

## ORIGINAL RESEARCH

### Knowledge and awareness of endo-perio lesions among dentists in Bhatinda city

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#### ABSTRACT

**Aim:** The purpose of this study was to evaluate the level of endo-perio lesions' knowledge and awareness among dentists in Bhatinda city.

**Materials and Methods:** The study includes 156 dentists who responded to the survey among 180 dentists. Twelve questions about demographic data, risk factors, and the definition of the disease were asked in the two-part survey. The data was examined using the T test, Chi-square test, and Mann-Whitney U test in Minitab 17 statistical software.

**Results:** Periodontists and endodontists were shown to be considerably aware of endo-perio lesions ( $p=0.001$  and  $p <0.001$ , respectively). It was discovered that general practitioners were largely unaware about these lesions.

**Conclusion:** Other than endodontists and periodontologists, general dentists were found to have less knowledge of endo-perio lesions.

**Keywords:** Awareness; Dentist; Endo-perio lesions.

#### INTRODUCTION

A biologic complex that should be viewed as a whole includes the tooth, the surrounding tissues that sustain it, and the pulp inside. The interaction between these structures has an impact on one another in times of health, function, and sickness. The exposed dentinal tubules, lateral and auxiliary canals, or apical foramen are some of the channels where the link between the periodontium and tooth pulp can be seen. These anatomical structures aid in the treatment of conditions known as endo-perio lesions, which include synchronous pulpal tissue and periodontal connections (endo-perio lesions). [1, 2]

Primary periodontal lesions and endodontic lesions are typically easy to identify clinically. The pulp is vital in basic periodontal disease and responds to vitality testing. The pulp is diseased and infected when there is primary endodontic disease. However, primary endodontic disease with secondary periodontal disease, primary periodontal disease with

secondary endodontic disease, or combination disorders are exceedingly difficult to diagnose because of their clinical and radiographic similarity. [3] The development and progression of such lesions are significantly influenced by the etiologic causes, such as viruses and bacteria, as well as the promoting factors, such as trauma, root resorptions, perforations, cracks, and dental abnormalities. The aetiology, pathogenesis, and accurate diagnosis of each unique condition affect the prognosis and management of endo-perio lesions.[4] Dental trauma or injuries can take many different forms, but they can typically be divided into the following categories: enamel fractures, crown fractures with pulp association, crown fractures without pulp association, crown-root fractures, root fractures, luxation, and avulsion. Depending on the type of injury, dental injuries are managed differently, and the prognosis for pulpal and periodontal ligament recovery is given. [5] Trauma is one of the major causes of endo-perio lesions for these reasons. Iatrogenic factors, such root canal perforations, are significant dental treatment-related problems with a dismal outlook. It might potentially contribute to the development of the endo-perio lesions. [6]

Treatment of these lesions is difficult, and consideration of the pulpal and periodontal compartment involvement is necessary in treatment planning. Taking into account all of factors, pulpal and periodontal issues account for more than 50% of tooth loss. [7] The main goal of this research was to ascertain and gauge the existing level of endo-perio lesions knowledge and awareness among dentists in Bhatinda city.

## **MATERIALS AND METHODS**

General dentists and specialists practising in Bhatinda City were sent a self-administered questionnaire as part of this study. Power analysis was used to calculate the sample size. From dental college and private and public clinics in Bhatinda City, dentists interested in the study were chosen. A total of 156 out of 180 dentists responded to the questionnaire which included 65 general dentists, 10 oral surgeons, 18 endodontists, 10 orthodontists, 16 periodontists, 5 pedodontists, 22 prosthodontists, and 5 oral medicine, 3 public health dentistry, 2 oral pathologist. Therefore, 86.66% was determined to be the participation rate.

The dentists received their questionnaires either physically or through the "WhatsApp" app and email. The study was carried out and the data was gathered in two months time period. The questionnaire took around 10 minutes to complete and featured two main sections with a total of 12 questions. The demographic data of the respondents was covered in the first section. To assess the dentists' expertise and educational background, the second section of the questionnaire consisted of descriptive questions about risk factors and disease descriptions. After listing other elements that will not produce this disease as well as the circumstances that have the potential to induce endo-perio lesions, it has been designed to allow participants to select more than one factor. Additionally, the participants were asked to write out their own multiple-choice answers to questions on the ailment in accordance with Simon et al classification of the endo-perio lesions. The participants were deemed to be aware of the endo-perio lesions if they properly identified these risk factors and the disease's description. [8]

MiniTab 17 Statistical Software was used to conduct the data's statistical analysis (Statistical Software Release, Version 17.3.1. Minitab Inc. USA). We acquired descriptive statistics in terms of frequency and percentage. For numerous comparisons of normally distributed variables with continuous variance, the T test was employed. Mann-Whitney For variables with non-normal distribution, the U test was utilised. Chi-square test was employed to assess binary comparisons. For all tests, p values less than 0.05 were used to indicate statistical significance.

## RESULTS

The study's 156 dentist participants' average age was found to be  $33.6 \pm 7.187$ . Fifteen (9.62%) of the dentists involved in the study work in public hospitals, 111 (71.15%) in private clinics, and 30 (19.23%) are faculty members at university. In total, the study included 65 general dentists, 10 oral surgeons, 18 endodontists, 10 orthodontists, 16 periodontists, 5 pedodontists, 22 prosthodontists, and 5 oral medicine, 3 public health dentistry, 2 oral pathologist. Table 1 displays the participant's demographic information.

The endo-perio lesions were known to the 21 male participants (13.46%) and the 43 female participants (27.56%). In the study, there was no statistically significant relationship between gender and knowledge and awareness levels ( $p=0.417$ ) (Table 2).

**Table 1: The demographic data of the participants**

Variable	N (%)
<b>Gender</b>	
Male	54 (34.62%)
Female	102 (65.38%)
<b>Age</b>	
23-35	86 (55.13%)
36-45	59 (37.82%)
46-70	11 (7.05%)
<b>Service Sector</b>	
Public Hospital	15 (9.62%)
Private Clinics	111 (71.15%)
University	30 (19.23%)
<b>Speciality</b>	
General Dentistry	65 (41.67%)
Oral Surgery	10 (6.41%)
Periodontist	16 (10.26%)
Endodontist	18 (11.54%)
Orthodontist	10 (6.41%)
Pedodontist	5 (3.20%)
Prosthodontist	22 (14.10%)
Oral Medicine	5 (3.21%)
Public health dentistry	3 (1.92%)
Oral pathologist	2 (1.28%)

**Table 2: The comparison of knowledge level with demographic data.**

Variable	Knowledge present	Knowledge absent	P value
<b>Gender</b>			0.417
Male	21	33	
Female	43	59	
<b>Age</b>			0.002
23-35	40	46	
36-45	21	38	
46-70	3	8	
<b>Service Sector</b>			0.001
Public Hospital	5	10	
Private Clinics	41	70	
University	18	12	

<b>Speciality</b>			0.001
General Dentistry	18	47	
Oral Surgery	3	7	
Periodontist	10	6	
Endodontist	12	6	
Orthodontist	6	4	
Pedodontist	2	3	
Prosthodontist	8	14	
Oral Medicine	3	2	
Public health dentistry	1	2	
Oral pathologist	1	1	

## DISCUSSION

Dentists had the option of choosing more than one of the 19 alternatives that were presented to them as potential risk factors for endo-perio lesions in this situation in order to gauge the extent of physicians' understanding and awareness of endo-perio lesions. There was also a four-question quiz on the condition's description.

One of the most frequent difficulties in modern therapeutic practise is the management of endo-perio lesions. The co-existence of pulpal disorders and inflammatory periodontitis may make it more difficult to plan for diagnosis and treatment and may change the sequence in which operations should be done. [1] This is often suitable for people with advanced periodontitis, tooth loss, and pulpal diseases. A precise medical history and rigorous clinical and radiographic evaluation are required to define and exactly determine the addition of each lesion to the patient's issue. [9,10]

Acute or chronic endo-perio lesions can impact the periodontal and pulp tissues. Painful abscesses in endo-perio lesions can be caused by dental trauma or iatrogenic causes. [11] These lesions may also result in pulp inflammation, necrosis from bacterial aetiology, or loss of periodontal tissue. [12] Endodontic infections are said to increase the development of periodontal pockets and to be a risk factor for periodontitis. [13] Dental cavities, porcelain prosthetics, furcations, and grooves are among the other risk factors for endo-perio lesions, however periodontitis, trauma, and iatrogenic diseases are considered to be the main risk factors. [8] The apical foramen, dentin tubules, and accessory (or lateral) channels act as a bridge to connect the pulp and periodontium to other tissues. Utilizing these channels, harmful bacterias harm other tissues and propagate the infection. [14,15]

Simon et al. have developed a classification system for endo-perio lesions. The four categories into which these are separated are primary endodontic lesions, primary endodontic lesions with secondary periodontal relationship, primary periodontal lesions, primary periodontal lesions with secondary endodontic relationship, and "real" combination lesions (9). In 1999, the American Academy of Periodontology added a new category for endo-perio lesions to their list of periodontal diseases. According to this classification, the classification was created based on the symptoms of the condition in addition to the definitions of endo-perio lesions. So, the objective is to make it easier for medical practitioners to identify the sickness. [16]

In this study, 64 out of 156 participants (41.02%) were clinicians who were familiar with the risk factors and clinical criteria for endo-perio lesions. Specialist dentists employed by the university have a higher rate (60%). For medical professionals working in a private clinic and dentists employed by a public hospital, respectively, the rates are significantly lower (36.93% and 33.33%). Following recent publications and strong departmental communication are both factors in the university's greater than average concentration of dentist specialists.

Correct prognosis is crucial after clinically diagnosing endo-perio lesions. A fair treatment strategy is also essential to the accurate prognosis. [17,18] Inadequate therapies originate from clinicians' conviction about endo-perio lesions as a result of their experience. Starting therapy for teeth in need might occasionally result in a loss of labour and time. [19] In this study, it is assumed that dentists working in public hospitals and private clinics have lower levels of awareness and knowledge because they follow current scientific publications and journals at a lower rate than dentists working in universities.

In earlier investigations, it was discovered that dentists' knowledge and awareness levels of endo-perio lesions were quite poor, which is consistent with the findings of our study. According to Khandelwal et al., most of the participants lacked experience with the exception of endodontists and periodontists. [20].

Periodontists and endodontists have better awareness and knowledge levels than dentists in other specialities among dentists who are experts. This is one of the study's anticipated outcomes. It is believed that the fact that endodontists and periodontists frequently study these lesions is the reason for their high degree of awareness of endo-perio lesions.

## CONCLUSION

In this study, dentists who continue their academic studies at the university had a better level of knowledge and awareness regarding endo-perio lesions than dentists working in public hospitals and private clinics. In contrast to expectations, all specialist dentists, with the exception of endodontists and periodontists, had poor awareness and knowledge levels. Holding recurring seminars and training sessions for dentists working in public hospitals and private clinics may improve the knowledge level of dentists in the diagnosis and treatment of endo-perio lesions and lead to more fruitful outcomes with dentists who face these lesions. It's likely that dentists who are trained in specialties will learn about endo-perio lesions throughout their specialisation training, which could save time and effort when determining the likelihood of future endo-perio lesions.

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