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Awareness and Knowledge About Various Dental Treatments Among Engineering Students

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Abstract: Engineering students belong to a large scale of educated and professional group of people who are prone more to stress and oral health related problems. This study is conducted in order to associate the level of awareness engineering students are of dental treatments and their extent of knowledge about implementing at need. To study the extent of awareness and knowledge about various dental treatments among engineering students. A set of questionnaires were prepared, developed and circulated among the engineering students in relation with the awareness and knowledge about various dental treatments. A total of 217 responses were collected and analyzed. The results were compiled for analysis.The obtained results show that engineering students are widely aware about various dental treatments.The study concludes that of the growing and enhancement in technology, the extent of awareness and knowledge about various dental treatments among engineering students is quite good.

Keywords: Engineering students, oral health, dental treatments,knowledge and awareness

INTRODUCTION

General health cannot be maintained if not a good oral health is maintained. The mouth is regarded as the gateway of the body and acts as a mirror which reflects the status of good health, if not taken proper care the common oral problem faced by the majority are periodontitis, for which even herbs with antioxidant capacity have found to be effective as a alternative treatment modality (Kassak, Dagher and Doughan, 2001; Thamaraiselvan *et al.*, 2015; Ramesh, Sheeja Saji Varghese, *et al.*, 2016). Oral health plays an important role in maintaining overall health. Diagnostic aids such as radiographs and cone beam computed topography can be used to detect oral diseases or problems(Kavarthapu and Thamaraiselvan, 2018). Various biomarkers associated with periodontitis have been evaluated in different studies.(Varghese *et al.*, 2015; Khalid *et al.*, 2016; Mootha *et al.*, 2016; Ramesh, Sheeja S. Varghese, *et al.*, 2016; Khalid, 2017; Priyanka *et al.*, 2017) Recent achievements in the field have brought newer methods in treating periodontitis such as stem cell therapy and plasma rich growth factors (Bopp, 2001; Panda *et al.*, 2014; Avinash, Malaippan and Dooraiswamy, 2017; Ravi *et al.*, 2017). It is presumed that mass media, dental staff are the main sources of oral health information to the public and regarding the newer treatment modalities (Petersen and Kwan, 2011; Ramesh, Sheeja S. Varghese, *et al.*, 2016). The recent introduction of better and finer technologies have paved the way for newer inventions and discoveries in the field of dental treatments. Dental treatments are practices widely related to the oral cavity(Gambhir, 2015; Priyanka *et al.*, 2017; Ramesh, Ravi and Kaarthikeyan, 2017; Ramesh *et al.*, 2019). Majority of dental problems are commonly related to dental caries (tooth decay), periodontal disease for which common treatment involves restoration, tooth filing, extraction of tooth, fixing a missing tooth(American Academy of Cosmetic Dentistry, no date). This study was carried out to find the extent of awareness and knowledge among engineering students on various dental treatments. Previous studies carried out emphasized on a particular group of college students conducting and analyzing the extent of periodontal health and oral diseases(Almas, Al-Hawish and Al-Khamis, 2003; Al-Omari and Hamasha, 2005; Komabayashi *et al.*, 2005; Dagli *et al.*, 2008; Ohshima *et al.*, 2009; Al-Zarea, 2013; Essamet and Darout, 2016), whereas not many studies have been done in extent to study about the knowledge and awareness of various dental treatments among engineering students. The lack of knowledge on (or) about dental treatments, oral health related issues was not much considered in the previous studies, current study focuses on filling the answers of extent of awareness and knowledge about dental treatments among engineering students.Our team has rich experience in research and we

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have collaborated with numerous authors over various topics in the past decade (Deogade, Gupta and Ariga, 2018; Ezhilarasan, 2018; Ezhilarasan, Sokal and Najimi, 2018; Jeevanandan and Govindaraju, 2018; J *et al.*, 2018; Menon *et al.*, 2018; Prabakar *et al.*, 2018; Rajeshkumar *et al.*, 2018, 2019; Vishnu Prasad *et al.*, 2018; Wahab *et al.*, 2018; Dua *et al.*, 2019; Duraisamy *et al.*, 2019; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Gheena and Ezhilarasan, 2019; Malli Sureshbabu *et al.*, 2019; Mehta *et al.*, 2019; Panchal, Jeevanandan and Subramanian, 2019; Rajendran *et al.*, 2019; Ramakrishnan, Dhanalakshmi and Subramanian, 2019; Sharma *et al.*, 2019; Varghese, Ramesh and Veeraiyan, 2019; Gomathi *et al.*, 2020; Samuel, Acharya and Rao, 2020)

The aim of the current survey is on studying the extent of awareness and knowledge of various dental treatments among engineering students.

MATERIALS AND METHOD

A questionnaire survey was conducted among engineering students. A total of 217 responses were collected. The first set of questions were based on their extent of maintaining oral hygiene need and awareness. The second set of questions were based on their extent of knowledge of various dental treatments. A total of 18 questions were circulated among the engineering students, students belonging to a group of other professions were excluded. The obtained results were analyzed in SPSS software of latest version

RESULTS AND DISCUSSION

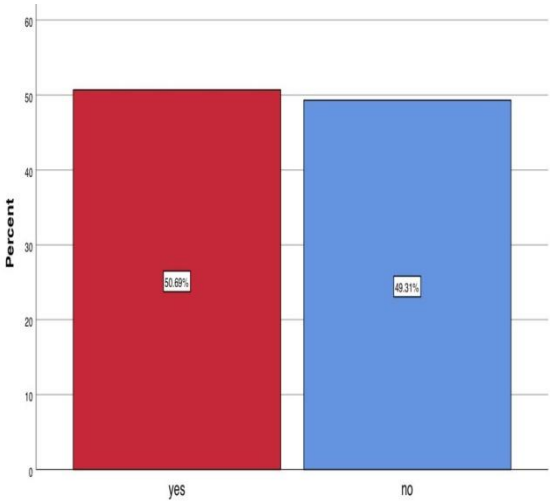

Fig.1: Bar graph depicting the responses collected for the question whether the students have visited a dentist before where X axis represents the options given and Y axis represents the number responses for which 50.7% of the population respond no and 49.3% respond stating yes.

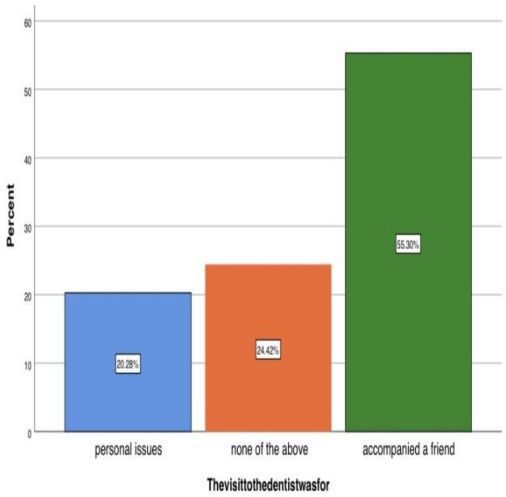

Fig.2: Bar graph depicting the responses collected for the question for the Purpose of visiting a dentist where X axis represents the options given and Y axis represents the number responses for which 53.3% visited as by accompanying a friend, 20.3% visited for personal issues and 24.4% agreed to none of the above.

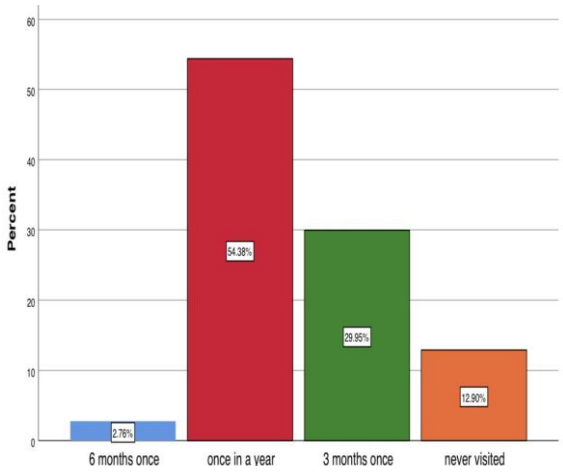

Fig.3: Bar graph depicting the responses collected for the question of frequency of visiting a dentist where X axis represents the options given and Y axis represents the number responses for which 2.8% stated to visit 6 months once, 30% agreed to visit 3 months once, 54.4% visit once in a year and 12% of having never visited.

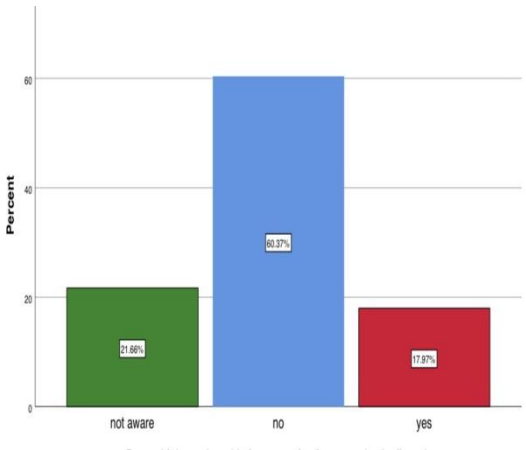

Fig.4: Bar graph depicting the responses collected for the question whether they think mouthwash helps in preventing bad breath where X axis represents the options given and Y axis represents the number responses for which 60.4% stated No, 18% stated yes and 21.4% were not aware.

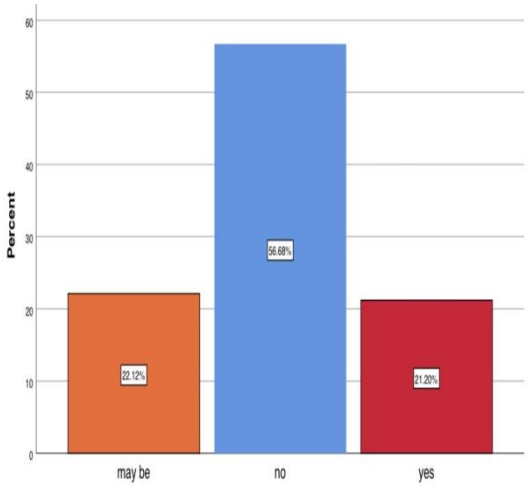

Fig.5: Bar graph depicting the responses collected for the question whether they had any experience of having tooth-ache in childhood where X axis represents the options given and Y axis represents the number responses for which 60.4% stated No, 18% stated Yes and 21.% stated maybe.

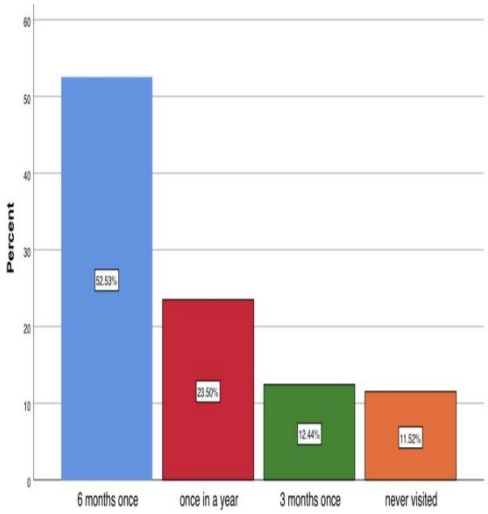

Fig.6: Bar graph depicting the responses collected for the frequency of undergoing teeth cleaning where X axis represents the options given and Y axis represents the number responses for which students respond 23.5% once in a year, 11.5% stated never visiting, 12.4% visited 3 months once and got their teeth cleaned and 52.5% visited 6 months once.

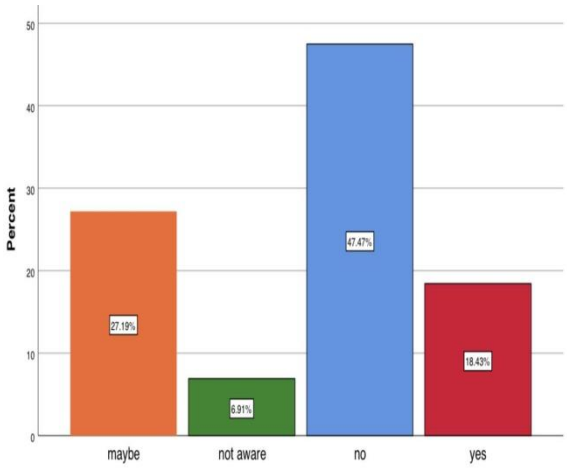

Fig.7: Bar graph depicting the responses collected for the question if they are aware of any of their family members had teeth cleaning undertaken where X axis represents the options given and Y axis represents the number responses for which 27.2% stated maybe, 6.9% were not aware, 47.5% stated no and 18.4% stated yes.

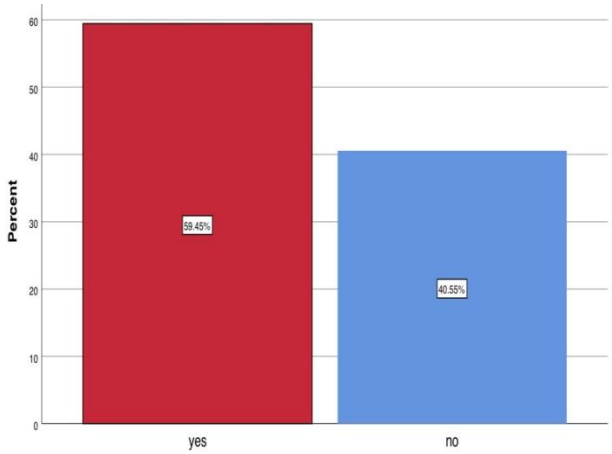

Fig.8: Bar graph depicting the responses collected to the question if they had prior experience of having worn any braces (or) retainer in childhood where X axis represents the options given and Y axis represents the number responses for which 59.4% stated no and 40.6% stated yes.

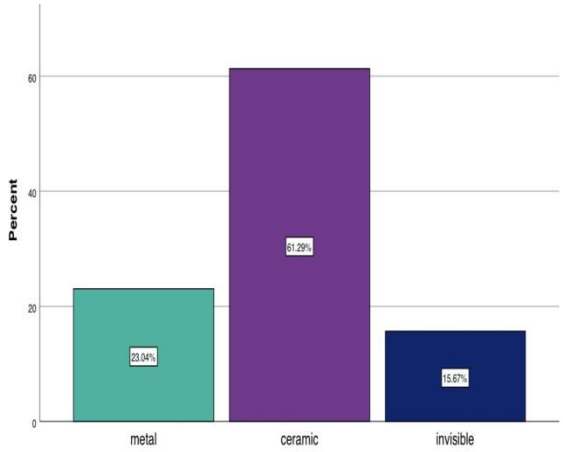

Fig.9: Bar graph depicting the responses to the question to what types of braces are they aware about where X axis represents the options given and Y axis represents the number responses to which 23% states metal type of braces, 15.7% of invisible type and 61.3% stated to ceramic type of braces.

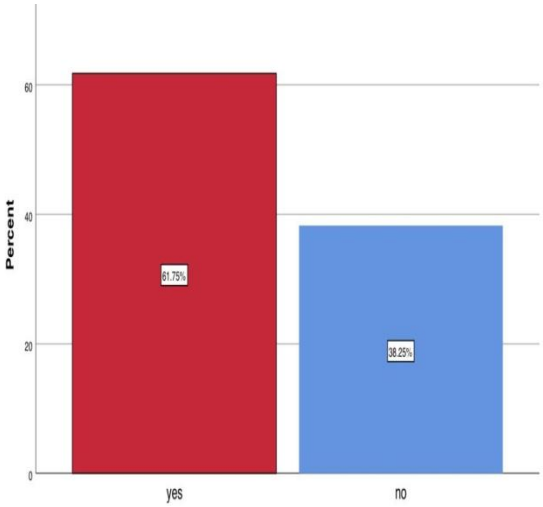

Fig.10: Bar graph depicting the responses collected for the question of visiting a dentist to get their tooth filled where X axis represents the options given and Y axis represents the number responses for which 61.8% stated no and 38.2% stated yes

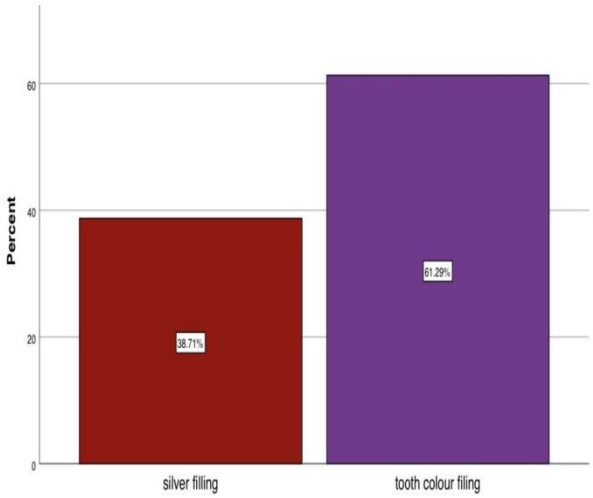

Fig.11: Bar graph depicting the responses collected for which type of tooth filling would they prefer where X axis represents the options given and Y axis represents the number responses and 38.7% preferred silver filling and 61.3% preferred tooth colour filling.

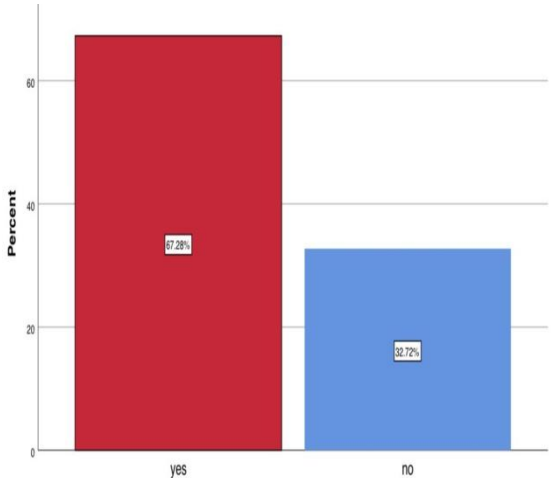

Fig.12: Bar graph depicting the responses collected for the question whether they had any prior experience of having undergone root canal treatment where X axis represents the options given and Y axis represents the number responses for which 32.7% stated yes and 67.3% stated no.

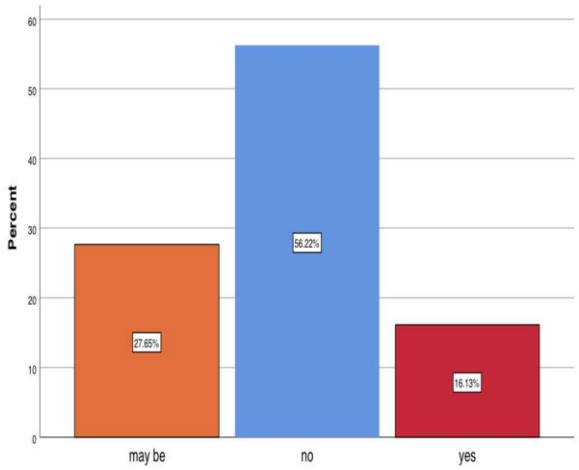

Fig.13: Bar graph depicting the responses collected for the question whether they find root canal treatment to be painful where X axis represents the options given and Y axis represents the number responses for which 56.2% stated no,16.1% stated yes and 27.6% stated maybe.

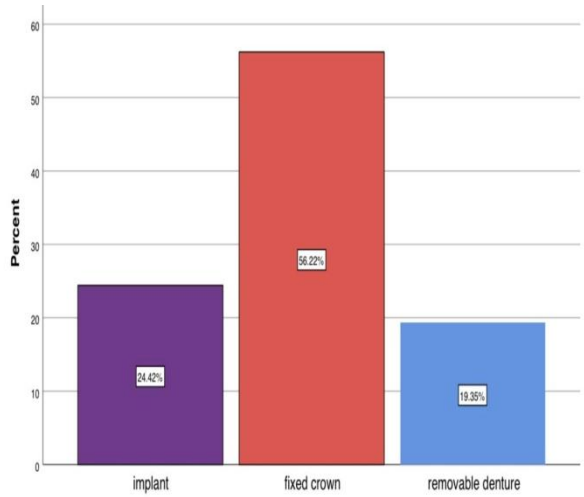

Fig.14: Bar graph depicting the responses collected from the student to the question asking about to what type of dental treatment are they aware of where X axis represents the options given and Y axis represents the number responses for which 24.4% stated implant, 56.2% stated fixed crown and 19.4% on removable denture type.

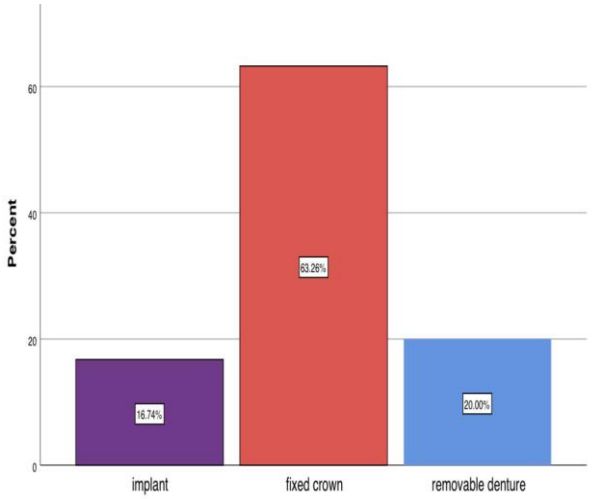

Fig.15: Bar graph depicting the responses collected to the question as in which type of dental treatment they find most effective treatment for a missing tooth where X axis represents the options given and Y axis represents the number responses to which 16.7% stated implant, 20% stated removable denture and 63.3% stated fixed crown.

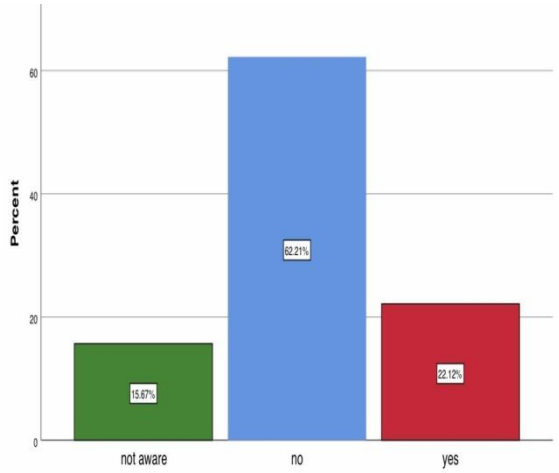

Fig.16: Bar graph depicting the responses collected for the question whether they think smoking might affect dental treatment success where X axis represents the options given and Y axis represents the number responses to which 15.7% were not aware, 22.1% stated yes and 62.2% stated no.

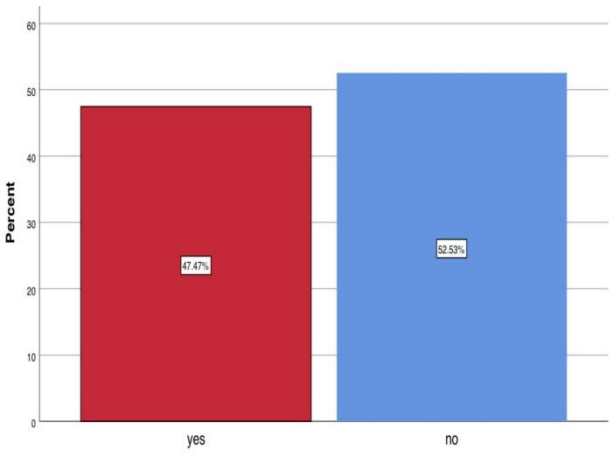

Fig.17: Bar graph depicting the results collected for the question to are they aware of wisdom tooth extraction where X axis represents the options given and Y axis represents the number responses to which 47.5% stated no and 52.2% stated yes.

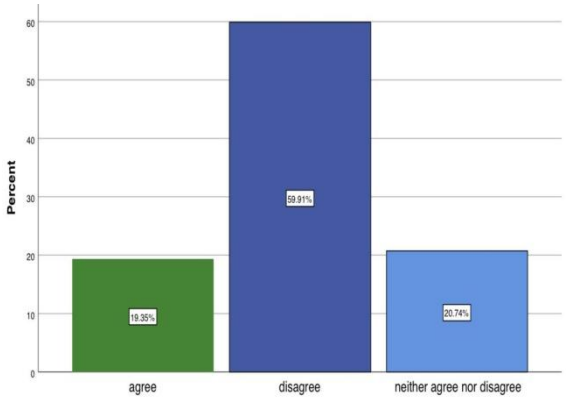

Fig.18: Bar graph depicting the responses collected for the question whether they think diabetes mellitus has any effect on the success of dental treatment where X axis represents the options given and Y axis represents the number responses for which 19.4% agree, 59.9% disagree and 20.7% neither agree nor disagree.

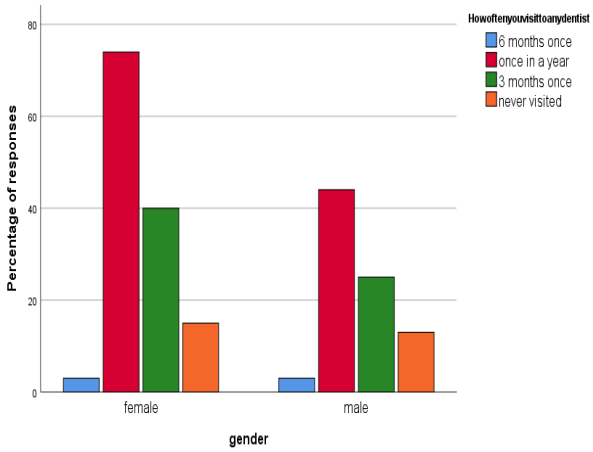

Fig.19: Bar graph depicting the association between the gender of patients and the frequency of getting their teeth cleaned. X Axis represents the gender and Y axis represents the frequency of patients visiting for teeth cleaning procedures over time.Blue colour denotes 6 months once, red colour denotes once in a year, green colour denotes 3 months once and orange colour denotes never visited. This graph shows that both males and females in the study population prefer to undergo scaling once in a year. Pearson Chi-Square Value: 29.284; p value: 0.001(<0.05) hence significant.

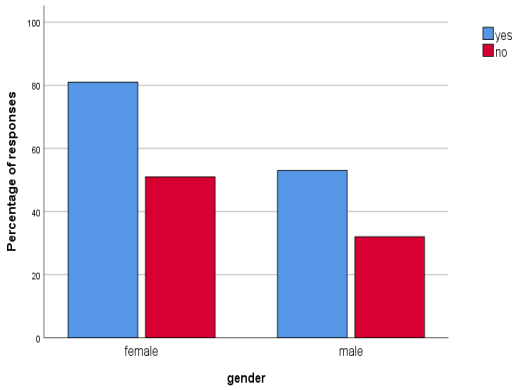

Fig.20: Bar graph depicting the association between the gender of a patient and the frequency of getting their teeth restored/filled. X Axis represents the gender responses collected and Y axis represents the number of patients visiting for getting their teeth filled over time. Blue colour denotes No and red colour denotes Yes. This graph shows that females in the study population have undergone more restoration of teeth than males. Pearson Chi-Square Value - 1.804; p value:0.614 (> 0.05) hence not significant.

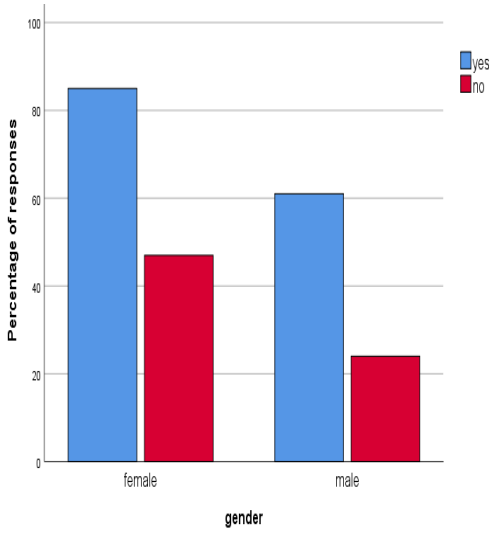

Fig.21: Bar graph depicting the association between the gender of patient and the frequency of getting their teeth root canal treated. X Axis represents the gender responses and Y axis represents the number of patients visiting for getting their teeth treated by root canal treatment. Blue colour denotes No and red colour denotes Yes. This graph shows that females in the study population have undergone more root canal treatment than males. Pearson Chi-Square Value: 5.883; p value: 0.117 (> 0.05) hence not significant

Oral health cannot be compromised under any circumstances. A healthy oral defines how well your body system metabolism is. Thereby taking proper care of our oral health plays a major role in studying. In order to know well about one's oral health and hygiene. A person must be well aware about various treatments prevailing for his/her health. Engineering students belong to a large population of professionals who are accordingly prone to more stress and stress is a major factor of threat in creating oral problems. This study is conducted to associate the knowledge and awareness on various dental treatments among engineering students. Various studies have been conducted to assess the knowledge and awareness in students with background health science(Gopinath, 2010; 'Study on oral periodontal pathogens distribution and risk factors in college students', 2017). Student communities all together play a major role in bringing about change in society(Ganesh and Ramamurthy, 2017). According to results shown in (graph 1) 50% of the population stated that they have never visited a dentist before, this shows the lack of importance students show against their oral cavity hygiene these students must be brought awareness on having proper oral hygiene. 55.3% reported to have accompanied a friend during a visit to a dentist as shown in (graph 2) this clearly shows that students want to be well aware about all the recent advancement that has been launched for understanding it more clearly. The results of (graph 3) show that out of the total population of students majority of about 54.4% reported that their frequency of visiting dentists is once in a year, this shows that engineering college students are not well educated about their proper oral maintaining methods and its importances. The results of (graph 4) show that 60.4% denied mouthwash to be effective against bad breath, this shows the lack of knowledge students have on oral health aids and its potential benefits for which awareness is to be brought in order to educate them. For example, chlorhexidine mouthwash can be given for gingivitis cases.(Ramamurthy and Mg, 2018). Results of (graph 5) show that 56.7 % states of not having experienced any tooth pain in childhood, this shows that dental remedies followed back in those proved to be well effect.

The results of (graph 6) show that students frequency of getting their tooth cleaned is about 52.5% monthly once, the students lack of proper guidance over poor oral health management is the result of which certain awareness programmes can be conducted in order to educate them on the need to visit dentist once in 6 months.(Graph 7) shows that 47.5% are not aware if their family member had got their teeth cleaned this shows the lack of knowledge students have over. (Graph 8) and (Graph 9) results show that 59.4% of participants reported stating to have not worn any braces or retainers, on the other had 61.3% are aware about ceramic type of retainers, this shows their awareness over the type of material present but lack of knowledge on its purpose. Similarly the results of (Graph 10) and (Graph 11) state that 61.8% of students have not had their teeth cleaned but 61.3% prefered tooth colouring filling material, again these results show that students are well aware about the materials used but lack the knowledge on its uses. (Graph 12) and (Graph 13) depicts the results of that the opinion engineering students have over the root canal treatment for which according to graph 12 results 67.3% agreed to have undergone root canal treatment, this shows their extent of awareness and results of graph 13 show that 56.2% find it not painful, this shows their extent of knowledge over treatment. (Graph 14) shows that

majority of them are aware of about various dental treatments of which 56.2% are aware about fixed crown and (Graph 15) results show that 63.3% students prefer fixed crown to be efficient treatment for a missing tooth, all together this shows the students are well aware and knowledge of about treatments and its uses. In (Graph 16) 62.2% think that smoking does not affect success of treatment, this shows the lack of awareness students have over oral health. (Graph 17) results show that 52.2 % are aware about wisdom tooth extraction, this shows that on an average basis students are aware about certain dental treatments and its purposes(Graph 18) depicts that 59.9% of the students think that diabetes mellitus does not affect the success of gum surgery or dental implant,this shows the general lack of knowledge and awareness over health and oral health related problems.

With considerations to treatment, the most common reason for seeking treatment was for getting their teeth cleaned ($p<0.05$). The other two reasons for visiting the dental office was for teeth fillings and root canal treatments. However, the associations were not significant for the reasons of tooth fillings and root canal treatments, which indicates that restorations or root canal procedures were only sought after on occasion, which is further indicative of good oral hygiene measures among the target population.

Similar results were obtained in a study conducted by Shah S et al 2017 reported that college students were widely aware of knowledge but weren't much aware about certain oral health hygiene(Shah *et al.*, 2017). Whereas in another opposing study done by Mundoor Manjunath D et al 2015 reported that engineering students were not well aware about oral health hygiene and dental treatments(Dayakar *et al.*, 2016). Our institution is passionate about high quality evidence based research and has excelled in various fields ((Pc, Marimuthu and Devadoss, 2018; Ramesh *et al.*, 2018; Vijayashree Priyadharsini, Smiline Girija and Paramasivam, 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai *et al.*, 2019; Sridharan *et al.*, 2019; Vijayashree Priyadharsini, 2019; Chandrasekar *et al.*, 2020; Mathew *et al.*, 2020; R *et al.*, 2020; Samuel, 2021)

The current study and results shown by the graph clearly depicts that engineering students are widely aware and are quite knowledgeable about dental treatments and its purposes in the field of dentistry but lack certain awareness over maintaining proper oral health and aids and its benefits in health.

CONCLUSION

The study concludes that engineering students are aware about dental treatment and its beneficial effects. The future scope emphasizes on the need for creating proper oral health management techniques, as in a developing country maintaining overall good health is a mandatory factor in facilitating overall health and well-being. Awareness programmes should be conducted in order to spread knowledge on various types of dental treatments to improve the awareness of patients seeking care.

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