

International Journal of Research in Health and Allied Sciences

Journal home page: www.ijrhas.com

Official Publication of "Society for Scientific Research and Studies" [Regd.]

ISSN: 2455-7803

Index Copernicus value [ICV] = 68.10;

ORIGINAL RESEARCH

Knowledge and assessment of private dental practitioners for rubber dam usage during endodontic procedures

Farheen Mushtaq¹, Anjum Sahar², Waseem Manzoor³

¹MDS conservative dentistry and endodontics; Private Consultant

²MDS Oral Medicine and radiology; Private Consultant

³MDS Prosthodontics, Senior resident, SKIMS Srinagar

ABSTRACT:

Background: Rubber dam use reduces microbial contamination and the potential for patients swallowing or inhaling irrigants, hand-files, infected tooth debris, etc. The various parameters which influence the endodontically treated teeth are the measure of tooth structure loss, periapical status of the tooth, position of the tooth, occlusal contacts, number of nearby teeth, remaining coronal and root dentine, type of final restoration, kind of post, core material, and presence of a ferrule preparation (if necessary).

Aim of the study: To study knowledge and assessment of private dental practitioners for rubber dam usage during endodontic procedures. **Materials and methods:** The study was conducted in the Department of Conservative Dentistry and Endodontics of the Dental institute. For the study, 130 private dental clinics in the district were selected. A pre-framed questionnaire with closed questions (questions with answers to choose from) was selected and mailed to all the selected practitioners. Information related to year of graduation, practice type and gender of the respondents, information related to use of rubber dam in operative and endodontic procedures, information related to the dentist's attitude to the use of rubber dam and information related to dentist's reasons for using or not using rubber dam were sought in the questionnaire. **Results:** The age group of the participants belonged to 25 to 70 years of which most of the participants belonged to age group 30-60 years. There were 27 dentists with age <30 years, 71 with age between 30-60 years and 32 dentists with age > 60 years. 79 participating dentists were males and 51 dentists were females. The results showed that 3 male dentists and 2 female dentists always used rubber dam; whereas 48 male dentists and 28 female dentists never used rubber dam. **Conclusion:** Within the limitations of the present study, it can be concluded that the rubber dam usage for endodontic procedures is very low in the local district by private dental practitioners. The practitioners rely on their experience for the treatment of the patient. Henceforth, it is of utmost importance to educate the practitioners about the various clinical benefits of using rubber dam for all the therapeutic and surgical procedures.

Keywords: Rubber dam, endodontic procedure, infection control, moisture control

Received: 23 June, 2020

Revised: 25 July, 2020

Accepted: 28 July, 2020

Corresponding author: Dr.Farheen Mushtaq

This article may be cited as: Mushtaq F, Sahar A, Manzoor W. Knowledge and assessment of private dental practitioners for rubber dam usage during endodontic procedures. Int J Res Health Allied Sci 2020; 6(5): 144- 147.

Introduction:

'Endodontic procedures must never be performed without the rubber dam' is the title of a paper by Heling and Heling¹ that clearly emphasizes the essential role of the rubber dam (RD) for every endodontic procedure. For more than 150 years, it has been known that RD use reduces microbial contamination and the potential for patients swallowing or inhaling irrigants, hand-files,

infected tooth debris, etc. Furthermore, every dental student is taught early in instruction that in clinical practice the RD enhances visibility, improves visual access to the canal(s), optimizes moisture control and retraction of the soft tissue, thus enhancing the efficiency of every endodontic treatment procedure.^{2, 3} Some studies^{4,5} have detailed that the main reason of endodontic treatment disappointment is because of the

reclamation disappointment instead of endodontic treatment itself. The various parameters which influence the endodontically treated teeth are the measure of tooth structure loss, periapical status of the tooth, position of the tooth, occlusal contacts, number of nearby teeth, remaining coronal and root dentine, type of final restoration, kind of post, core material, and presence of a ferrule preparation (if necessary).⁶Hence, the present study was conducted to study knowledge and assessment of private dental practitioners for rubber dam usage during endodontic procedures.

MATERIALS AND METHODS:

The study was conducted in the Department of Conservative Dentistry and Endodontics of the Dental institute. For the study, 130 private dental clinics in the district were selected. The ethical approval for the study was obtained from the ethical committee of the institute. An informed consent was obtained from all the participants after informing them about the procedure and importance of the study. A pre-framed questionnaire with closed questions (questions with answers to choose from) was selected and mailed to all the selected practitioners. Information related to year of graduation, practice type and gender of the respondents, information related to use of rubber dam in operative

and endodontic procedures, information related to the dentist's attitude to the use of rubber dam and information related to dentist's reasons for using or not using rubber dam were sought in the questionnaire. The questionnaires were collected a week after reaching the participant. Data obtained from the questionnaire were collected and stored.

The statistical analysis of the data was done using SPSS version 11.0 for windows. Chi-square and Student's t-test were used for checking the significance of the data. A p-value of 0.05 and lesser was defined to be statistically significant.

RESULTS:

For the study, we mailed questionnaires to 130 private dental clinics in the district. The age group of the participants belonged to 25 to 70 years of which most of the participants belonged to age group 30-60 years. There were 27 dentists with age <30 years, 71 with age between 30-60 years and 32 dentists with age > 60 years. 79 participating dentists were males and 51 dentists were females. The results showed that 3 male dentists and 2 female dentists always used rubber dam; whereas 48 male dentists and 28 female dentists never used rubber dam. On comparing the results, it was found to be statistically significant.

Table 1: Rubber dam usage by dental practitioners for endodontic procedures

Rubber dam used for endodontic procedures	Age (years)			Gender	
	<30	30-60	>60	Male	Female
Never (0)	12	39	25	48	28
Rarely (1-25)	5	19	3	15	12
Occasionally (26-50)	3	7	1	8	3
Often (51-75)	4	3	1	4	4
Mostly (50-75)	2	1	0	1	2
Always (100)	1	2	2	3	2
Total	27	71	32	79	51

Fig 1: Rubber dam usage by dental practitioners for endodontic procedures on the basis of age

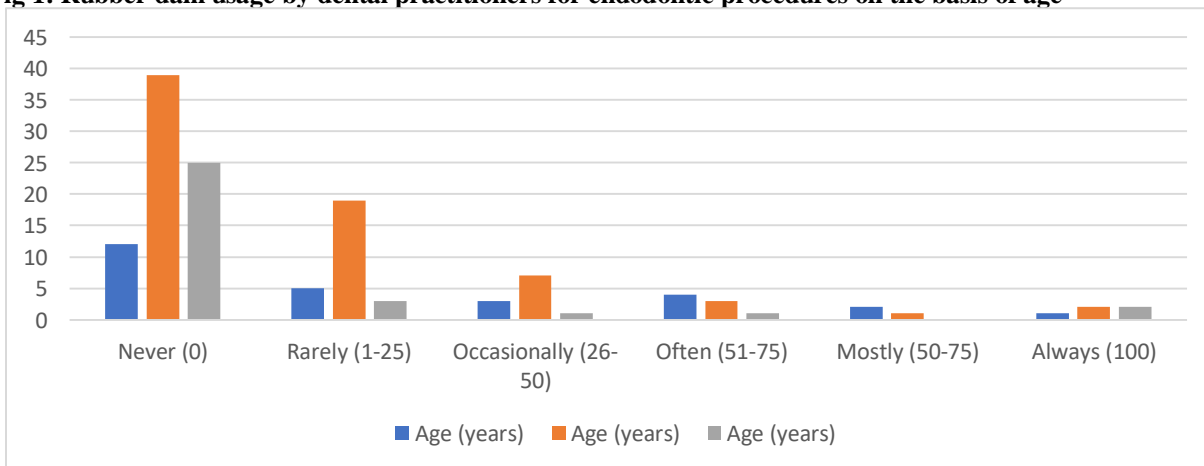
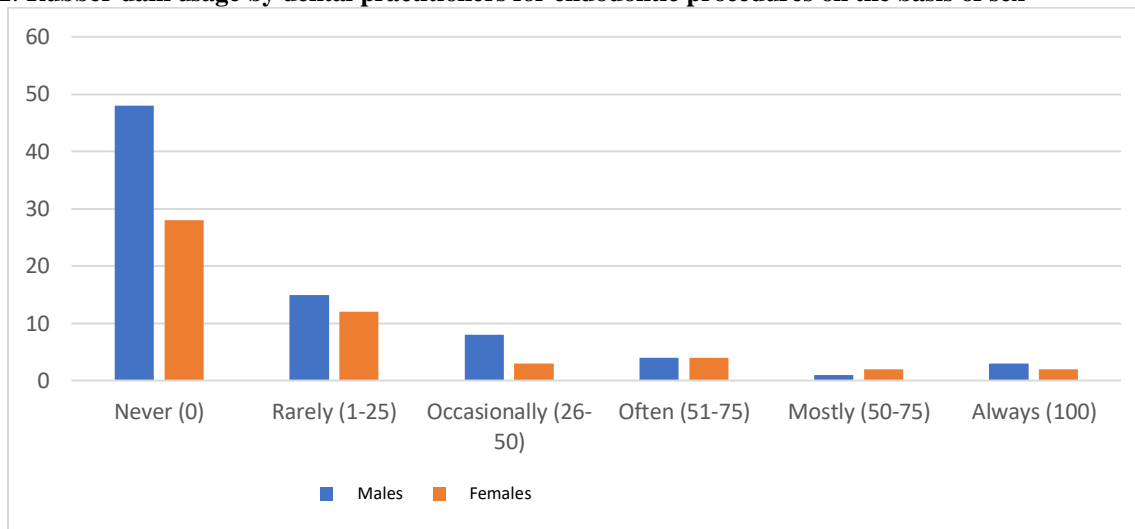


Fig 2: Rubber dam usage by dental practitioners for endodontic procedures on the basis of sex



DISCUSSION:

In the present study, we studied 130 local dental practitioners to study their knowledge and assessment for usage of rubber dam for endodontic procedures. The study was a questionnaire based study and a questionnaire was mailed to each dentist. The questionnaire was collected after 7 days. 79 participating dentists were males and 51 dentists were females. From the data, it was observed that the usage of rubber dam for root canal procedure was very low in our local district. Only 3 male dentists and 2 female dentists always used rubber dam; whereas 48 male dentists and 28 female dentists never used rubber dam. The results were compared with previous studies from the literature. G S et al determined the prevalence and frequency of rubber dam usage for endodontic procedures among general practitioners, specialized practitioners, undergraduate final year students and Endodontists in the state of Odisha, India. A pre-piloted questionnaire was distributed among 737 subjects. Dentists and final year students were surveyed in relation to their prevalence of rubber dam usage. They reported that while about 94% of the subjects knew the use of rubber dam, 30% have used it for root canal cases and 23% use them for all cases of root canal treatment. Use of rubber dam was 15.4% in paediatric patients and 34.4% in adult patients. 68% of subjects received knowledge about rubber dam usage in undergraduate school. 75% felt that rubber dam should be compulsory before endodontic treatment & 90% were willing to gain knowledge through training and continuing dental education programs. They concluded that greater emphasis should be placed on the advantages of using rubber dam in clinical dentistry at dental school and through continuing dental education for practitioners to update their knowledge.⁷ Zou He et al investigated the frequency and influencing factors of

rubber dam usage for endodontic procedures among general dentistry practitioners and specialized practitioners (endodontist) in Tianjin. Three hundred questionnaires were distributed among practitioners from 3 different types of medical institutions in Tianjin. Data were collected and analysed using Chi-square tests. There were 63.3% of respondents who have used rubber dam. However, only 0.4% and 3.1% of them recognized using rubber dam “every time” during caries direct restoration and root canal therapy, respectively. There was no significant difference in rubber dam usage between male and female practitioners. They concluded that the prevalence of rubber dam usage in Tianjin city is still low. The practitioner's gender, years of professional experience, general or specialized field, and the type of dental setting they work for are the factors that need to be considered during making policy and executing training.⁸

Dogra M et al explored the knowledge, attitude, and practice (KAP) toward following proper standards of endodontic practice and use of latest technology. The study was a cross-sectional, descriptive questionnaire study conducted among general dental practitioners (GDPs). The survey was conducted among 156 GDPs. It was observed that the knowledge of majority of the dental practitioners was fair (58 [37.17%]). However, the attitude and practice toward following proper standards of endodontic practice and use of latest technology were poor.⁹ Gilbert GH et al studied with rubber dam use by dental practitioners. Participants were 1490 network dentists. Dentists completed a questionnaire about their attitudes towards rubber dam use during root canal treatment. Three attitude scales comprised 33 items that used a 5-point ordinal scale to measure beliefs about effectiveness, inconvenience, ease of placement, comparison to other isolation techniques and patient factors. They concluded that

general dentists have substantial variation in attitudes about rubber dam use. Beliefs that rubber dam use is not effective, inconvenient, time-consuming, not easy to place or affected by patient factors, were independently and significantly associated with lower rubber dam use.

¹⁰ Lin HC et al surveyed the prevalence of rubber dam usage in nonsurgical root canal treatment (RCT) by dentists under the National Health Insurance system in Taiwan. A total of 1,332 completed RCT cases were randomly selected from a large database from the Bureau of National Health Insurance in Taiwan in 2004. The overall prevalence of rubber dam usage for RCT by dentists under the National Health Insurance system in Taiwan was 16.5%. The frequency of rubber dam usage for RCT by dentists in hospitals (32.8%) was significantly higher than that (10.3%) in private dental clinics. ¹¹

CONCLUSION:

Within the limitations of the present study, it can be concluded that the rubber dam usage for endodontic procedures is very low in the local district by private dental practitioners. The practitioners rely on their experience for the treatment of the patient. Henceforth, it is of utmost importance to educate the practitioners about the various clinical benefits of using rubber dam for all the therapeutic and surgical procedures.

REFERENCES:

1. Heling B, Heling I. Endodontic procedures must never be performed without the rubber dam. *Oral Surg Oral Med Oral Pathol* 1977; 43: 464– 466.
2. Cohen SC. Endodontics and litigation: an American perspective. *Int Dent J* 1989; 39: 13– 16.
3. Ryan W, O'Connell A. The attitudes of undergraduate dental students to the use of the rubber dam. *J Ir Dent Assoc* 2007; 53: 87– 91.
4. Alsamadani KH, Abdaziz el-SM, Gad el-S. Influence of different restorative techniques on the strength of endodontically treated weakened roots. *Int J Dent* 2012. 2012;343712.
5. Bergman B, Lundquist P, Sjogren U, Sundquist G. Restorative and endodontic results after treatment with cast posts and cores. *J Prosthet Dent*. 1989;61:10–5.
6. Naumann M, Blankenstein F, Kiessling S, Dietrich T. Risk factors for failure of glass fiber-reinforced composite post restorations: A prospective observational clinical study. *Eur J Oral Sci*. 2005;113:519–24.
7. G S, Jena A, Maity AB, Panda PK. Prevalence of Rubber Dam Usage during Endodontic Procedure: A Questionnaire Survey. *J Clin Diagn Res*. 2014;8(6):ZC01-ZC3. doi:10.7860/JCDR/2014/9011.4425
8. Zou H, Li Y, Lian X, Yan Y, Dai X, Wang G. Frequency and Influencing Factors of Rubber Dam Usage in Tianjin: A Questionnaire Survey. *Int J Dent*. 2016;2016:7383212. doi:10.1155/2016/7383212
9. Dogra M, Sawai DS, Ganapathy SK, Sharma U, Singh I, Gupta P. Knowledge, attitude, and practice of general dental practitioners toward following proper standards of endodontic practice and use of latest technology in Dehradun: A cross-sectional study. *J Family Med Prim Care*. 2020;9(1):282-286. Published 2020 Jan 28. doi:10.4103/jfmpc.jfmpc_751_19
10. Gilbert GH, Riley JL, Eleazer PD, Benjamin PL, Funkhouser E; National Dental PBRN Collaborative Group. Discordance between presumed standard of care and actual clinical practice: the example of rubber dam use during root canal treatment in the National Dental Practice-Based Research Network. *BMJ Open*. 2015;5(12):e009779. Published 2015 Dec 9. doi:10.1136/bmjopen-2015-009779
11. Lin HC, Pai SF, Hsu YY, Chen CS, Kuo ML, Yang SF. Use of rubber dams during root canal treatment in Taiwan. *J Formos Med Assoc*. 2011 Jun;110(6):397-400. doi: 10.1016/S0929-6646(11)60058-2. PMID: 21741008.