

Patients Satisfaction after Endodontic Treatment in Saudi Arabia

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ABSTRACT

Background: Dental anxiety and fear appear to vary according to the type of treatment. Endodontic treatments have been shown to cause higher levels of anxiety than restorative or prophylactic treatments. Patient's pretreatment decisions and post-treatment satisfaction may be strongly influenced by social, psychological, and behavioral aspects including knowledge, beliefs, attitudes, preferences, and behaviors.

Aim: This study aimed at investigating the percentage of patient's satisfaction toward the endodontic treatment done by endodontic specialists.

Methodology: Some cases (78) from different ages were asked to apply a questionnaire to show the percentage of satisfaction toward endodontic treatment of patients received by endodontic specialists during the year of 2017 in Saudi Arabia.

Results: percentage of satisfaction was different among the cases toward the various steps in endodontic treatment, but it was evident that more satisfaction was related to qualitative and proper treatment procedure but the correlation between satisfaction and pain score was negative.

Conclusion: Patients satisfaction toward the endodontic treatment is related to different factors, some of these factors related to the patient himself like his health status and the others depend on the nature of endodontic procedure itself.

Keywords: endodontic; satisfaction; questionnaire.

INTRODUCTION

The pulp is the source of sensation to the teeth. If the pulp has undergone irreversible pulpitis due to different causes like caries or trauma, it causes severe pain that assumes endodontic treatment. Such case requires proper treatment planning to produce a favorable prognosis ¹.

Endodontic treatment is fairly predictable with reported success rates up to 86–98%. An endodontically treated tooth should be evaluated clinically as well as radiographically for its root canal treatment to be deemed successful ².

Dental anxiety and fear appear to vary according to the type of treatment. Endodontic treatments have been shown to cause higher levels of anxiety than restorative or prophylactic treatments. Patient's pretreatment decisions and post-treatment satisfaction may be strongly influenced by social, psychological, and behavioral aspects including knowledge, beliefs, attitudes, preferences, and behaviors.

Root canals have gained a bad reputation as a painful experience for a long time. Patients might be aware of endodontic pathology but are likely to be highly sensitized to treatment-related fear, anxiety ³.

Satisfaction of patient toward endodontic treatment is related to the patient himself and his health status like having any chronic diseases, either, having the bad history of painful endodontic procedure, and also related with

endodontic procedure steps like anesthesia, x-ray, rubber dam, clamp, suctioning ⁴.

Endodontists are specially trained to provide root canal treatments in a way that minimizes anxiety so patients can be pain-free and healthy again ⁵.

Endodontist has to be concerned with all details; everything is significant to the patient from his first visit to the clinic until the end of treatment ^{6,7}.

In the present research study, the literature focused on all steps of endodontic treatment to different cases, some of them are healthy, and others have chronic diseases, then the level of patients' satisfaction for each step of treatment and the association between the disease and the percentage of satisfaction. In the present study, the discussion was carried out about means of dealing appropriately with important factors to ensure great satisfaction to the patient: 1-sterilization, 2-anaesthesia, 3-x-ray, 4-rubber dam, 5-clamp, and 6-suctioning, 7-time of procedure, 8-pain score, and 9-treatment done by the doctor ⁸.

The study was done after approval of ethical board of King Khalid university.

1-Sterilization

The most important parameter for the patient in the visiting of dental clinic is the feeling of safety from infection. Good dental infection control begins with the dentist's room itself. A well-

ventilated room with air-circulating devices limits building up of aerosols generated from the dental drills⁹. The dentist and assistant have to be immunized against hepatitis, as well as other infectious diseases, wear clean and sterilized personal equipment such as a scrub apron, eyewear, disposable gloves, and facemasks. The patient is dressed and may be given a protective "face shield" to prevent skin contamination from the dental drill's water spray. An anti-microbial mouth rinses just before a dental procedure is important to reduce contamination¹⁰.

The dental chair's knobs and handles must be chemically disinfected before using with the different patients. All the dental instruments have to be subjected to a high-degree of sterilization procedure, such as "autoclaving," which destroys all microbial contamination¹¹.

2-Anaesthesia

Reasons for induction of pain during administration of local anesthesia include needle prick, the acidic medium of the medication and improper technique. Feeling pain, of course, decreases the patient satisfaction. Addition of sodium bicarbonate reduces the stinging sensation related to the acidic nature of adrenaline containing LA. Similarly, various topical applications before pricking also help patients to tolerate the pricking pain better².

3-X-ray

Using x-ray in endodontics is very essential to receive accurate investigation results. Two or more x-ray films are taken during endodontic investigations. All precautions should be followed ensure safety for the dentist and patients from the exposure to x-rays like wearing the lead apron¹².

4-Rubber dam

The dam is used for tooth "isolation," meaning it serves as a barrier that partitions the tooth being treated from the wet, contaminate-laden environment of the mouth. Dental dams are placed for two general reasons. One involves benefits it provides for the dentist during performing tooth's work. The other is protecting the patient from swallowing any dental instrument. But the dam may be unsuitable for some medically compromised patients like asthmatic patients or mouth breathers¹³.

5-Clamp placement

The clamp is the part that used to anchor the dam to the tooth to be isolated; it is also used to retract

the gingiva. It is applied with clamp holder. Decreasing the time used to apply the dam and clamp is very important especially to medically compromised patient¹⁴.

6-suctioning

There are two main types of dental suction that dentists use: the saliva ejector and the high volume suction. The saliva ejector does exactly what its name implies; it sucks saliva out of the mouth. The other primary type of dental suction that we say the high volume suction¹⁵.

This suction is so high that the dental assistant holds merely it close to where the dentist is working, and it sucks away any nearby debris, much like a strong vacuum cleaner can suck away crumbs without actually touching them. We suction after giving anesthetic drug because the anesthetic has a bitter taste, and most patients prefer to rinse out with water and use the saliva ejector. Also, if the anesthetic sits in the back of your mouth for too long, it may start to slightly numb the back of your mouth and could give the patient a gagging sensation. We will also use the suction to make sure that you don't get too much water in your mouth while we are working¹⁶.

7-Time of procedure

Endodontic treatment procedure could carried out in the single visit or multiple visits; there are some factors that determine which one the dentist select, first, a condition of the tooth because if there is the abscess, multiple visits will be preferred. Also, health condition of the patient and number of tooth, molar teeth usually take more time so multiple visits may be selected rather than incisors and premolars on which single visit may be preferred³.

8-Pain score

It is clear that all patients do not want to feel pain so the dentist must use all medical means to reduce the patient's feeling of pain because the patient's feeling of pain makes him less satisfied and less cooperation with the dentist¹⁵.

9-Treatment done by the doctor

After all, efforts done by both dentist and patient, the patient evaluate the dentist by the results, feeling comfort, saving the tooth.

If the patient complaint persists after the endodontic treatment due to the dental fault, the patient, of course, wouldn't be satisfied with both his dentist and the endodontic treatment itself¹⁷.

METHODOLOGY

Here in the kingdom of Saudi Arabia for the year 2017, the literature has selected specialized endodontic dental center for making this research in which qualified endodontic specialists and consultants are available. The research was done on (78) cases which have undergone endodontic treatment. The cases were different in sex, age, nationality and medical condition. The study included questionnaire papers to measure the percentage of satisfaction on special items and steps in endodontic treatment. Also, the patient's medical history and pain score have been mentioned in the questionnaire papers. Every patient wrote his questionnaire paper by himself without any participation from the endodontic to obtain the accurate and correct evaluation. After that, the literature has scheduled all results to obtain the basal characteristics of the study group (sex, age, nationality, medical history) then the attitude of the patient toward endodontic special steps, also, satisfaction percentage on every step and then an overall view was done showing the correlation between satisfaction to sex and medical conditions. Statistical analysis was done for all results. Data were analyzed using SPSS software version 16, the simple descriptive analysis in the form of means and standard deviations were calculated for numerical data. Qualitative data were described using numbers and percent distribution. Comparison of satisfaction score between dichotomous variables was done using independent test. Spearman correlation was done to test the relation between satisfaction and pain scores. A significant level of less than 0.05 was considered.

RESULTS

After all cases (78 cases) completed the questionnaire, results were collected in tables, and each one, contain the number of people who responded positively and negatively and the percentage of each of them to the whole number of patients is also calculated.

The first table included the basal characteristics of the study group (sex/age/nationality/medical condition).

The second table was concerned with measuring the degree of pain during local anesthesia injection.

The third table covered attitudes of patients to some procedures done during the treatment (suctioning/rubber dam and clamp usage/sterilization of the instruments/satisfaction with the treatment).

The fourth table comprises the degree of satisfaction toward specific items the literature asked for which are (suction/xray/ anesthesia injection/rubber dam isolation/dental instrument sterilization/timing of the procedure/treatment done by the doctor).

The fifth table was formulated to show a relation between satisfaction score and sex of the patients.

The sixth table was allocated to show a relation between satisfaction score and patients having chronic diseases.

The seventh table was allocated to show the correlation between satisfaction score and pain score; it was shown that negative correlation found between them.

Table 1: Basal characteristics of study group (N= 78)

		N	%
sex	Male	19	24.4
	Females	32	41.0
	missing	27	34.6
Age in years	Range	3- 84	
	Mean \pm SD	30.51 \pm 14.80	
Nationality	Saudi	57	74.0
	Non-Saudi	20	26.0
Medical condition	No	59	75.5
	yes	19	24.5

Table2: Injection rate among patients

Pain value	N (78)	%
0 (or no hurt)	16	20.5
1-3	31	39.7
4-6	23	29.5
7-10	8	10.3
Median (IQR)	2 (1.75-4)	

Table 3: Attitudes of the patients

		N	%
suctioning is very important to you	Yes	55	70.5
	No	23	29.5
discomfort while putting the clamp	Yes	50	64.1
	No	28	35.9
rubber isolation is helpful	Yes	56	71.8
	No	22	28.2
Sterilization of instrument	Yes	68	87.2
	No	4	5.1
	Don't know	6	7.7
satisfied with the treatment	Yes	70	89.7
	No	8	10.3

Table 4: Satisfaction of patients

Satisfaction degree	poor	Fair	good	Excellent
Suctation	10(12.5)	7(9.0)	17(21.8)	44(56.4)
X-rays	3(3.8)	7(9.0)	38(48.7)	30(38.5)
Infiltration /injection	8(10.3)	8(10.3)	17(21.8)	45(57.7)
Rubber dam isolation	5(6.4)	14(17.9)	26(33.3)	33(42.3)
Dental instrument sterilization	5(6.4)	5(6.4)	17(21.8)	51(65.4)
Timing of procedure	3(3.8)	7(9.0)	26(33.3)	42(53.8)
Treatment is done by doctor	4(5.1)	3(3.8)	14(17.9)	57(73.1)
Satisfaction score				
Median (Range)	24(9-28)			
Mean±SD	23.24±4.5			

Table 5: Correlation between satisfaction and sex of patients

	Male	Female
Mean	25.3684	23.5625
SD	2.69177	4.50045
P value	0.119	0.119

Table 6: Correlation between satisfaction and chronic diseases:

	+ve chronic disease	-ve chronic disease
Mean	23.1579	23.2712
SD	4.20665	4.63432
P value	0.925	0.925

Table7: Correlation between satisfaction score and pain score

Relation	-0.304
P value	0,007

(Negative correlation was detected).

P value: The p-value is the level of marginal significance within a statistical hypothesis test representing the probability of the occurrence of a

given event. P-values are calculated using p-value tables or spreadsheet/statistical software.

Mean±SD is a measure that is used to quantify the amount of variation or dispersion of a set of data values. A low standard deviation indicates that the data points tend to be close to the mean (also called the expected value) of the set, while a high standard deviation indicates that the data points are spread out over a wider range of values.

DISCUSSION

From the results of this study, it is evident that the patients satisfaction towards the endodontic treatment is different in degree among patients.

The results further confirmed other clinical studies and evaluations done which concluded that satisfaction degree among patients has the negative correlation with pain score. The present study has concluded that the degree of satisfaction after nonsurgical endodontic treatment reached 90% between patients, and the satisfaction wasn't depending on sex. Also, it showed that the increase in the cost of the endodontic treatment decreases patient satisfaction ¹. **Torabinejad et al.** ⁽¹⁶⁾ have studied patient satisfaction after endodontic treatment and

have concluded an important result that feeling pain during endodontic treatment, decreases patient satisfaction with a large degree.

Administration of local anesthetics is the daily routine for most dental practitioners. Usage of topical anesthesia decreases the pain of the needle prick. Pain during injection, of course, decreases patient satisfaction. Satisfaction is related to different factors, some of them are related to the patient himself and the others related to the nature of endodontic procedure itself and the dentist¹⁸.

Example of patient-related factors are chronic diseases, like asthmatic patients can't afford rubber dam for a long time and may face problems in breathing during the endodontic procedure.

Examples of dentist related factors are in the appropriate treatment plan, ineffective anesthetizing.

CONCLUSION

Patient's satisfaction toward the endodontic treatment is related to different factors, some of these factors related to the patient himself like having the chronic disease and the other are related to the nature of endodontic procedure itself. It was obvious that between most of the patients, the correlation between satisfaction and pain score was negative. So the dentist should take all precautions to avoid the patient feeling any pain. Also, the sterilization quality is considered a very important factor as the patient cannot forgive any shortage in sterilization quality. All of the above patient's satisfaction toward endodontic treatment require qualified endodontist who can apply endodontic procedure with the best quality and least time. Also, team workers should maintain the best clinic sterilization quality and help the endodontist during the procedure for achieving good results.

CONFLICT OF INTEREST

The author has no conflict of interest to declare.

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