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Knowledge, Attitudes and Practice of Restoring Endodontically Treated Teeth by General Dental Practitioners In A Northern Indian City: An Original Study

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ABSTRACT

Aim: Modern day practices have evidenced about various advancements in the restoration of grossly decayed teeth. However, definitive rehabilitation by post and core is one of the oldest and frequently employed modality in most of countries. These also have imperative deliberations for both Endodontists and Prosthodontists The sole aim of this study was to evaluate the knowledge, current approaches, techniques and practices for the restoration of endodontically treated teeth (ETT) amongst general dental practitioners in Panipat District, India.

Materials & Methods: This study was entirely based on a cross sectional philosophy which was based on a questionnaire. A total of 100 private dental practitioners of Panipat were approached and requested to fill the questionnaire as per their own experiences. We employed close ended questionnaire having queries about knowledge, current approaches, techniques and practices for the restoration of endodontically treated teeth (ETT). The questionnaire was distributed amongst general dentists at their private clinics by hand. We ensured to process the data of practitioners who truthfully answered to this questionnaire. Replies were gathered and data was analyzed statistically to calculate final outcomes.

Results: Statistical analysis was completed using statistical software Statistical Package for the Social Sciences (SPSS). The intended data was subjected to appropriate statistical tests to obtain p values, mean and standard deviation. $P \leq 0.05$ was considered as statistically significant. Approximately 46 practitioners were agreed that they frequently place post in Endodontically treated teeth. 89 practitioners believe that post usually reduces fracture probability of Endodontically treated teeth. 49 practitioners think that cast post & core is the best technique for restoring endodontically treated teeth. 51 practitioners think that Sodium Hypochlorite is best solution for rinsing canal before post cementation**.**

Conclusion: Within the limitations of the study authors concluded that the studied dentists had a good knowledge of the current techniques and advanced materials for restoring endodontically treated teeth. As it is a promising boom in the field of Endodontics and Prosthodontics, regular awareness camps, educational programs and technique demonstrations must be conducted.

Keywords: Prosthodontics, Endodontics, Post, Questionnaire, Core.

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INTRODUCTION

As we all are aware that the ultimate survival of endodontically treated, post-restored teeth depends on a multitude of facts and factors. The sole objective of any endodontic and restorative treatment is to restore the normal function and maximum intercuspation of the dentition and to sustain the constancy of the dental arch.[1] Before the potent emergence of these rehabilitative techniques, teeth were considered non restorable. The ultimate fates of such teeth were extraction only. However with the invention of these newer modalities, dental extractions can now be avoided because of the predictable clinical success rate of endodontic therapy. Literature has well evidenced these success rates up to 96%.[2-4] The final rehabilitation of endodontically treated teeth has several dilemmas because of the loss of tooth structure by caries, trauma, fracture, previous restoration and endodontic therapy. The overall combined effects of all these intermingling factors are nothing but diminished fracture resistance of the concerned tooth. Many authors in the past have shown that endodontically treated teeth are usually have shorter survival time than vital teeth.[5] Furthermore it is also believed that endodontically treated teeth are frequently structurally compromised due to a series of deleterious events. These could be frequent caries or trauma, endodontic treatments and other restorative procedures.[6-8] This actually necessitates increasing the longevity of the concerned tooth. Therefore, the rehabilitative procedures of endodontically treated teeth using post and core have been proven to be best amongst all other available techniques. Several pioneer studies have illustrated that the dentin in endodontically treated teeth is substantially different than dentin in teeth with "vital" pulps. It was also believed that the dentin in endodontically treated teeth was more brittle mainly because of water loss and loss of collagen cross-linking.[9-12] Therefore post is of vital importance wherein it retains a core in a tooth with extensive loss of coronal tooth structure. Nevertheless, preparation of a post space significantly increases the risk of a final restorative procedure. Additionally, several types of iatrogenic and procedural errors have also been reported during post-space preparation. Therefore, with the increasing technicalities and material advancements, authors aimed to evaluate the knowledge, current approaches, techniques and practices for the restoration of endodontically treated teeth (ETT) amongst general dental practitioners in Panipat, India.

MATERIALS & METHODS

The present study was conducted to evaluate the knowledge, current approaches, techniques and practices for the restoration of endodontically treated teeth (ETT) amongst general dental practitioners in Panipat, India. It was done on a cross sectional and questionnaire model wherein we studied total 100 private dental practitioners of the city. The contact no and address details of the general dental practitioners were obtained from the registry of city society/association of dental practitioners. There were total 186 registered in this society out of which, 66 were not actively practicing, rest remaining was 120. On further exploration we got that 20 of them not reverted to our questionnaire. Consequently, final sample including in the study was total 100 the general dental practitioners. We have processed the questionnaire response data of 100 respondents efficiently. We had selected and framed the questions of knowledge, current approaches and techniques of restoration of endodontically treated teeth in a questionnaire format. It was a restricted close ended questionnaire containing 8 questions. We had given this questionnaire to the dentists at their clinics by hand. Authors have finalized to perform this study on questionnaire basis because such studied are remarkably useful in mining comprehensive information about personal and group perceptions and opinions. Questionnaire based studies are also capable of saving time and money. Furthermore, such studies also provide a wide range of facts with enhanced explanation and considerations. The confidentiality policy and other human rights of the participants were completely taken care. Informed consent was obtained from the practitioners those were willingly ready for sharing their inputs. The study was conducted over a period of 1 month wherein practitioners were requested to fill and send back the questionnaire. The relative significance of this study was revealed and discussed in detail to all participating dental practitioners. Results was tabulated and subjected to basic statistical analysis. P value less than 0.05 was considered significant ($p < 0.05$).

RESULTS

All responses retrieved from questionnaire work out were sent for statistical analysis using statistical software Statistical Package for the Social Sciences version 21 (IBM Inc., Armonk, New York, USA). The resultant data was subjected to suitable statistical tests to obtain p values, mean, standard deviation, chi- square test, standard deviation. Table 1 showed that out of 100 practitioners, males were 65 and females were 35. Total 30 practitioners were belonging to age group >75 years. We noticed that 8 dental practitioners were falling in the age range of 41-50 years hence we can assume that majority of the participants were related to older age groups. P value was calculated as significant in age range 61-70 years. Estimation of the professional degrees was also done (Table 2). Over 70% respondents were possessing only undergraduate degree while 20 respondents were possessing undergraduate as well as post graduates degrees. We also attempted to evaluate the existing knowledge of respondents as related to the number of years of private practice. More than 65% of the respondents were doing private practice for less than 4 years. Though, 22 respondents were in practice of 4 to 10 years. Just 3 respondents were doing practice for more than 15 years (Table 3). Questionnaire outcomes showed noteworthy outcomes. When assessing combined p value for all questions, it was found to be significant [0.005]. Roughly 46 practitioners were agreed that they frequently place post in Endodontically treated teeth. 89 practitioners believe that post usually reduces fracture probability of Endodontically treated teeth. 49 practitioners think that cast post & core is the best technique for restoring Endodontically treated teeth. 51 practitioners think that Sodium Hypochlorite is best solution for rinsing canal before post cementation (Table 4).

Table 1: Age & gender wise allocation of practitioners.

Age Group (Yrs)	Male	Female	Total %	P value
41-50	4	4	8 [8 %]	0.09
51-60	10	5	15 [15 %]	1.00
61-70	18	6	24 [24 %]	0.01*
70-75	15	8	23 [23 %]	0.80
>75	18	12	30 [30 %]	0.07
Total	65	35	100%	*Significant

***p<0.05 significant**

Table 2: Assessment of practitioners by educational qualification.

Educational Degree	Number	Mean	Standard Deviation
Under Graduate	78	32.53	15.78
Post Graduate	20	33.62	16.53
Post Graduate + PhD	2	3.34	2.53
Total	100	-	-

Table 3: Assessment of practitioners in relation to the number of years of private practice.

Years of Employment	Number	Mean	Standard Deviation
<4	70	16.87	8.24
4-10	22	16.57	11.10
10-15	5	2.67	1.98
>15	3	1.23	0.52

Table 4: Questionnaire responses assessment with related statistical outcomes.

Questionnaire	Variables	Responses of Practitioners in 'Yes' [n]	Responses of Practitioners in 'No' [n]	p Value
1	How frequently you place post in Endodontically treated teeth	46	54	0.005*
2	Do you believe that post usually reduces fracture probability of Endodontically treated teeth	89	11	
3	Do you believe that post reinforces Endodontically treated teeth	91	9	
4	Are you aware of Ferule and Ferule effect	18	82	
5	Do you think that cast post & core is the best technique for restoring endodontically treated teeth	49	51	
6	Do you believe that the diameter of the post preparation must be 1/3rd of the root diameter	79	21	
7	Do you think that Sodium Hypochlorite is best solution for rinsing canal before post cementation	51	49	
8	Do you think that Glass ionomer is the best cement for cementation of the final posts.	68	32	

***p<0.05 significant**

DISCUSSION

There are little subjects in dental science that have been studied more than the restoration of endodontically treated teeth. Literature has well evidenced that restoration of endodontically treated teeth is a topic that is comprehensively studied and yet remains controversial from many perspectives.[13-14] Unfortunately, the diversity of published suggestions and data is confusing and often lead to misconception. As we all are aware that the restoration of endodontically treated teeth has long been and still is controversial. Therefore it is advocated that tooth must be evaluated for occlusal function, restorability, periodontal status, biological width and crown to root ratio prior to execution of root canal treatment. Also, all such contributing issues must be taken into consideration in finalizing treatment plan.[15] Generally, the general dental practitioners are managing endodontically treated teeth solely based on their previous experience without considering standard treatment guidelines. Knowledge based evaluation studies can serve as an imperative tools for judging the present knowledge and understanding of management approaches of practitioners in endodontically treated teeth. While exploration of the relevant literature authors noticed that there are number of studies published about rehabilitation of endodontically treated teeth. However, most of the published data fails to meet the actual requirements of practitioners.[16] The prosthodontists and endodontists were considered as specialists who were treating endodontically treated teeth. Our study aimed to evaluate the knowledge, current approaches, techniques and practices for the restoration of endodontically treated teeth amongst general dental practitioners in studied city. We find that 46 practitioners were agreed that they frequently place post in Endodontically treated teeth. 89 practitioners believe that post usually reduces fracture probability of Endodontically treated teeth. 49 practitioners think that cast post & core is the best technique for restoring endodontically treated teeth. 51 practitioners think that Sodium Hypochlorite is best solution for rinsing canal before post cementation. Therefore authors find that the studied dentists had sound knowledge of the current techniques and advanced materials for restoring endodontically treated teeth.

CONCLUSION

Within the limitations of the study authors concluded that the studied dentists had a good knowledge of the current techniques and advanced materials for restoring endodontically treated teeth. As it is a promising boom in the field of Endodontics and Prosthodontics, regular awareness camps, educational programs and technique demonstrations must be conducted. Our study results must be considered as suggestive for assuming clinical outcomes for such crucial circumstances. Nevertheless, we anticipate few other large scale studies to be conducted that could further establish certain standard norms.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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