on health care quality and patient satisfaction has gained increasing attention in recent years (Alhashem, et al., 2011; Badri, et al., 2009; Elleuch, 2008; Owusu-Frimpong, et al., 2010; Rad, et al., 2010; Zaim, et al., 2010) . In contrast, such studies rarely been done in Saudi

Arabia and especially regarding the dental clinics (Alagla, et al., 2019; Awliya, 2003; Habib, et al., 2014; Mahrous & Hifnawy, 2003). Patients' satisfaction toward private dental clinics in Riyadh the capital city of the Kingdom not been evaluated, perhaps that this city has the highest number of private hospital dental beds around the country (33 out of 93). It hosts the majority of the dentists (3,882 out of 11,184) and most of the faciodental surgical interventions (3,201 out of 22,352) (MOH Statistical Annual Report, 2018).

In this study, researchers will investigate the patients' perception of what they receive during their visits to the private dental clinics. Starting from the moment of decision to get the dental care, passing throughout the process of appointment confirming, reception, waiting in the queue, diagnostic or therapeutic session, getting the curative solutions and recommendations, and ending with the post visit follow up.

## Methodology

This cross-sectional descriptive study conducted during March 2019 on the patients of private dental clinics in Riyadh, Saudi Arabia. The data collected using a self-administrated questionnaire adapted from Mahrous and Hifnawy (Mahrous and Hifnawy, 2003) and translated to Arabic. The questionnaire consisted of demographic factors such as age and gender, along with three major domains of satisfaction: patient–dental staff interaction, technical competency, system/administrative efficiency and clinic setup/environment. It was drafted in Arabic and English with a 3-point Likert response scale ranging from 1 (Agree) to 3 (Disagree). The researchers received approval from the institutional Review Board (IRB) of King Saud University (KSU) for distributing the questionnaire. They then distributed hard copies of the questionnaire over a one-month period by visiting dental polyclinic centers located in northern, eastern, western, southern and central districts of Riyadh after getting permissions from management representatives of those centers. Convenient sampling method used to include 350 patients to represent a large number of the population who visit these clinics, Two hundred and Nine questionnaires were collected; the response rate was 60 percent. The participating dental centers were Riyadh Elm University Dental Clinics (54 collected responses) Al-Shammel Dental Center (37 filled questionnaires), Al-Thomairy Poly Clinics (34 answered surveys), Al-Mumiz Dental Clinics (22 received replies), Dental Life Center (21 respondents), Kantale Dental Center (21 participants) and Bait Alelaj Dental polyclinics (20 reactions). Participants asked to fill the questionnaire after reading and signing the informed consent, which assured patients that participation is voluntary, anonymous, and containing no identifiers. Completed questioners entered into "IBM SPSS version 25" to calculate the values of percentages, means, and standard deviations. Overall average of satisfaction of each of the three main dimensions were calculated and presented, and the grand average of agreements calculated to find the general indicator of patients' satisfaction. Distribution of responses throughout offered options indicated by the mean in tables 2,3 & 4. Mean values close to 1.0 express high level of satisfaction.

## Results

**Table 1.** Shows result of demographic characteristics of respondents. More than half of the respondents (57%) were between 26 and 50 years old, while least of respondents were kids aged between 6 and 15 years, filled by guardians, formed only (3.8%). The vast majority of respondents were male (70.3%), mainly because of the ease of access through the questionnaire distribution mediators who were male in most cases. Respondents with a bachelor degree made more than half of the questioned people (52.2%), while those without education represented just (1.4%).Citizens formed 88% of the respondents whereas (4.8%) were Non-Arab Residents.

<b>Table 1: Demographic Characteristics of Patients</b>		
<b>Characteristics</b>	<b>(n)</b>	<b>(%)</b>
<b>Age</b>		
6-15	8	3.8
16-25	65	31.1
26-50	119	57.0
Older than 50	17	8.1
<b>Gender</b>		
Male	147	70.3
Female	62	29.7
<b>Educational level</b>		
Not educated	3	1.4
Secondary or less	35	16.7
Diploma	18	8.6
Bachelor	109	52.2
Higher education (Master, Doctorate)	44	21.1

<b>Nationality</b>		
Saudi	184	88.0
Non Saudi "Arabic"	15	7.2
Non Arabic "Foreigner"	10	4.8

**Table 2.** Indicates answers collected about patient-dentist interaction. Around three-quarters of participants praised dentist advice after treatment and explanation of the procedure before getting cured (74.2% and 71.8%, respectively). Friendly behavior of the staff and criticism avoidance scored middle endorsement point represented by around two-thirds of the participants (64.6% and 64.1%, respectively), while the conversations between dental staff during treatment was the least reported behavior (42.1%).

<b>Table 2: Patients' perception with Patient–dental staff interaction</b>					
<b>Item</b>	<b>Agree N (%)</b>	<b>Neutral N (%)</b>	<b>Disagree N (%)</b>	<b>Mean</b>	<b>Standard Deviation</b>
Dentist facial's expression was cheerful with a smile	144 (68.9)	56 (26.8)	9 (4.3)	1.35	.56
Dentist explained the procedures before start of treatment	150 (71.8)	46 (22.0)	13 (6.2)	1.34	.59
Dentist did not ask personal question during offering care	119 (56.9)	59 (28.3)	31 (14.8)	1.58	.74
Dentist did not criticize my oral condition or compared it with others	134 (64.1)	39 (18.7)	36 (17.2)	1.53	.77
Dental staff did not talk with each other while providing treatment	88 (42.1)	60 (28.7)	61 (29.2)	1.87	.84
Dental staff were concentrating on their work	142 (67.9)	51 (24.4)	16 (7.7)	1.44	.97
Dentist gave me advices after treatment	155 (74.2)	37 (17.7)	17 (8.1)	1.34	.43
Dentist was friendly with me	135 (64.6)	64 (30.6)	10 (4.8)	1.40	.58

<b>Overall Average</b>	133.4 (63.8)	51.5 (24.6)	24.1 (11.5)	1.48	.69
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**Table 3.** Points out the perception about technical competency's results. The highest satisfaction was about the sterility of dental instrument (69.9 %), in contrast, the lowest contentment was about that treatment exposure was non-painful (51.7%).

<b>Table 3: Patients' perception with Technical competency</b>					
<b>Item</b>	<b>Agree N (%)</b>	<b>Neutral N (%)</b>	<b>Disagree N (%)</b>	<b>Mean</b>	<b>Standard Deviation</b>
I received good quality treatment; e.g. filling did not get dislodged or broken	123 (58.9)	58 (27.8)	28 (13.4)	1.55	.72
Dental instrument used were sterilized	146 (69.9)	57 (27.2)	6 (2.9)	1.33	.53
Treatment offered was not painful	108 (51.7)	68 (32.5)	33 (15.8)	1.64	.74
Thorough dental examination	123 (58.9)	55 (26.3)	31 (14.8)	1.56	.74
<b>Overall Average</b>	125 (59.8)	59.5 (28.5)	24.5 (11.7)	1.52	.68

**Table 4.** Highlights the participants' impressions toward administrative and clinic setup affairs. Maintaining the privacy of the treatment was the most satisfied matter (78%); on the contrary, the least agreed on among respondents was the completeness of dental treatment (41.1%). The appointment arrangements items gained satisfaction from approximate half of the respondents; those include working hours of the clinic, comfort of waiting area, waiting time initially before appointment and short waiting time later prior to getting the treatment (roughly 56.5, 53.6, 53.1, and 47.4%, respectively).

<b>Table 4: Patients' perception with administrative efficiency and clinic setup environment</b>					
<b>Item</b>	<b>Agree N (%)</b>	<b>Neutral N (%)</b>	<b>Disagree N (%)</b>	<b>Mean</b>	<b>Standard Deviation</b>
Working hours of the clinic were suitable for me	118 (56.5)	65 (31.1)	26 (12.4)	1.56	.71
I did not wait for long time to have an appointment	111 (53.1)	61 (29.2)	37 (17.7)	1.65	.77

Short waiting time to get the treatment	99 (47.4)	74 (35.4)	36 (17.2)	1.70	.75
Complete dental treatment	86 (41.1)	70 (33.5)	53 (25.4)	1.84	.80
Comfortable waiting area	112 (53.6)	59 (28.2)	38 (18.2)	1.65	.77
Privacy of treatment was insured	163 (78.0)	38 (18.2)	8 (3.8)	1.26	.52
<b>Overall Average</b>	114.8 (54.9)	61.2 (29.3)	33 (15.8)	1.60	.72

**Table 5.** Represents the minimum, maximum and mean values of agreement about each of the three dimensions along with the average standard deviations. The grand average of agreement was  $59.5 \pm .70$  reflecting the predominant level of satisfaction. Mean agreement of patient-dental staff interaction was the highest ( $63.8 \pm .69$ ) while average satisfaction about administrative efficiency and clinical setup environment was the lowest ( $54.9 \pm .72$ ).

**Table 5: Overall satisfaction for the three dimensions.**

<b>Dimension</b>	<b>Minimum % (Agree)</b>	<b>Maximum % (Agree)</b>	<b>Mean % (Agree)</b>	<b>Standard Deviation</b>
Patient Dentist Interaction (PDI) (8 items)	42.1	74.2	63.8	$\pm .685$
Technical Competency (TC) (4 items)	51.7	69.9	59.8	$\pm .6820825$
Administrative Efficiency and Clinical Setup (AE & CS) (6 items)	41.1	78	54.9	$\pm .7183$
<b>Grand average of Agreement (18 items)</b>			59.5	$\pm .6951275$

## Discussion

The results of patient-dental staff interactions shows the predominance of friendly and emotional pattern on the communication between dental staff and their patients, at least two-thirds of the respondents reported that. Friendliness of dentist considered as one of the major factors that affect



patients' judgments of their dentists' skills and quality of care (Riley, et al., 2012). This mode of relationship belongs to the empathy, which is one of the main dimensions of healthcare quality. It is intangible but essential for customer satisfaction (Nelson, et al., 2004; Owusu-Frimpong, et al., 2010). Portion of respondents advocated this positive practice is similar to what Choudhary, et al., (2017) and Othman & Razak (2010) findings but lower than what explored by Mahrous & Hifnawy (2003).

Dental staff adherence to the main ethical principles include obligation toward informed consent and respecting privacy of patients may elicited from the reactions collected toward our questions. In particular by evaluating answers to the questions about dentist explanation of the procedures before start of treatment and giving advice after the care session, avoidance of asking personal questions during treatment, abstention of criticizing oral condition or compared it with others, reluctance to side talking during treatment and concentration on work. The results show that the commitment of the dental staff to these measures achieved the satisfaction of the majority of respondents with the exception of lateral talk during treatment. In particular, explanation of the procedures before start of treatment and giving advice following therapy session gathered higher satisfaction than Choudhary, et al., (2017) and Othman & Razak (2010) but lower than Mahrous and Hifnawy (2003). Concerns about respecting privacy of patients that contain avoidance of asking personal questions and of criticizing oral condition or compared it with others scored lower numbers than aforementioned studies. This is the case also when measuring the responses toward reluctance to side talking during treatment and concentration on work.

Dentist's technical competency considered as a principal factor in influencing patients' loyalty and intention (Saub, et al., 2019). The outcomes of technical efficiency related responses indicate a tolerable satisfaction – in general-. More than half of the participants endorsed the abilities and skills of dental staff in providing treatment with a minimal harmful (non-maleficence) way and in light of informed decisions that stand on a holistic diagnosis. A success in reducing or relieving pain associated with the treatment has a fundamental effect on patient's experience and satisfaction (Aldosari, et al., 2017). Reporting that the received treatment was not painful or less painful denotes that the patients were satisfied with dental care. Nevertheless, the proportion of respondents indicated that in our study much less than counterpart researches (Choudhary, et al., 2017; Mahrous and Hifnawy, 2003; Othman & Razak, 2010).

Sterility of the dental instrument gained the highest degree of acceptance in the technical efficiency related aspects. Dental equipment represent an infection medium for a variety of diseases (Allison & McDaniel, 2020). Therefore, sterility of dental equipment, especially those used for surgical practice, considered as "essential" just as importance of the availability and the functionality of them (Smith, 2020). Despite our result indicates a positive attitude toward the sterility of dental instrument, it is much lower than analogous outcomes of Choudhary, et al., (2017), Mahrous and Hifnawy (2003) and Othman & Razak (2010).

Responses toward items related to the dental therapeutic practice side did not show positive trend of satisfaction as detected regarding the instrument-related side. Perception about the technical

efficiency of the dental staff in term of their skills in providing the required treatment with lowest pain and at high quality such as using and applying fillings that have appropriate resistance against break and dislodging gained slim majority of satisfaction compared to the group of studies mentioned above. Same thing applied to the perception about the diagnostic practice represented by getting thorough dental examination.

Ensuring the privacy of treatment through arranging reception, waiting and treatment areas along with other facilities and harnessing all resources to obtain that was the only clause out of the administrative efficiency and clinic setup environment dimension that gained considerable portion of satisfaction. 'Very Good' level of satisfaction revealed dental clinics obligation to apply well-organized layout of treatment rooms and supporting facilities in addition to utilize electronic health record (EHR) system that store, display, archive and retrieve patients' sensitive personal and medical information. Our result in this regard contradicted Choudhary, et al., (2017) and Othman & Razak (2010) but agreed with Mahrous and Hifnawy (2003).

Short waiting time before getting appointment received a positive response from a slight majority of participants. Similar proportion of satisfaction reported for the suitability of waiting areas, but the perception was different when it comes to the waiting time in the clinic before subject to treatment session. These findings were asymptotic with Othman & Razak (2010) but too far than Choudhary, et al., (2017) and Mahrous and Hifnawy (2003). Appointment reservation by remote means like phone, website, smart application or email make the process smoother and faster, while remarkable supplying of the waiting areas with modern decorations and entertainment equipment (TV screens, vending machines, newspapers and magazines) justify patients' comfort. In contrast, lower agreement toward the appropriateness of working hours and the time spent before getting the treatment raises doubts about the consistency of working hours with the amount and nature of appointments given for a certain day. Blame about that may oriented to the improper system and mechanism of appointment and waiting, or imbalance between the demand size represented by the patients and the supply side embodied in the human, technological, administrative and financial resources of the private dental clinics.

## Recommendations

The study results' could suggest that entities responsible for dental clinics and dental staff (Ministry of Health (MOH), Saudi Commission for Health Specialties (SCFHS) and Saudi Dental Society (SDS)) along with private clinics owners and managers to establish policies and guidelines for adjusting the relationship between dental staff and their patients. Such legal and professional framework should take into account ethical, emotional and social considerations with respect to the wide diversity of demographic characteristics of patients. Technical competency of dental staff needs to been monitored, directed, improved and maintained through developing and applying code of professional conduct by the Saudi Dental Society (SDS). This aims to highlight and generalize dental staff obligations toward patients' beneficence and non-maleficence. Providing sufficient level of human, technological, administrative and financial capabilities is very important to keep up

with the growing steady demand on the dental care services and to assist in offering appropriate, fast and comprehensive treatment.

There were some barriers impeded the data collection stage, which are the lack of cooperation from most of the sampled facilities and the short period of time required to exceeded this step and finalize the research. Summation of factors influencing patients' satisfaction whereas no clear conceptual and operational definition of satisfaction is one of the complex hurdles. These limitations themselves indicate possible trends for future studies. There is a need for a more comprehensive model that looks at other factors that affect satisfaction, such a model could help us better understand how customers decide to been subject to dental care services and make it simpler for professionals to build their practices on that 'Patients' Satisfaction Model'.

There is a need to perform similar studies covering other cities in Saudi Arabia and throughout diverse private healthcare specialized facilities (e.g., ophthalmologic, dermatologic and cosmetic surgery clinics) to evaluate the customers' perception against the rapid and accelerated growth private healthcare market in the country.

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