

Patients' awareness and knowledge of the root canal treatment in Saudi population: survey-based research

Mazen Doumani ^{1*}, Adnan Habib ², Nashwan Qaid ³ Saleem Abdulrab⁴, Ahmad Reda Bashnakli⁵, Ramakrishna arrojue⁶

¹Department of Restorative Dental Sciences, Al-Farabi dental College, Riyadh, Saudi Arabia

*Corresponding author E-mail: adnanhabib71@hotmail.com

Abstract

Endodontics is a profession based on the work with other people so several factors should be considered during clinical decision-making process.

Objective: The aim of this study was to evaluate the knowledge and awareness of patients in a sample of Saudi population regarding endodontic treatment.

Methods: multiple-choice questionnaire regarding knowledge and awareness of root canal treatment distributed to 227 patients, the questionnaire comprised questions ranged from personal and social details to specific questions about endodontic treatment; the analysis of data was performed using methods of descriptive statistics.

Results: The results shown that the strong spontaneous toothache was the most impact factor of the need for endodontic treatment in (53%) of respondents, (29%) of subjects do not know anything about root canal treatment, (47%) of respondents indicated that the pain was the most important concern associated with the root canal treatment.

Conclusion: Toothache is the greatest motivation of patient to refer the dentist, and pain is the more important patients' concerns associated with root canal treatment, knowledge and awareness of patients regarding root canal treatment is different among races and populations.

Keywords: Cost; Knowledge; Root Canal Treatment; Toothache

1. Introduction

Endodontics is the branch of dentistry that deals with diseases of the tooth root, dental pulp, and surrounding tissue in human. It is a profession based on the work with other people, so several factors should be considered during clinical decision-making process. The process of clinical decision-making is the essence of everyday clinical practice. This process involves an interaction of application of clinical and biomedical knowledge, problem-solving, weighing of probabilities and various outcomes, and balancing risk-benefit(Hajjaj FM et al.2010). Although most clinical decisions are based on 'traditional' clinical criteria, they are also influenced by a wide range of non-clinical factors. Non-clinical influences on clinical decision-making profoundly affect medical decisions. These influences include patient-related factors such as socioeconomic status, quality of life and patient's expectations and wishes, physician-related factors such as personal characteristics and interaction with their professional community, and features of clinical practice such as private versus public practice as well as local management policies(Hajjaj FM et al.2010).

Janczarek et al in their survey-based research on patients' knowledge about endodontic treatment concluded that there is an improvement of knowledge and awareness of patients about the endodontic treatment, and the majority of patients surveyed are aware of the opportunities which they may use during the course of endodontic treatment: different forms of anesthesia, root canal treatment, modern techniques and treatment outcome prediction

(Janczarek M et al. 2014). Another survey conducted by Sisodia showed a moderate level of awareness about endodontic treatment among the selected sample of dental patients. It also highlighted the need for providing more information to the patients about the advantages of retaining teeth via endodontic therapy(Sisodia N et al. 2008).It has been demonstrated that dental anxiety and expectation of pain had a profound effect on a patient's ability to understand information provided. A person's cognitive ability to process information is significantly affected by stress(Eli I et al. 2008). Indeed, some research has suggested that dental fear is a stronger predictor of poor oral health than structural factors such as income, dental costs, and insurance status(Jamieson LM et al. 2009), several studies confirm that dental anxiety is more common in women (Humphris GM et al. 2009, Erten H et al. 2006, Scott DS and Hirschman R 1982). The impact of root canal treatment on the oral health-related quality of life of patients has been evaluated using the short form (OHIP-14) or modified version (OHIP-17) of the Oral Health Impact Profile (OHIP-14) (Slade GD 1997) . The distinctly positive impact of root canal treatment was apparent, regardless of cultural background of the patient group or the measure used(Dugas NN et al. 2002 ,Gatten DL et al. 2011).As expected, physical pain, psychological discomfort (feeling tense), and disability (difficulty in relaxing) were the most improved domains following treatment.

The aim of this study was to evaluate the knowledge and awareness of patients in a sample of Saudi population regarding endodontic treatment, and assess their concerns, expectations and choices.

2. Material and methods

A standardized questionnaire distributed to 227 patients visiting the department of restorative dental science in Al-Farabi colleges during their regular dental visits.

The inclusion criterion for the study was, patients over the age of eighteen years, who agreed to participate in the survey.

The questionnaire comprised 18 multiple-choice questions ranged from personal and social details to specific questions relating to knowledge and awareness of patients about endodontic treatment, their impression and experience regarding root canal treatment and its cost, the criteria for selection of dental persons and office, and patients' concerns and barriers to undergo the endodontic therapy. The questionnaire distributed in this study was used in study of Janczarek et al conducted in Poland(2).

The analysis of data was performed using methods of descriptive statistics.

3. Results

The study included 227 patients aged more than 18 years, out of a total of 227 subjects 138(61%) were males and 89(39%) were females.

The results of the experiences of patients regarding root canal treatment shown that out of 227 subjects who had undergone endodontic treatment, 163(72%) said it was well, but 62(70%) of female subjects reported that the treatment was painful.

The person who performed the treatment in most cases(75%) was the experienced dentist; the results are shown in table 1.

Table 1: The Patients' Own Experience Regarding Root Canal Treatment

Responses of study group				
		Male	Female	Total
How do you recall the endodontic treatment You had got?	Well	80%	60%	72%
	Badly	20%	40%	28%
Was it painful Treatment?	Yes	49%	70%	57%
	No	35%	17%	28%
	I don't remember	16%	13%	15%
Who performed the treatment?	Student	6%	8%	2%
	An intern	5%	6%	5%
	Experienced dentist	73%	77%	75%
	I don't know	14%	15%	14%

The results shown that the strong spontaneous toothache was the most impact factor of the need for endodontic treatment in 72(52%) of male respondents and in 49(55%) of female respondents, and when the patients were asked about their behavior in case of toothache 72(32%) of respondents said they had used home remedies to relieve toothache while 155(68%) said they had referred to the dentist. The results are shown in table 2.

When analyzing the level of patients' knowledge and awareness on the endodontic treatment it was found that 65(29%) of subjects do not know anything about root canal treatment, 63(27%) of subjects know a lot. the highest result was recorded with female respondents 31(35%) that do not know anything about RCT. 15(7%) of subjects reported that they had obtained the knowledge from media. The results are shown in table 3.

The results shown that 106(47%) of respondents indicated that the pain was the most important concern associated with the root canal treatment. 32(14%) of respondents drawn attention to long treatment time particularly for male respondents 24(17%). The results are shown in table 4.

128(56%) of subjects claimed to knowing the cost of root canal treatment, while 112(49%) of subjects said that the price was adequate to the complexity of the procedure and 152(67%) of subjects preferred treatment financed by the National Health Fund. The results are shown in table 5.

Table 2: The Criteria of Symptoms Confirming the Need for Endodontic Treatment Reported by Patients, and Assessment of Patients' Behavior in Case of Toothache.

	Male	Female	Total	
Symptoms	Toothache during eating	24%	25%	24%
	Toothache when biting	7%	3%	6%
	Strong spontaneous Toothache	52%	55%	53%
	Pronounced discoloration of the tooth crown	4%	2%	3%
	Other	13%	15%	14%
Patients' behavior	I use home remedies to relieve Toothache	36%	25%	32%
	I refer to the dentist	64%	75%	68%

Table 3: Self-Evaluation of Patients' Knowledge on the Endodontic Treatment

Patients' knowledge on endodontic treatment %	Male	Female	Total
I know a lot	23%	24%	23%
Average knowledge, I ask for details	27%	29%	27%
Average knowledge, I am not interested in the course	17%	9%	14%
I do not know anything	24%	35%	29%
Knowledge from media	9%	3%	7%

Table 4: Patients' Concerns Associated with the Endodontic Treatment

	Male	Female	Total
Pain	44%	52%	47%
The need to remove the tooth despite undertaken treatment	8%	8%	8%
Breaking the file in the root canal	2%	3%	3%
Penetration of irrigant beyond the apex	2%	0%	1%
Multiple X-ray/ RVG images	2%	2%	2%
High costs	9%	8%	8%
Burden	11%	8%	10%
Long treatment time	17%	9%	14%
Other	5%	10%	7%

Table 5: Own Experiences of Patients on Endodontic Treatment Costs Results and the Criteria for Selecting Dental Office

	Male	Female	Total	
Do you know the price of endodontic treatment?	Yes	54%	60%	56%
	No	46%	40%	44%
Is it adequate to the complexity of the dental treatment?	Yes	53%	44%	49%
	No	47%	56%	51%
Do you prefer treatment financed by the National Health Fund? (if possible)	Yes	64%	71%	67%
	No	36%	29%	33%

The results shown that the price of root canal treatment was not a barrier to undergo the endodontic therapy, 163(72%) of respondents admitted they can afford the financial coverage, 151(67%) of respondents said they will pay a high price to make sure the proper treatment, and only 41(18%) of respondents are considering extraction as the terminal procedure. The results are shown in table 6.

Table 6: Selection Criteria between Endodontic Treatment and Tooth Extraction

		Male	Female	Total
Might the price influence your decision about not taking endodontic treatment?	Yes	34%	19%	28%
	No	66%	81%	72%
Would you be willing to pay a high price to make sure the proper treatment?	Yes	67%	65%	67%
	No	33%	35%	33%
Would you take the decision of tooth extraction rather than take endodontic treatment?	Yes	21%	13%	18%
	No	79%	87%	82%

155(68%) of subjects, particularly for male respondents 102(74%), preferred the specialist to carry out the root canal treatment, 51(22%) of subject chose a dentist recommended by friends or relatives. For 12(5%) of respondents it does not matter who performs the procedure. The results are shown in table 7.

Table 7: The Criteria for Selecting the Person for Performing Endodontic Treatment

	Male	Female	Total
Student of dentistry	2%	6%	4%
Recommended doctor	17%	31%	22%
Specialist	74%	60%	68%
Doctor without specialization	0%	1%	1%
Not important	7%	2%	5%

When analyzing the criteria for selecting dental office it was found that 113(50%) of respondents considered that professional staff is the most important criterion, while only 21(9%) of respondents preferred dental office that offers painless treatment. The results are shown in table 8.

Table 8: The Criteria for Selecting Dental Office

	Male	Female	Total
Free of charge treatment	10%	7%	9%
Professional staff	49%	51%	50%
Reasonable price	14%	11%	13%
Painless treatment	10%	9%	9%
Friendly service	3%	6%	4%
Quick and easy access	14%	16%	15%

4. Discussion

Since the beginning of modern-day endodontics, there have been numerous concepts, strategies, and techniques for performing pain-free and reasonable cost root canal treatment. The level of patients' knowledge and awareness regarding root canal treatment may influence their decision-making and choice; it may be obstacle to get the treatment.

It has been investigated that race/ethnicity is a marker for oral health status, and underlying cultural beliefs and practices influence the condition of the teeth and mouth, through diet, care-seeking behaviors, use of home remedies or attitudes towards and patterns of use of health services(Butani Y et al. 2008,Siegel K et al. 2012, Flores G and Vega LR 1998), so this survey-based research aims to assess the awareness, behavior and attitude of patients in a sample of Saudi population regarding endodontic treatment.

This study showed (27%) of subjects know a lot about root canal treatment and(41%) of subjects have average knowledge regardless of interesting in details; this reflects increased knowledge and concern of patients. Media was a source of knowledge in (7%) of subjects. These results are resembled to Janczarek' results (2).

Toothache (toothache during eating , toothache when biting ,or strong spontaneous toothache) was the leading cause that confirming the need for endodontic treatment in the vast majority of patients (83% of subject) this result has been observed in previous studies (2, 3). It is conceded that experience and skill are essential to performing root canal treatment, this was confirmed in our study when (68%, 1%, 4%) of respondents chose, as respectively, the specialist, doctor without specialization, student of dentistry for performing endodontic treatment, and when (50%) of respondents chose professional staff as the more important criteria for selecting dental office rather than others.

While the prevalence of high dental anxiety varies by a number of possible patient characteristics, such as gender, age, education and socio-economic status it should be observed that anyone, irrespective of these characteristics, may have dental anxiety (Armfield JM et al. 2006).

People with high dental fear have more probability to delay or avoid dental visiting, and a number of fearful people regularly cancel or fail to show for appointment. It has been noted that trying to manage patients with dental fear is a source of considerable stress for many dentists (Armfield JM et al. 2007,Armfield JM and Heaton LJ 2013,Armfield JM et al. 2009). Regarding to root canal treatment this study, Janczarek' and Sisodia' studies concluded that the pain was the more important patients' concerns associated with root canal treatment.

Long treatment time has drawn attention many subjects in this study and in previous studies (2, 3), boredom and pain relief may be cause to neglecting the treatment.

Access to health services is one of the human basic and social rights, and providing and increasing it is a duty of the governments(Wellstood K et al. 2006), The meaning of access is to remove economic, systemic, social, cultural and behavioral barriers to use health services(Gulliford M et al. 2002).

Policymakers, administrators, and insurance organizations have a major role in improving access to dental services. High cost of dental care has led to not referring patients to the clinic in many times and countries (Siegel K et al. 2012)

According to the World Health Organization (WHO) (21), the Saudi health care system is ranked 26th among 190 of the world's health systems. It comes before many other international health care systems in some developed countries.

Cost associated with endodontic treatment was not serious barrier in this study,(67%) of subjects prefer treatment financed by the National Health Fund , (72%) of respondents admitted that the price does not influence their decision about not taking endodontic treatment, (67%) of respondents said they will pay a high price to make sure the proper treatment.

5. Conclusion

- 1) Knowledge and awareness of patients regarding root canal treatment are different among races and populations.
- 2) There has been increased knowledge and concern of patients about endodontic treatment in Saudi Arabia.

- 3) Toothache is the greatest motivation of patient to refer the dentist, and pain is the more important patients' concerns associated with root canal treatment.
- 4) An expert and skilled dentist is the first choice of majority of patients.
- 5) Cost associated with endodontic treatment was not serious barrier in Saudi Arabia.

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