



ISSN: 0976-3031

Available Online at <http://www.recentscientific.com>

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research  
Vol. 8, Issue, 10, pp. 20583-20586, October, 2017

**International Journal of  
Recent Scientific  
Research**

DOI: 10.24327/IJRSR

## Research Article

### DENTAL PATIENTS' KNOWLEDGE AND AWARENESS ABOUT ROOT CANAL TREATMENT IN SYRIAN POPULATION: SURVEY-BASED RESEARCH

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DOI: <http://dx.doi.org/10.24327/ijrsr.2017.0810.0920>

#### ARTICLE INFO

##### Article History:

Received 20<sup>th</sup> July, 2017  
Received in revised form 29<sup>th</sup>  
August, 2017  
Accepted 30<sup>th</sup> September, 2017  
Published online 28<sup>th</sup> October, 2017

##### Key Words:

Awareness, Endodontics, Price,  
Specialist, Toothache.

#### ABSTRACT

Endodontics is the branch of dentistry concerned with the morphology, physiology and pathology of the human dental pulp.

**Objective:** The aim of this study was to assess the knowledge and awareness of patients in a sample of Syrian population regarding root canal treatment.

**Methods:** An on line standardized questionnaire distributed to 365 Syrian citizens. 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:** 217 subjects participated in this questionnaire resulting in a response rate (59.5%). 50.2% of respondents considered that the strong spontaneous toothache was the most impact factor of the need for endodontic treatment. (21.7%) of respondents know a lot about endodontic treatment. (72.2%) of subjects confirmed that the price don't influence their decision about taking endodontic treatment, (78.3%) of subjects said they will pay a high price to make sure the proper treatment.

**Conclusion:** Patients' knowledge and awareness regarding endodontic treatment may influence the decision-making and choice of the patients, there has been increased knowledge and concern of patients about endodontic treatment among Syrian population. Cost associated with endodontic treatment, professionalism and competence of clinician are crucial factors that affect decision making in endodontics.

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#### INTRODUCTION

According to (glossary of endodontic terms 2012) 'Endodontics is the branch of dentistry concerned with the morphology, physiology and pathology of the human dental pulp and periradicular tissues. Its study and practice encompass the basic and clinical sciences including the biology of the normal pulp and the etiology, diagnosis, prevention and treatment of diseases and injuries of the pulp and associated periradicular conditions'.

The process of case selection and treatment planning begins after a clinician has diagnosed an endodontic problem. The clinician must determine whether the patient's oral health needs are best met by providing endodontic treatment and maintaining the tooth or by advising extraction. Increased

knowledge concerning the importance of anxiety control, premedication with a nonsteroidal anti-inflammatory drug (NSAID) or acetaminophen, profound local anesthesia, appropriate occlusal adjustment, and biology-based clinical procedures enables clinicians to complete endodontic procedures without intraoperative or posttreatment pain (Rosenberg PA and, Malek A 2016).

However, the treatment modality is normally decided based not only on the diagnosis but also on complex factors such as the dentist's judgment, the patient's opinions and expectations, and socioeconomic factors, such as the patient's method of payment for treatment expenses (Cosyn J et al. 2012).

It has been shown that the regions with the greatest population density had more treatments carried out. The reason for this is

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difficult to elucidate but there may be a number of explanations. It may be that an urban population is more anxious to retain their teeth. Registration rates at dental practices for a rural population are lower than in urban areas indicating that the urban group may consider dentistry more important. Social and economic factors in a rural community may mean that attendance at multiple appointments for root canal treatment may be difficult and patients from these areas may opt for extraction for convenience (Saunders WP et al. 1999).

Clinical decision-making is the process of making an informed judgment about the treatment necessary for our patients (Hardy D and Smith B 2008, Hajjaj FM et al. 2010). This process is complex involving several important steps in which patient involvement is essential : Recognition and clarification of the problem; identification of potential solutions; discussing the options and uncertainties; providing tailor-made information; checking understanding and reactions; checking patient's preferences; exploring the patient's view; agreeing with the patient about a course of action; implementing the chosen course of action; arranging follow-up with the patient; evaluation of the outcome (Charles C et al. 1999, Elwyn G et al. 1999, Coulter A and Ellins J 2006, Whitney SN et al. 2008). It has been concluded that knowledge and awareness of patients regarding root canal treatment is different among races and populations (Doumani et al. 2017), and it has been observed that the toothache particularly, strong spontaneous toothache was the main cause that confirming the need for endodontic treatment in the vast majority of patients (Sisodia N et al. 2008, Janczarek M et al. 2014 , Doumani et al. 2017) .

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

## MATERIAL AND METHODS

This study took place in collaboration between AlFarabi College for dentistry and nursing, Riyadh, Saudi Arabia and faculty of dentistry in Aleppo university, Aleppo, Syria. The study was conducted between February and July 2017. This work has been conducted in full accordance with the World Medical Association Declaration of Helsinki, with an approval from the ethics committee in AlFarabi College for dentistry and nursing (00113/2017). A standardized questionnaire distributed to 365 patients visiting the conservative dentistry department in Aleppo and Damascus university during their regular dental visits. The inclusion criterion for the study was Syrian 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. Responses were collected and data were analyzed using methods of descriptive statistics.

## RESULTS

Out of 365 patients 217 subjects aged more than 18 years participated in this questionnaire resulting in a response rate (59.5%). The results about the experiences of patients regarding root canal treatment shown that out of 217 subjects who had undergone endodontic treatment, 182(83.9%) said it was well, but 35(16.1%) of subjects reported that the treatment was bad, while 35% of subjects said it was painful. The person who performed the treatment in most cases (75.6%) 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	
How do you recall the endodontic treatment you had got?	Well	83.9%
	Badly	16.1%
Was it painful Treatment?	Yes	47.5%
	No	35%
	I don't remember	17.5%
Who performed the treatment?	Student	7.8 %
	An intern	8.8%
	Experienced dentist	75.6%
	I don't know	7.8%

The results revealed that the strong spontaneous toothache was the main cause of endodontic treatment in 50.2% of subjects follow by toothache during eating(24%), and when the patients were asked about their behavior in case of toothache (37.8%) of respondents said they had used home remedies to relieve toothache while (62.2%) said they had referred to the dentist . The results are shown in table 2.

**Table 2** The criteria of symptoms confirming the need for endodontic treatment reported by patients, and Assessment of patients' behavior in case of toothache

	Responses of study group	
Symptoms	Toothache during eating	24%
	Toothache when biting	10.1%
	Strong spontaneous toothache	50.2%
	Pronounced discoloration of the tooth crown	4.2%
	Other	11.5%
Patients' behavior	I use home remedies to relieve Toothache	37.8%
	I refer to the dentist	62.2%

When analyzing the level of patients' knowledge and awareness on the endodontic treatment it was found that (25.3%) of respondents do not know anything about root canal treatment, (21.7%) of respondents know a lot. It was also found that (9.7%) of respondents had obtained the knowledge from media. The results are shown in table 3.

**Table 3** Self-evaluation of patients' knowledge on the endodontic treatment

	Patients' knowledge on endodontic treatment %
I know a lot	21.7%
Average knowledge, I ask for details	25.3%
Average knowledge, I am not interested in the course	18%
I do not know anything	25.3%
Knowledge from media	9.7%

Related to the most important concern associated with the root canal treatment the results shown that (44.2%) of respondents indicated that the pain was the most important concern, followed by long treatment time (16.6%) and burden (9.7%). The results are shown in table 4.

**Table 4** Patients' concerns associated with the endodontic treatment

	Responses of study group
Pain	44.2%
The need to remove the tooth despite undertaken treatment	6%
Breaking the file in the root canal	3.2%
Penetration of irrigant beyond the apex	0.9%
Multiple X-ray/RVG images	4.2%
High costs	7.8%
Burden	9.7%
Long treatment time	16.6%
Other	7.4%

123(56.7%) of subjects reported that they know the price of endodontic treatment, while 122(56.2%) of subjects claimed that the price was adequate to the complexity of the procedure and 92(42.4%) of subjects preferred treatment financed by the National Health Fund. The results are shown in table 5.

**Table 5** Own experiences of patients on endodontic treatment costs results and the criteria for selecting dental office.

	Responses of study group	
Do you know the price of endodontic treatment?	Yes	56.7%
	No	43.3%
Is it adequate to the complexity of the dental treatment?	Yes	56.2%
	No	43.8%
Do you prefer treatment financed by the National Health Fund? (if possible)	Yes	42.4%
	No	57.6%

It was found that the price of root canal treatment was not a barrier to undergo the endodontic therapy. (72.2%) of subjects confirmed that the price doesn't influence their decision about taking endodontic treatment, (78.3%) of subjects said they will pay a high price to make sure the proper treatment, and only (12%) of subjects are considering extraction as the terminal procedure. The results are shown in table 6.

**Table 6** Selection criteria between endodontic treatment and tooth extraction

	Responses of study group	
Might the price influence your decision about not taking endodontic treatment?	Yes	27.2%
	No	72.8%
Would you be willing to pay a high price to make sure the proper treatment?	Yes	78.3%
	No	21.7%
Would you take the decision of tooth extraction rather than take endodontic treatment?	Yes	12%
	No	88%

When analyzing the results about the criteria for selecting the person for performing endodontic treatment it was found that 66.8% of respondents preferred the specialist to carry out the root canal treatment, 26.7% of respondents chose a dentist recommended by friends or relatives. The results are shown in table 7.

It was found that 49.7% of respondents considered that professional staff is the most important criteria for selecting dental office, followed by reasonable price (16.6%), quick and easy access (13%), and painless treatment (9.2%). The results are shown in table 8.

**Table 7** The criteria for selecting the person for performing endodontic treatment

	Responses of study group
Student of dentistry	1.4%
Recommended doctor	26.7%
Specialist	66.8%
Doctor without specialization	0.9%
Not important	4.2%

**Table 8** The criteria for selecting dental office

	Responses of study group
Free of charge treatment	7.8%
Professional staff	49.7%
Reasonable price	16.6%
Painless treatment	9.2%
Friendly service	3.7%
Quick and easy access	13%

## DISCUSSION

Endodontic treatment is complicated and technically very demanding. It is well-recognized that the outcome of root canal therapy based on the pre-operative diagnosis of the tooth, microbial factors, maintenance of root canal treatment standards including the quality of both root canal fillings and coronal restorations and individual factors such as the dentist knowledge, attitudes and skills (Tronstad L *et al.* 2000, Eriksen HM *et al.* 2002).

There are many factors that affect decision making in endodontics as tooth related conditions, patient related conditions, and operator related conditions (Rosenberg PA and, Malek A 2016). It is very important to pay attention to psychosocial considerations of the patient such as motivation (culture), occupation, previous dental experience, suspicious patient, rushed patient, and fear and apprehension. Many studies suggested that the level of patients' knowledge and awareness regarding endodontic treatment may influence the decision-making and choice of the patients, it may prevent them from receiving the therapy (Janczarek M *et al.* 2014, Doumani *et al.* 2017).

This survey revealed average knowledge about root canal treatment among Syrian patients, the results of present study are in agreement with the results of previous studies (Janczarek M *et al.* 2014, Doumani *et al.* 2017).

Several studies showed that the toothache (toothache during eating, toothache when biting, or strong spontaneous toothache) is the main cause that confirms the need for endodontic treatment in the vast majority of patients (Sisodia N *et al.* 2008, Janczarek M *et al.* 2014, Doumani *et al.* 2017). This result has been observed in present study.

This study also confirmed the importance of professionalism and competence of operator in the selection of participants. Most respondents (66.8%) preferred the specialist to carry out the root canal treatment while 49.7% of respondents considered that professional staff is the most important criteria for selecting dental office.

Related to the most important concern associated with the root canal treatment the results shown that (44.2%) of respondents indicated that the pain was the most important concern, follow by long treatment time (16.6%) These results are resembled to the results of (Janczarek M et al. 2014, Doumani et al. 2017). (9.7%) of subjects in this study indicated that the burden was the most important concern associated with the root canal treatment. This result is not in agreement with the result of (Janczarek M et al. 2014).

Cost associated with endodontic treatment was not serious barrier in this study, so the results of present study are in agreement with the results of previous studies (Janczarek M et al. 2014, Doumani et al. 2017). When the patients were asked about their behavior in case of toothache (37.8%) of respondents in this study said they had used home remedies to relieve toothache while (62.2%) said they had referred to the dentist. This result is somewhat close to the results of previous studies (Janczarek M et al. 2014, Doumani et al. 2017).

## CONCLUSION

1. Patients' knowledge and awareness regarding endodontic treatment may influence the decision-making and choice of the patients, it may prevent them from receiving the therapy
2. There has been increased knowledge and concern of patients about endodontic treatment among Syrian population.
3. Cost associated with endodontic treatment, professionalism and competence of clinician are crucial factors that affect decision making in endodontics.

## Acknowledgements

The authors wish to acknowledge the staff of department of restorative dental science in AlFarabi colleges for Dentistry and Nursing, Riyadh, Saudi Arabia, and the staff of faculty of dentistry in Aleppo university, Aleppo, Syria.

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### How to cite this article:

Adnan Asaad Habib et al.2017, Dental Patients' Knowledge and Awareness About Root Canal Treatment In Syrian Population: Survey-Based Research. *Int J Recent Sci Res.* 8(10), pp. 20583-20586. DOI: <http://dx.doi.org/10.24327/ijrsr.2017.0810.0920>

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