



Knowledge and Awareness About Periapical Lesions Among Clinical Students and General Practitioners: A Survey

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ABSTRACT

Periapical lesions of endodontic origin are common pathological conditions affecting periradicular tissues. Microbial infection of pulpal tissues is primarily responsible for initiation and progression of periapical lesions. The primary objective of endodontic therapy should be to restore involved teeth to a state of normalcy nonsurgically. The aim of this survey was to assess knowledge and awareness about periapical lesion among clinical students including third year, final year, interns, postgraduate students and general practitioners. This cross-sectional study was done among clinical students and general practitioners from various institutions in Chennai. A total of 120 participants took part in this survey study. Results were analysed and compared using the SPSS Statistical Software by doing both the frequency tests and correlation tests. Chi-square test shows $P=0$, $P<0.05$, a significant value, proving that there is significant association between having skills and knowledge to handle a patient with periapical lesions and occupation and between gender and awareness about symptoms of periapical lesions. Regarding their knowledge, respondents of the survey showed an acceptable level of knowledge and awareness about periapical lesions.

Key words: Endodontic treatment, Periapical lesion, Root canal treatment, Survey

HOW TO CITE THIS ARTICLE: Dhinesh Kumar S, S Delphine Priscilla Anthony, Knowledge and Awareness About Periapical Lesions Among Clinical Students and General Practitioners: A Survey, J Res Med Dent Sci, 2021, 9 (1): 97-104.

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Received: 29/09/2020

Accepted: 14/12/2020

INTRODUCTION

The infection caused by bacteria to the dental pulp can cause periapical lesions [1]. Periapical lesions are usually diagnosed during radiographic examination or when there is an acute pain the patient's tooth [2]. One of the most common pathological conditions affecting periradicular tissues are periapical lesions. It is usually involved with one or more non-vital teeth with size greater than 200 mm² and it is seen radiographically as a well circumscribed, well-defined radiolucent area bounded by a thin radiopaque line. Upon aspiration or during drainage, periapical lesion produces a straw-colored fluid. Periapical lesions are usually the sequelae of inflammation of the pulp or necrosis with inflammatory mediators spreading through the apical foramen to start a periapical lesion. Periapical lesions may also be seen in rare

instances not related to pulpal inflammation and present as a neoplasm [3]. Histologically, periapical lesions of endodontic origin consist mainly of inflammatory cysts, granulomas, abscesses or apical scar tissue.

Imaging plays an especially important role in diagnosis of various lesions. Periapical lesions secondary to endodontic infection are usually diagnosed and treated based on the initial radiological findings. The final confirmatory diagnosis is performed by histopathological examination of the tissues. Several radiographic features, such as the size and shape of the lesion and the presence of sclerotic border demarcating the lesion, support the diagnosis of periapical lesions. Traditionally, the size of a periapical radiolucent lesion has been thought to give an indication as to the nature of the underlying disease process.

The goal of endodontic therapy should be to return the affected teeth to a state of health and function without surgical intervention due to the drawbacks, which limit its use in the management of periapical lesions. Initially, all inflammatory periapical lesions should

be treated with conservative nonsurgical procedures. When non-surgical techniques have failed, then surgical intervention is preferred [4].

For successful outcomes of root canal therapy, microorganisms within the canal should be eradicated. Different techniques can be used in the nonsurgical management of periapical pathologies, for example method using calcium hydroxide, aspiration-irrigation technique, orthograde root canal therapy decompression technique, lesion sterilization and repair therapy, active nonsurgical decompression technique and the apexum procedure. Surgical intervention has many disadvantages, and hence should be considered as an option only in the case of failure of nonsurgical techniques [5].

Bacteria present in the periradicular area will not be accessible to disinfection procedures. Canals with negative cultures for bacteria are said to have higher success rates as opposed to those canals which test positive [6]. There are higher chances of treatment failure in these teeth with pretreatment periradicular rarefactions. Other than improper cleaning and shaping of the canal, a leaky apical seal is also a contributory factor in endodontic failure due to microbiological activity which can lead to periapical lesions. Seepage of fluids is likely to occur if there is no proper apical seal establishment. This can also perpetuate periradicular inflammation anytime. The chances of a favorable outcome are invariably higher when a proper cleaning of the canal has been undertaken. Thus, the importance of thorough disinfection procedure cannot be over emphasized.

We have numerous highly cited publications on well-designed clinical trials and lab studies [7-24]. Now we are focusing on epidemiological surveys. The idea for this survey stemmed from the current interest in our community.

MATERIALS AND METHODS

Study setting

This survey was done among clinical students and practitioners from various institutions in Chennai. A total of 120 participants took part in this survey study.

Study subjects

A total of 120 dental interns and practitioners

took part in this survey

METHODOLOGY

A survey was conducted through an online standard questionnaire with 16 yes or no questions sent via a Google Form application. The questionnaire consisted of questions about the knowledge, awareness, and practice of periapical lesions among Saveetha Dental College Clinical students and general practitioners. Adequate time was provided to fill the questionnaire. The responses of the students were recorded, analyzed for flaws, checked for completeness and were taken up for assessment.

Statistical analysis

After data was collected and coded, the statistical analysis was done using the IBM SPSS Statistical Software package (Version 20.0). All the frequency tests were carried out and the Chi-square test was done at a significance level.

RESULTS AND DISCUSSION

A total of 120 dental practitioners participated in the study, where all these dental practitioners which includes 58% males and 43% females (Figure 1) with third year and final year students, dental Intern, postgraduate students, and general practitioners. Most of the respondents are from the third year and final year student category (Figure 2).

When questioned on their awareness of symptoms of periapical lesions, majority of respondents (84%) reported that they are aware about the symptoms of periapical lesions (Figure 3).

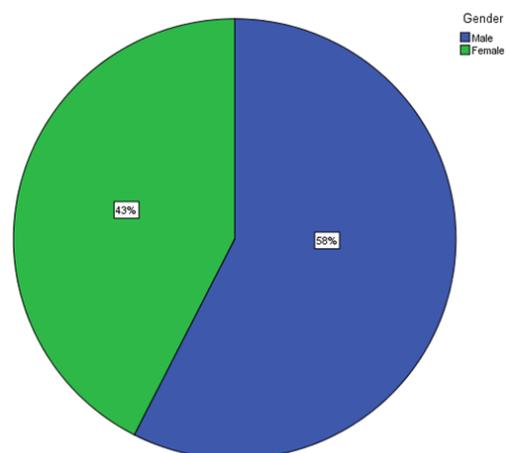


Figure 1: Pie chart representing gender distribution with majority of the respondents are males,58%.

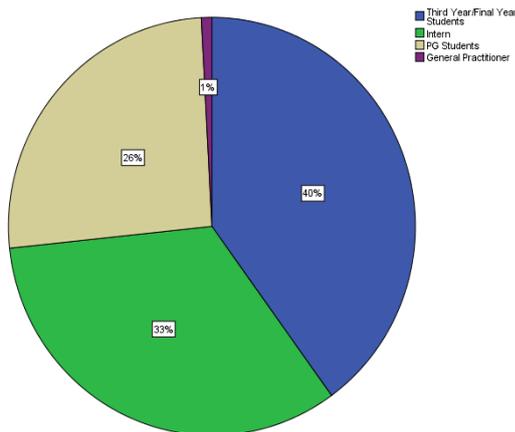


Figure 2: Pie chart representing the distribution of occupations. Majority of respondents (40%) are third year and final year students.

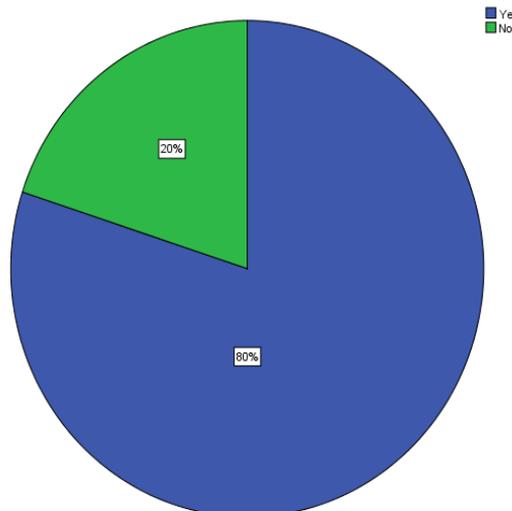


Figure 4: Pie chart representing the percentage distribution of awareness about etiological factors of periapical lesions. Majority of respondents (80%) reported that they are aware about the etiological factors of periapical lesions.

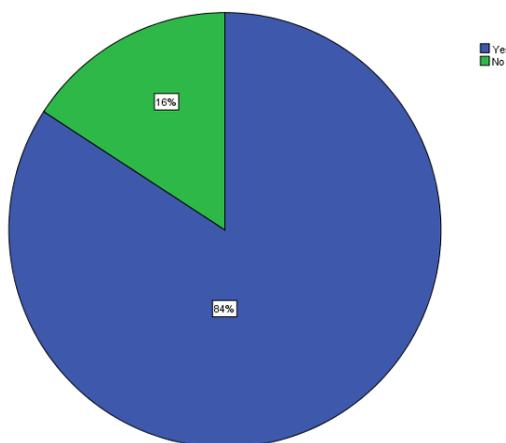


Figure 3: Pie chart representing the percentage distribution of the awareness of symptoms of periapical lesions. Majority of respondents (84%) reported that they are aware about the symptoms of periapical lesions.

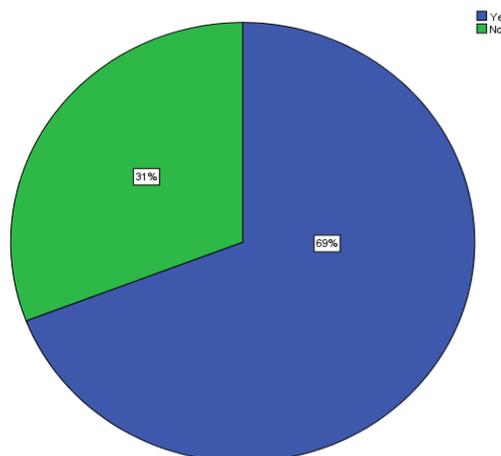


Figure 5: Pie chart representing the percentage distribution of questions if the respondents have ever encountered patients with periapical lesions in their dental practice. Majority of respondents (69%) reported that they have encountered patients with periapical lesions in their dental practice.

When inquired about awareness about etiological factors of periapical lesions. Majority of respondents (80%) reported that they are aware about the etiological factors of periapical lesions by saying ‘Yes’ (Figure 4).

When the respondents were questioned if the respondents ever encountered patients with periapical lesions in their dental practice, most respondents (84%) reported that they have encountered patients with periapical lesions before in their dental practice (Figure 5).

On a question about the knowledge about periapical lesion being asymptomatic sometimes among the participants of the survey, most respondents (71%) reported that they are aware about periapical lesion being asymptomatic sometimes by saying ‘Yes’ (Figure 6).

On assessment on awareness about the methods of diagnosing periapical lesions among the

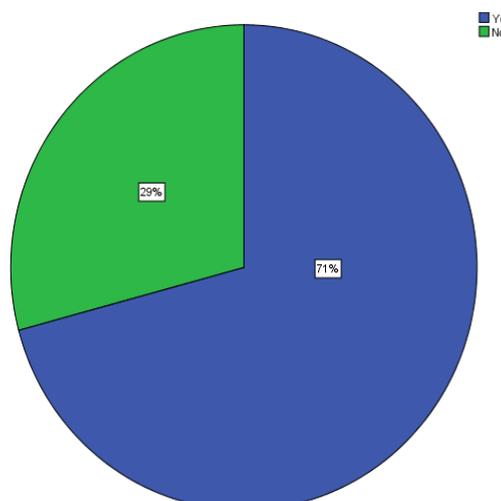


Figure 6: Pie chart representing the percentage distribution of the knowledge about periapical lesion being asymptomatic sometimes. Majority of respondents (71%) reported that they are aware about periapical lesion being asymptomatic sometimes.

participants of most respondents (79%) reported that they are aware about the methods of diagnosing periapical lesions (Figure 7).

When inquired about the ability to manage if they ever encounter a patient with periapical lesion, majority of respondents, 75% reported that they are aware about the ability to manage if they ever encounter a patient with periapical lesion by saying 'Yes' and 25% of the respondents said 'No' (Figure 8).

When questioned about the antibiotics prescribed for periapical lesions majority of respondents, 79% reported that they are aware about the antibiotics prescribed for periapical lesions by saying 'Yes' and the remaining 21% responded by saying 'No' (Figure 9).

When inquired about about intracanal medicament in management of periapical lesions majority of respondents answering 'Yes', 70% which reports that they are aware about intracanal medicament in management of periapical lesions and the remaining of the respondents, 30% answering 'No' (Figure 10).

When questioned on awareness about the consequences if periapical lesions are left untreated majority of respondents, 71% reported that they are aware about the consequences if periapical lesions are left untreated and 29% answer 'No' (Figure 11).

When inquired about awareness about the sequelae of periapical lesion majority of

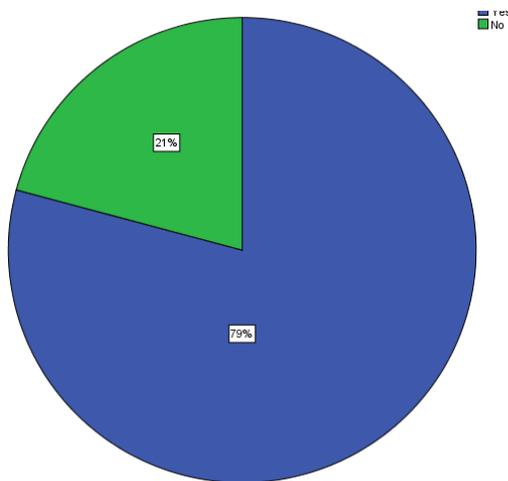


Figure 7: Pie chart representing the percentage distribution of awareness about the methods of diagnosing periapical lesions. Majority of respondents (79%) reported that they are aware about the methods of diagnosing periapical lesions.

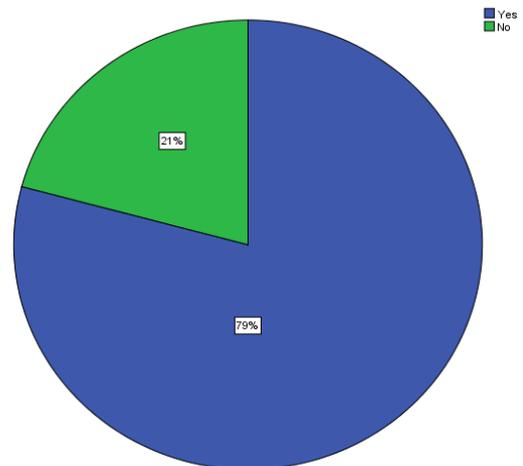


Figure 9: Pie chart representing the percentage distribution of awareness about the antibiotics prescribed for periapical lesions. Majority of respondents (79%) reported that they are aware about the antibiotics prescribed for periapical lesions.

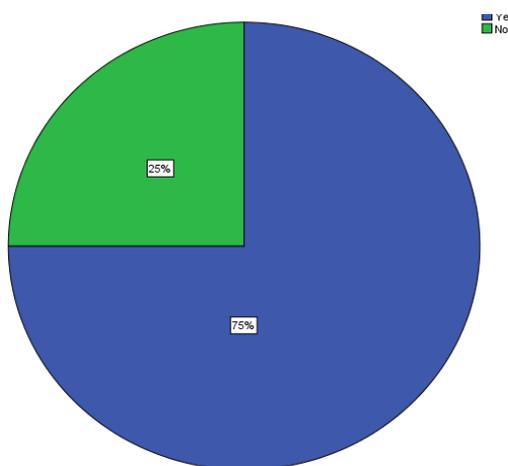


Figure 8: Pie chart representing the percentage distribution of awareness about the ability to manage if they ever encounter a patient with periapical lesion. Majority of respondents (75%) reported that they are aware about the ability to manage if they ever encounter a patient with periapical lesion.

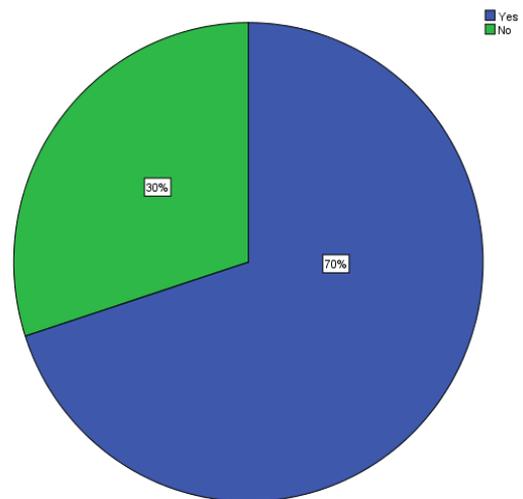


Figure 10: Pie chart representing the percentage distribution of awareness about intracanal medicament in management of periapical lesions. Majority of respondents (70%) reported that they are aware about intracanal medicament in management of periapical lesions.

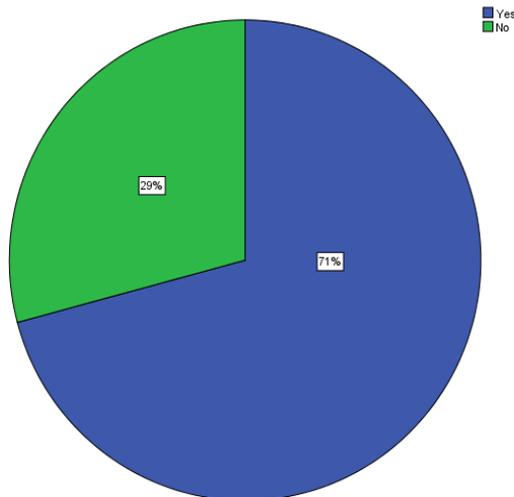


Figure 11: Pie chart representing the percentage distribution of awareness about the consequences if periapical lesions are left untreated. Majority of respondents (71%) reported that they are aware about the consequences if periapical lesions are left untreated.

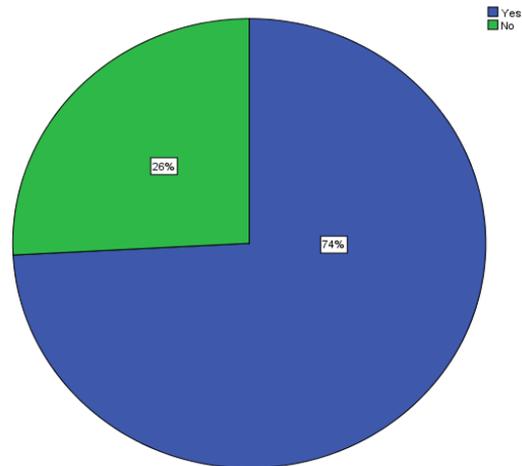


Figure 13: Pie chart representing the percentage distribution of awareness about the clinical signs of periapical lesions. Majority of respondents (84%) reported that they are aware about the symptoms of periapical lesions.

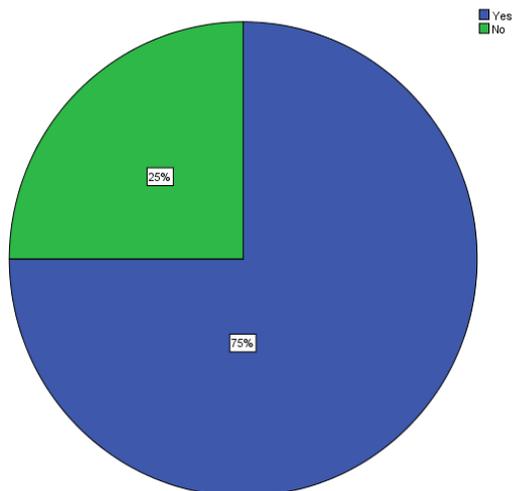


Figure 12: Pie chart representing the percentage distribution of awareness about the sequelae of periapical lesion. Majority of respondents (75%) reported that they are aware about the sequelae of periapical lesion.

respondents which is 75% answered 'Yes' which implies that they are aware about the sequelae of periapical lesion (Figure 12).

When assessed about the clinical signs of periapical lesions, majority of respondents, 84% reported that they are aware about the symptoms of periapical lesions and the remaining 16% are unaware (Figure 13).

When questioned about having enough skills and knowledge to handle a patient periapical lesion majority of respondents which is 63% reported that they are having enough skills and knowledge to handle a patient with periapical lesion (Figure 14).

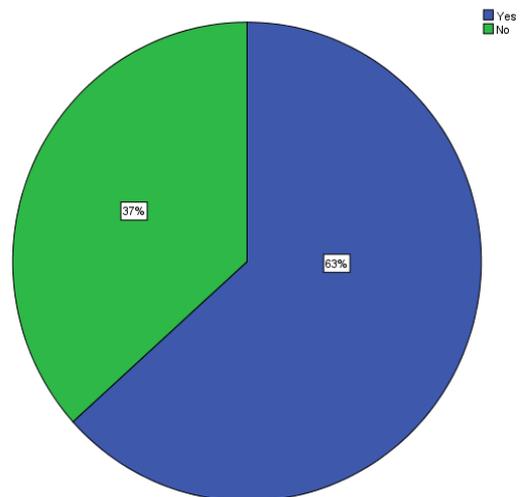


Figure 14: Pie chart representing the percentage distribution about having enough skills and knowledge to handle a patient with periapical lesion. Majority of respondents (63%) reported that they are having enough skills and knowledge to handle a patient with periapical lesion.

When assessed about the knowledge that the Weine's classification is used in obturation of periapical lesions majority of respondents, 68% reported having knowledge that Weine's classification is used in obturation of periapical lesions (Figure 15).

When inquired about having awareness about the term lesion sterilization and tissue repair, majority of respondents, 84% reported that they are aware about the term lesion sterilisation and tissue repair (Figure 16).

When questioned about having awareness about the awareness if a non-surgical treatment would workout in treating periapical lesion cases, majority of respondents, 56% reported that they

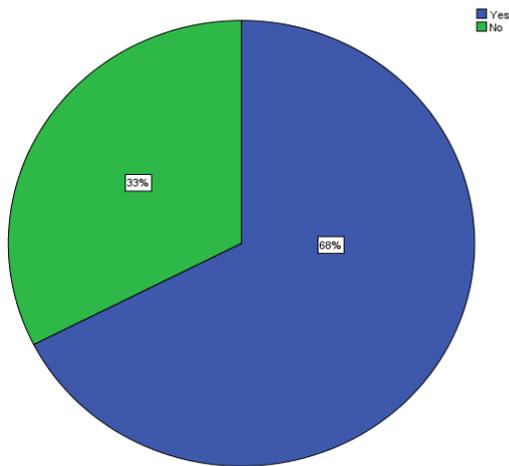


Figure 15: Pie chart representing the percentage distribution about the knowledge that the Weine's classification is used in obturation of periapical lesions. Majority of respondents (68%) reported having knowledge that Weine's classification is used in obturation of periapical lesions.

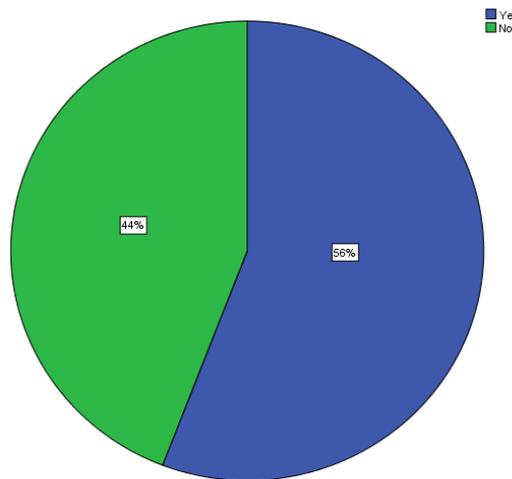


Figure 17: Pie chart representing the percentage distribution about if a non-surgical treatment would workout in treating periapical lesion cases with majority of respondents, 56% reported that they are aware that non-surgical treatment would workout in treating periapical lesion cases.

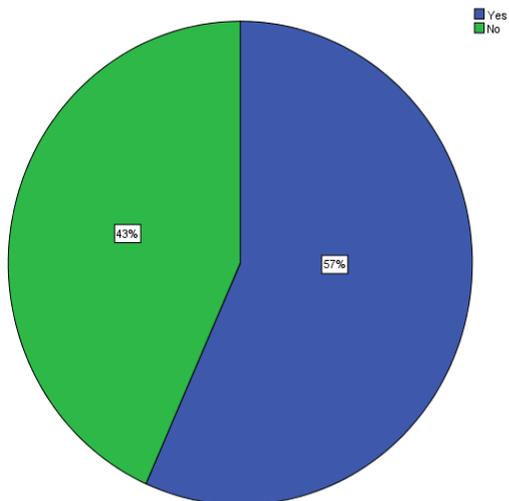


Figure 16: Pie chart representing the percentage distribution about awareness about the term lesion sterilization and tissue repair with majority of respondents, 57% reported that they are aware about the term lesion sterilization and tissue repair.

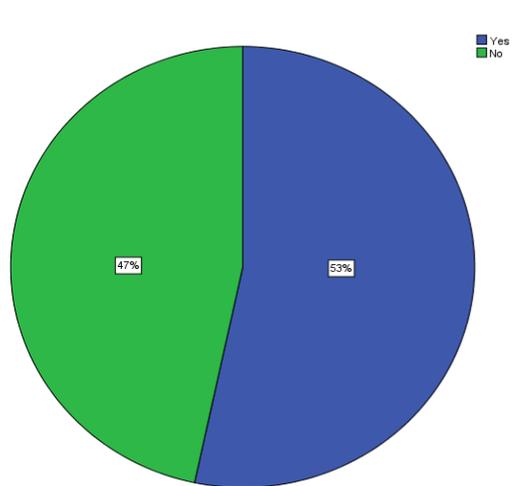


Figure 18: Pie chart representing the percentage distribution on awareness about how to treat periapical lesions in endodontically treated tooth and majority of the respondents 53% reported that they know how to treat periapical lesions in endodontically treated tooth.

are aware that non-surgical treatment would workout in treating periapical lesion cases (Figure 17).

When inquired about awareness on how to treat periapical lesions in endodontically treated tooth and majority of the respondents, 53% reported that they know how to treat periapical lesions in endodontically treated tooth (Figure 18).

Figure 19 shows association between having skills and knowledge to handle a patient with periapical lesion and occupation with majority of the respondents in each category answered 'Yes' with postgraduate students being the highest with 28%.

Figure 20 shows association between gender and awareness about symptoms of periapical lesions. Majority of the respondents in each category answered 'Yes' with male respondents being the highest, 66%.

CONCLUSION

Knowledge and awareness about periapical lesion are important in diagnosis and treatment of the disease. Dental practitioners including third year, final year, interns, postgraduate students, and also general practitioners should always be updated with all the information about periapical lesions. Within our study limits, regarding their knowledge, they showed an

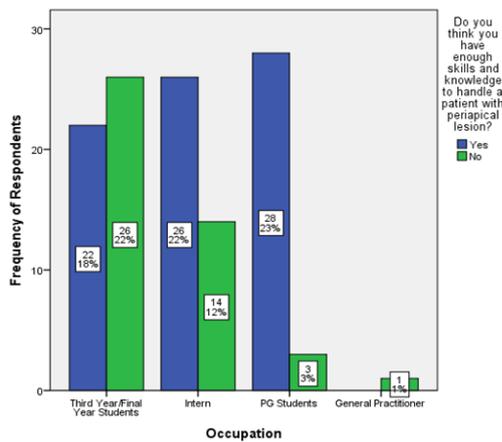


Figure 19: Bar graph shows association between having skills and knowledge to handle a patient with periapical lesion and occupation. X- axis denotes responses of third year and final year students, Interns, postgraduate students, and general practitioners with 'Yes' (Blue) or 'No' (Green). Y- axis represents the frequency of respondents. Majority of the respondents in each category answered 'Yes' with postgraduate students being the highest with 28%. Chi-square test shows P=0, P<0.05, a significant value. Hence proving that there is significant association between having skills and knowledge to handle a patient with periapical lesions and occupation.

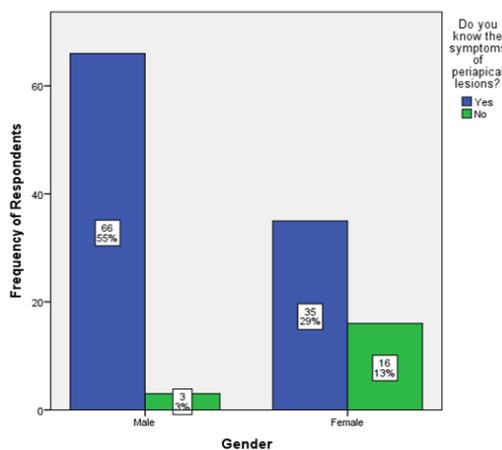


Figure 20: Bar graph shows association between gender and awareness about symptoms of periapical lesions. X- axis denotes males and females with responses 'Yes' (Blue) or 'No' (Green). Y- axis represents the frequency of respondents. Majority of the respondents in each category answered 'Yes' with male respondents being the highest, 66%. Chi-square test shows P=0, P<0.05, a significant value. Hence proving that there is significant association between gender and awareness about symptoms of periapical lesions.

acceptable level of knowledge and awareness about periapical lesions.

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