How to Cite:
Devi, R. S., Deepak, S., & Sandeep, A. H. (2022). A survey on the perception of fear among the dental students while performing root canal treatment. *International Journal of Health Sciences*, *6*(S1), 4939–4957. https://doi.org/10.53730/ijhs.v6nS1.5959

A survey on the perception of fear among the dental students while performing root canal treatment

R. Shruthi Devi
Graduate, Saveetha Dental college and hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai-600077, Tamilnadu, India.
Email: 151901084.sdc@saveetha.com

Dr. Deepak S
Senior lecturer, Department of Dental Armamentarium, Saveetha Dental College and Hospitals, and Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai-77, Tamilnadu, India.
Email: deepaks.sdc@saveetha.com

Dr Adimulapu Hima Sandeep
Senior lecturer, Department of Conservative Dentistry and Endodontics, Saveetha Dental College, Saveetha Institute of Medical and Technical Sciences (SIMATS), Chennai, Tamilnadu, India.
Email: himas.sdc@saveetha.com

***Abstract*---**Introduction: Root canal treatment is considered a procedure in endodontics that requires more focus and precision.It is a type of endodontic treatment that is mainly used to repair and save a badly injured or infected tooth. Most dental students feel that they are not prepared well enough to carry out the treatment while practising due to the presence of levels of difficulty of the root canal.Due to the gradual increase in the life expectancy among population and desire of individuals in preserving their natural teeth, an increasing demand for these endodontic treatments and are bound to increase in the years ahead. Aim: Gather information from students regarding their perception of fear of performing RCT, how they self-evaluate their confidence level while performing in patients and difficulties faced by them. Materials and Methods: A questionnaire based survey was conducted to 100 dental students from pre-clinical second years to interns of saveetha dental college.The survey was conducted online and consisted of 15 questions based on the perception of fear among the students while performing RCT in patients after which the survey was summarised and analysed statistically using SPSS version 23.0. Results: The results above

International Journal of Health Sciences ISSN 2550-6978 E-ISSN 2550-696X © 2022.
***Corresponding author**: Deepak, S.; Email: deepaks.sdc@saveetha.com*
Manuscript submitted: 27 Feb 2022, Manuscript revised: 18 March 2022, Accepted for publication: 09 April 2022

shows that 69% of the participants were female, 36% were mainly 3rd years, 54% found it difficult to take periapical radiographs, 36% rated their difficulty on a scale ranging from 4-6 mainly, 64% found it difficult to inject LA, 52% found it difficult in opening the access cavity, 36% considered gouging to be the most common error during access preparation, 66% considered difficulty in cleaning and shaping the canal, 28% found ledging as the common error during cleaning and shaping of root canal, 69% considered root canal obturation to be difficult and 54% found overfilling as the common error during root canal obturation. Conclusion: The present study shows that the students fear doing at least any one procedure of RCT. Hence, care must be taken in reducing the fear in students so that they can perform the treatment efficiently in the future.

***Keywords*---**Anxiety, Innovative technique, RCT, Students.

Introduction

Endodontic treatment that is mainly involved in treating the necrotic pulp is considered the most stressful, difficult discipline for dental students, leading to lack of self confidence among them(1). RCT is a type of endodontic treatment that is mainly used to repair and save a badly injured or infected tooth. The steps involved in it are cleaning, disinfecting, filling and sealing it. The causes of RCT can either be due to cracked teeth, deep cavity, trauma or repeated dental treatment to a particular tooth.(2)The pulp is considered a soft tissue that contains blood vessels, nerves and connective tissue extending from crown to tip of the root. So when injured, it dies as it cannot repair itself. Dentistry is considered a branch of science that requires a lot of effort, encouragement and exposure to clinics. Various factors like competition, frequent exams, comparison among peers, relationship between teachers, application of theoretical knowledge while working in a clinic, all play a major role in the development of students mentally(3,4).

Dentistry programs aim to educate dental professionals to overcome their lack of self confidence, apply the knowledge obtained theoretically in clinics and to enable them to make better judgements in all stages of the endodontic process. Most dental students feel that they are not prepared well enough to carry out the treatment while practising due to the presence of anatomical variability and levels of difficulty of the root canals(5). Students belonging to the endodontic department must be able to work in all health care levels. Students' perception of their experience is considered as an important measure for producing success in the field of dental education. Many feel that they have inadequate knowledge on molar RCT. Hence, it is essential to know how the students feel while performing RCT and the difficulties faced by them and thereby identifying and solving the problem if any for the success of the student in the field of endodontics(6).

Due to the gradual increase in the life expectancy among the population and the desire of individuals in preserving their natural teeth, there has been an increasing demand for these endodontic treatments and are bound to increase in

the years ahead. This reality pushes the dental students to be satisfactorily equipped with both knowledge as well as experience in endodontic procedures before starting to work independently in the clinics. Upon graduation, The students must be able to make a sound endodontic diagnosis and thereby implement a reasonable treatment plan(7).There is little information related to the way students perceive the endodontology treatment procedures and their level of self-confidence on various aspects of endodontic treatment in relation to their future practice. Our team has extensive knowledge and research experience that has translate into high quality publications(8–17),(18–21),(22–26),(27)

Hence, the present study aims in gathering information in the form of survey about the general opinion of RCT treatment a, type of endodontic treatment to the students of Saveetha dental college, chennai Tamilnadu regarding their perception of fear of performing RCT how they self-evaluate their confidence level while performing in patients and the difficulties faced by them if present.

Materials and Methods

The study was done during the academic year in March 2020 among the students of Saveetha Dental College and Hospitals, Chennai, Tamil Nadu ranging from pre - clinical second year to interns.

Study Sample Size

The descriptive cross-sectional survey study was based among a sample size of total 100 adult male and female dental students who were working in the dental clinics at Saveetha Dental College and Hospital Chennai, Tamil Nadu.Random sampling method was done to minimise the sampling bias

Inclusion and Exclusion Criteria

Students from second year to interns who were willing to participate were included in this study.Students who were not willing to participate in the study and first year students were excluded.

Questionnaire

The questionnaire was made to a specific group but targeted to all the students regardless of their year of study in general inorder to assess their perception of fear while performing RCT in patients. A validated self prepared questionnaire containing 15 close ended questions was distributed online among all the students participating in the study. Each patient took a minute or two to complete the survey. The data extracted were then tabulated and analysed statistically and results were obtained using SPSS software version 23.0.Chi square test was done for comparing different values with a significance level of $p = 0.05$ and a detailed conclusion was made.

Results and Discussion

Table 1
The table shows the questionnaire the participants attended and their response to the questions (in percentages)

SNo.	Questions	Options	Responses
1	Gender of participants	Male Female	69% 31%
2	Age group of participants	2nd year 3rd year 4th year Interns	36% 32% 20% 12%
3	Is it difficult to take periapical radiographs?	Yes No	46% 54%
4	Rate your difficulty in performing RCT from 1-10	0-3 4-6 7-9 10	14% 36% 37% 13%
5	Do you find it difficult to inject LA?	Yes No	64% 36%
6	Is there any difficulty in opening the access cavity?	Yes No	52% 48%
7	What is the most common error in access preparation?	Gouging Identifying root canals Perforation	36% 30% 34%
8	Is there any difficulty in cleaning and shaping the canal?	Yes No	67% 33%
9	Most common error during cleaning and shaping?	Apical perforation Broken instrument Ledge Strip perforation Transportation	20% 23% 28% 14% 15%
10	Is there any difficulty in root canal obturation?	Yes No	69% 31%
11	Most common error during root canal obturation?	Overfilling Underfilling Void	54% 24% 22%

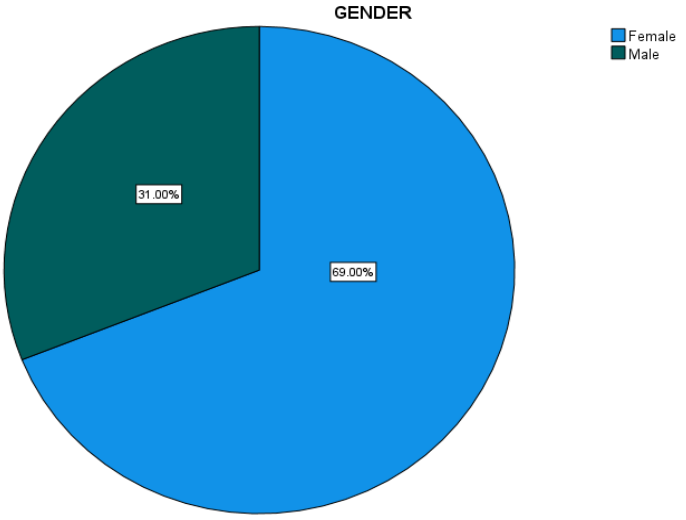

Fig 1: Pie chart showing percentage distribution of the gender of the students who took part in the survey. 69% of participants were female (blue) and 31% of the participants were males (green).

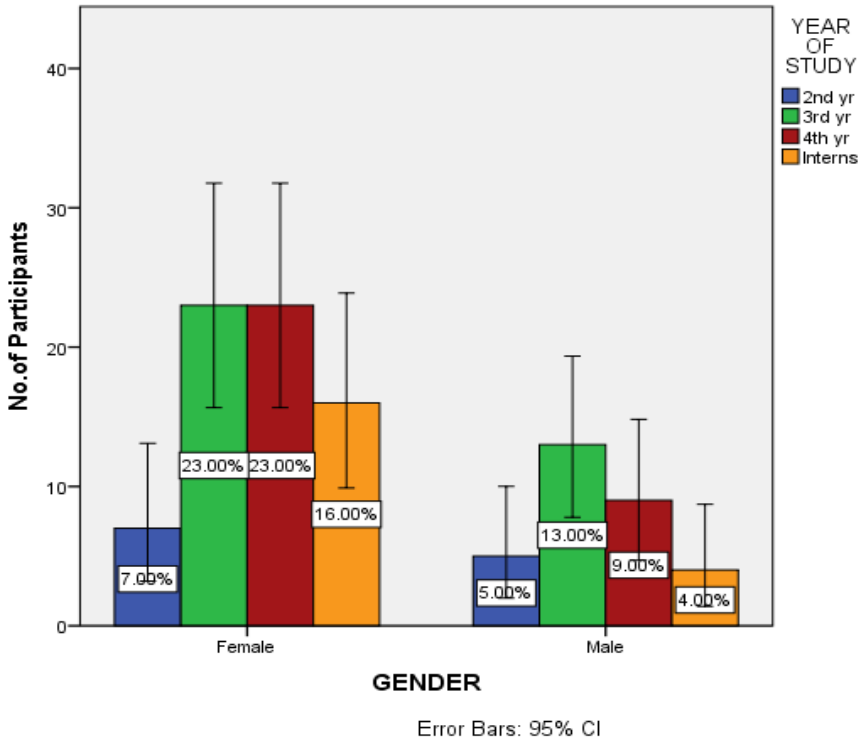

Fig 2: The bar graph depicts the association between gender (X axis) and responses to the year of the study participating in the study (Y axis). Blue denotes participants who are studying in the second year and green denotes participants who are studying in the third year, red denotes the participants who are studying in fourth year and orange denotes the participants who are interns. Females in

general have taken the majority part in the study and showed that most of them were from second and third years. P value = 0.5 > 0.05 (statistically not significant)

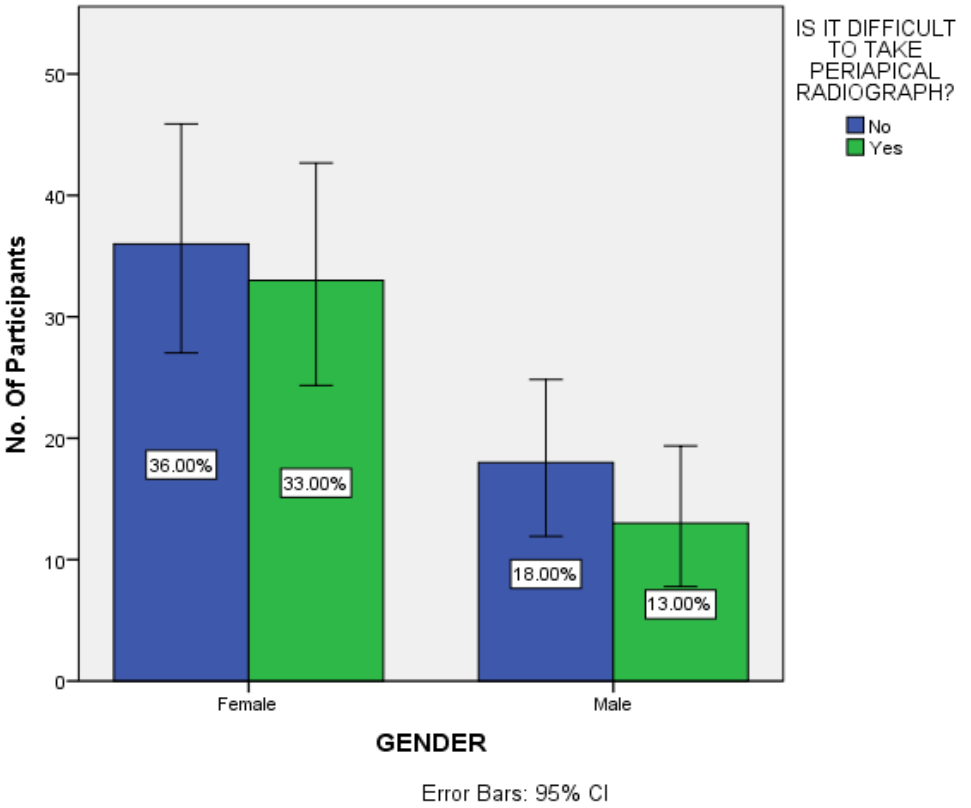

Fig 3: The bar graph gives the association between gender (X axis) and responses to the questions in the study (Y axis). Blue denotes participants who are answered no to the question asked and green denotes participants who answered yes to the question asked. Females are more aware that the periapical radiographs are not difficult to take in the study. P value = 0.58 > 0.05 (Statistically not significant).

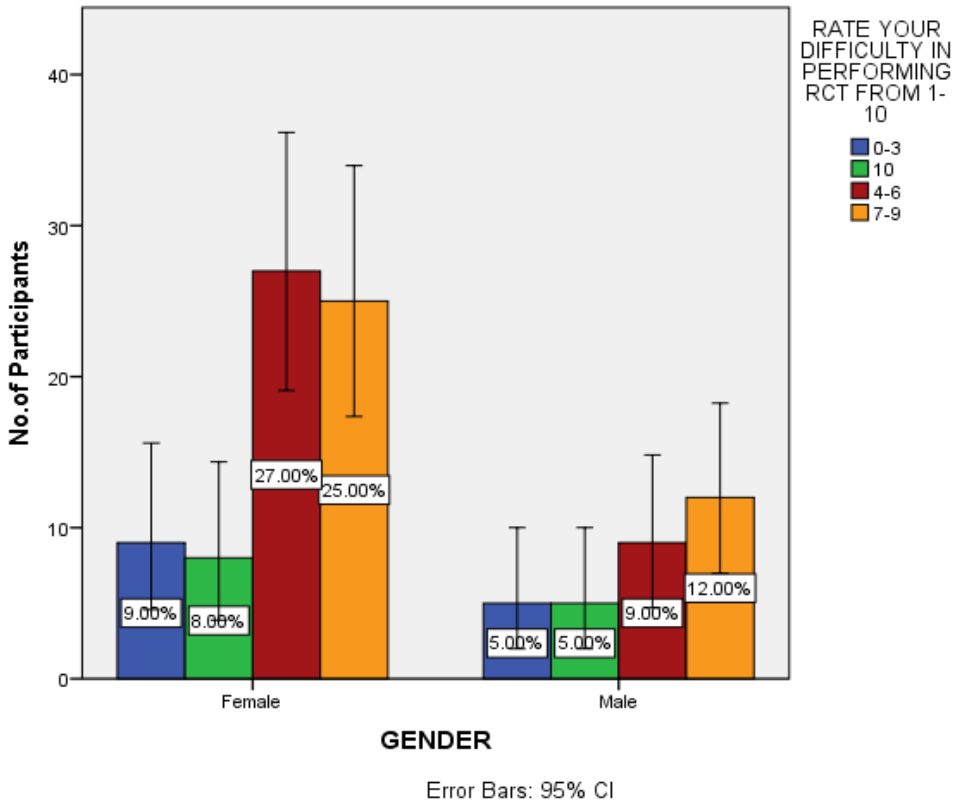

Fig 4: The bar graph depicts the association between gender (X axis) and responses to the questions in the study (Y axis).Blue denotes 0 -3, green denotes 10, red denotes 4-6 and orange denotes 7-9. Majority of the females have rated the difficulty of performing the RCT to be from 4-6 by 27 female participants who took part in the study. P value = 0.7 > 0.05 (Statistically not significant).

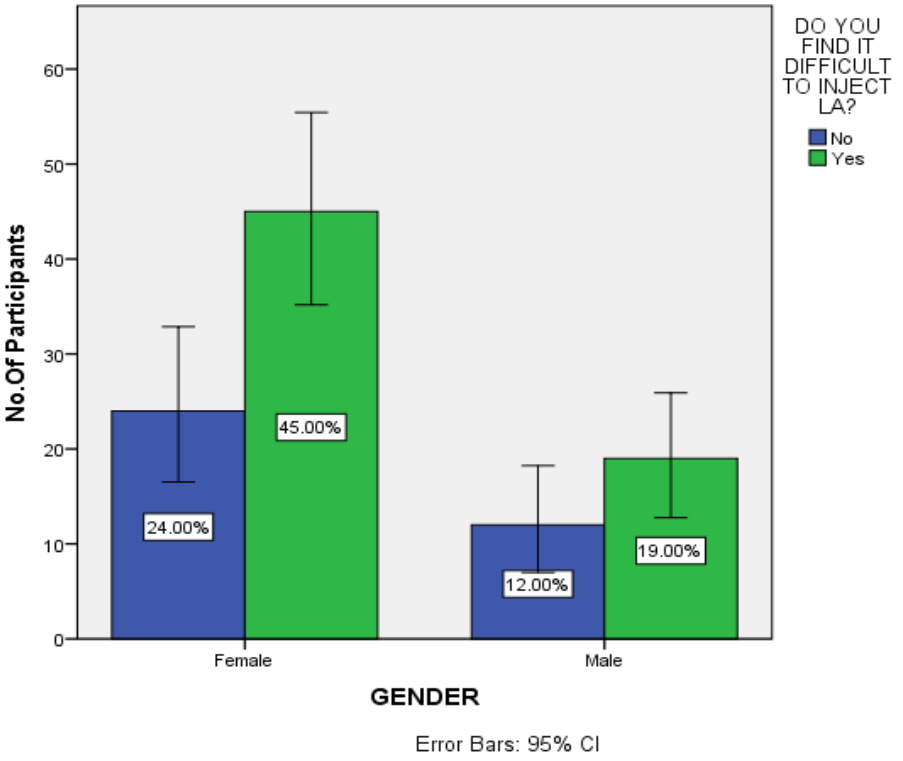

Fig 5: The bar graph gives the association between gender (X axis) and responses to the questions in the study (Y axis).Blue denotes no and green denotes yes. Majority of the females have the difficulty to inject local anaesthesia by 45 female participants than males (19) who took part in the study. P value = 0.02< 0.05 (Statistically significant).

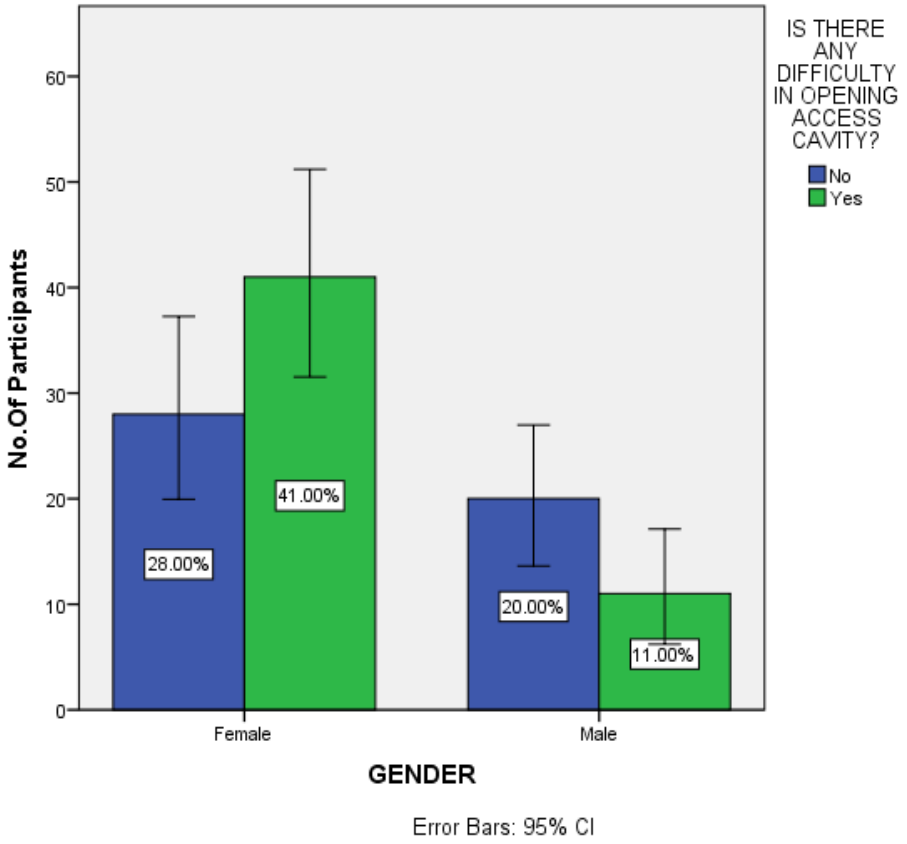

Fig 6: The bar graph gives the association between gender (X axis) and responses to the questions in the study (Y axis).Blue denotes no and green denotes yes. Majority of the females had difficulty in opening the access cavity by 41 female participants than males (11) who took part in the study. P value = 0.04 < 0.05 (Statistically significant).

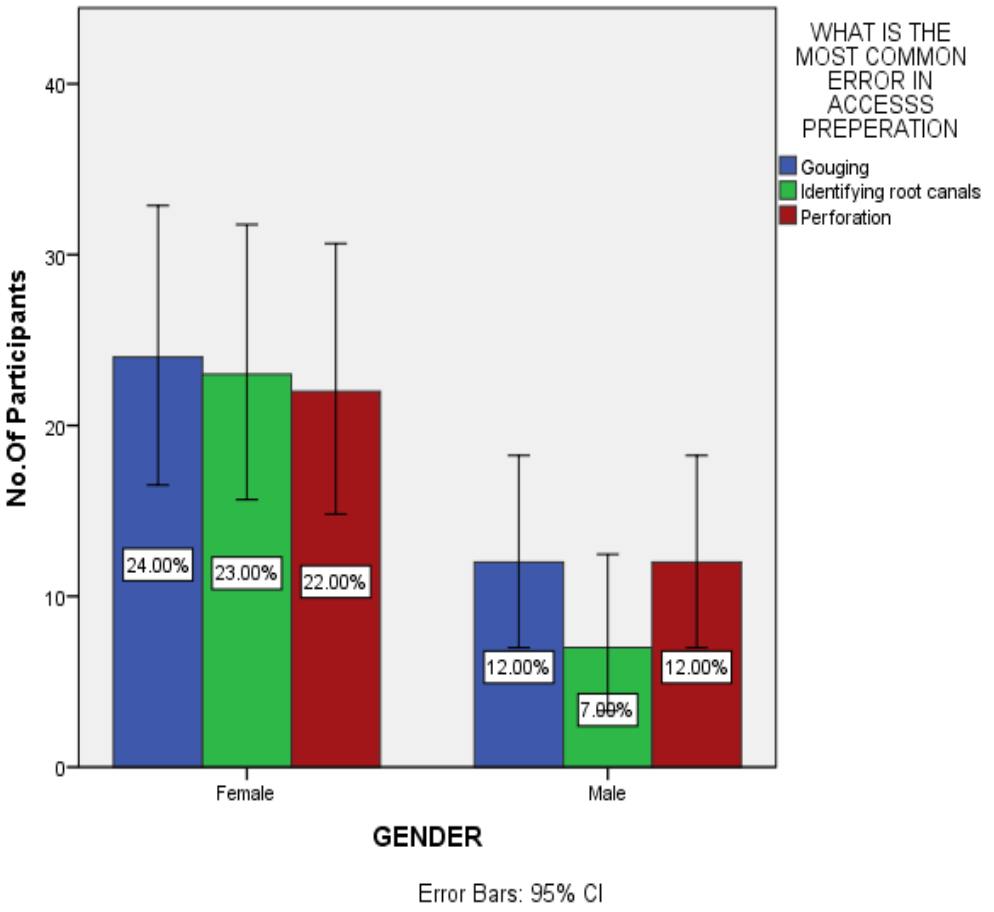

Fig 7: The bar graph gives the association between gender (X axis) and responses to the questions in the study (Y axis). The blue colour denotes gouging, green denotes identifying root canals and red represents perforation. Majority of the females found that gouging (24) was the most common error in access preparation, followed by identification of root canals (23) and perforation (22). P value = 0.54>0.05 (Statistically not significant)

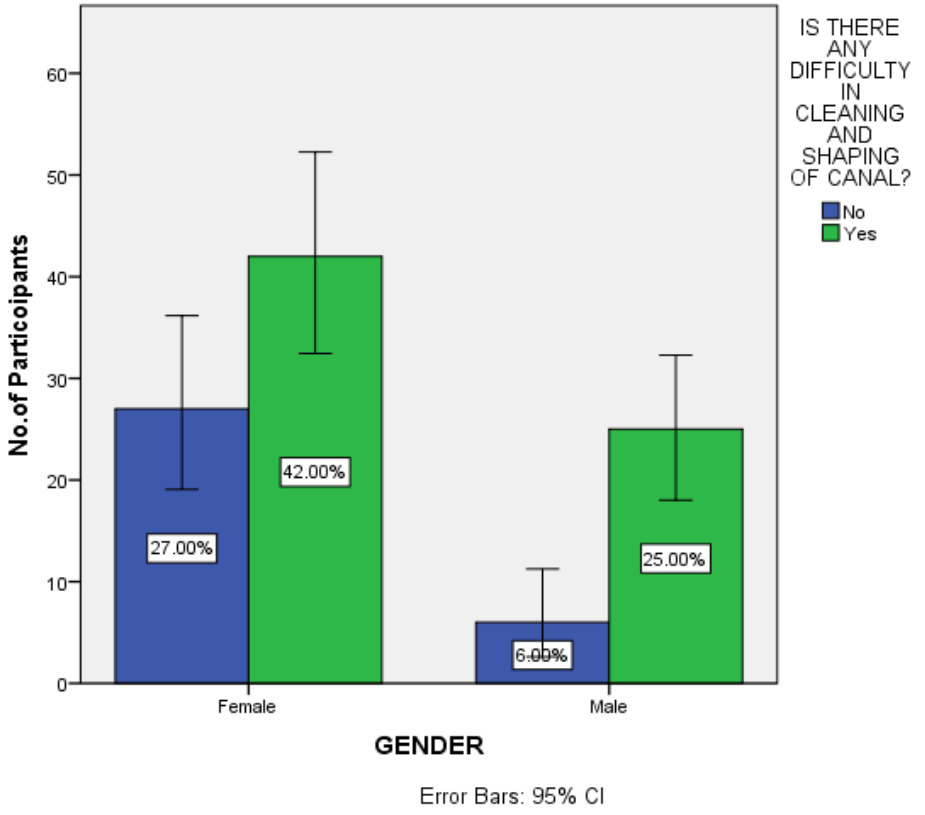

Fig 8: The bar graph gives the association between gender (X axis) and responses to the difficulty faced by students in cleaning and shaping the canal (Y axis). Blue denotes participants who did not find it difficult and green denotes participants who found it difficult. Females in general did not find difficulty in cleaning and shaping the canal. P value= 0.05 (Statistically significant).

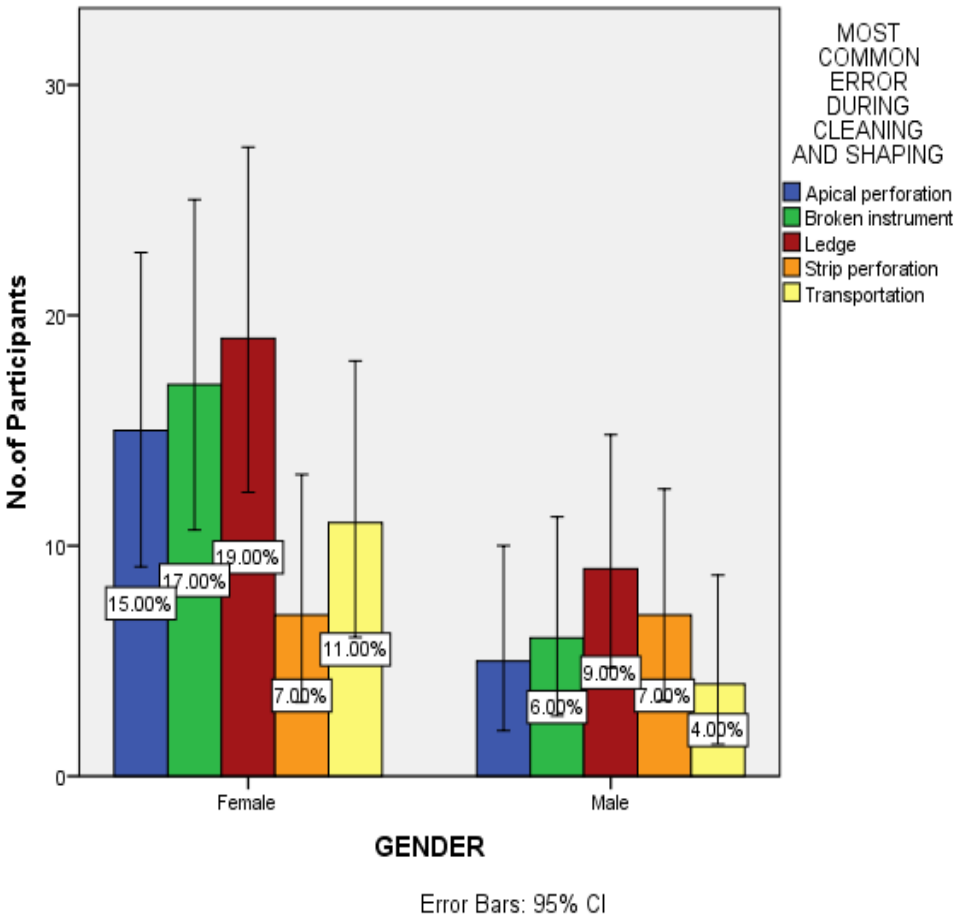

Fig 9A: The bar graph gives the association between gender (X axis) and responses to the questions in the study (Y axis). Blue denotes apical perforation, green denotes broken instrument, red denotes ledge and orange represents strip perforation. Majority of the females found that broken instrument (17), ledge (19) were the most common errors in access preparation, followed by apical perforation (11) and strip perforation (7). P value = 0.54 > 0.05 (Statistically not significant).

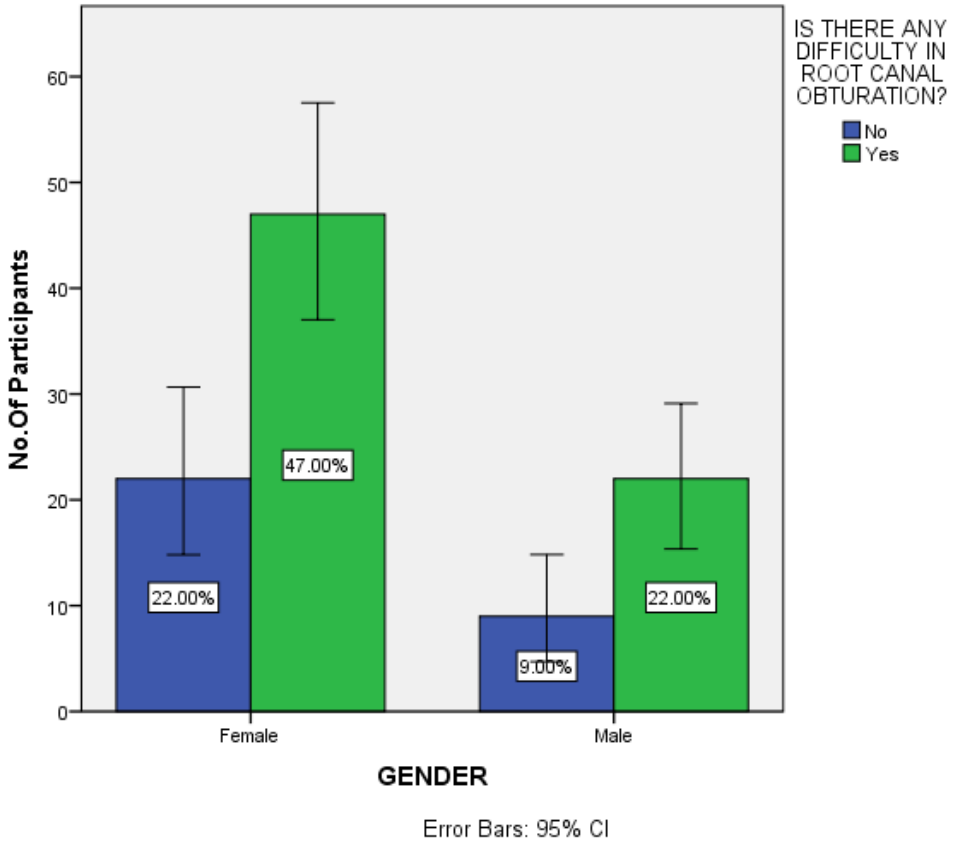

Fig 10: The bar graph gives the association between gender (X axis) and responses to the difficulty in root canal obturation (Y axis). Blue denotes participants who did not find it difficult and green denotes participants who found it difficult.Females generally found difficulty in root canal obturation. P value = 0.77 > 0.05 (Statistically not significant)

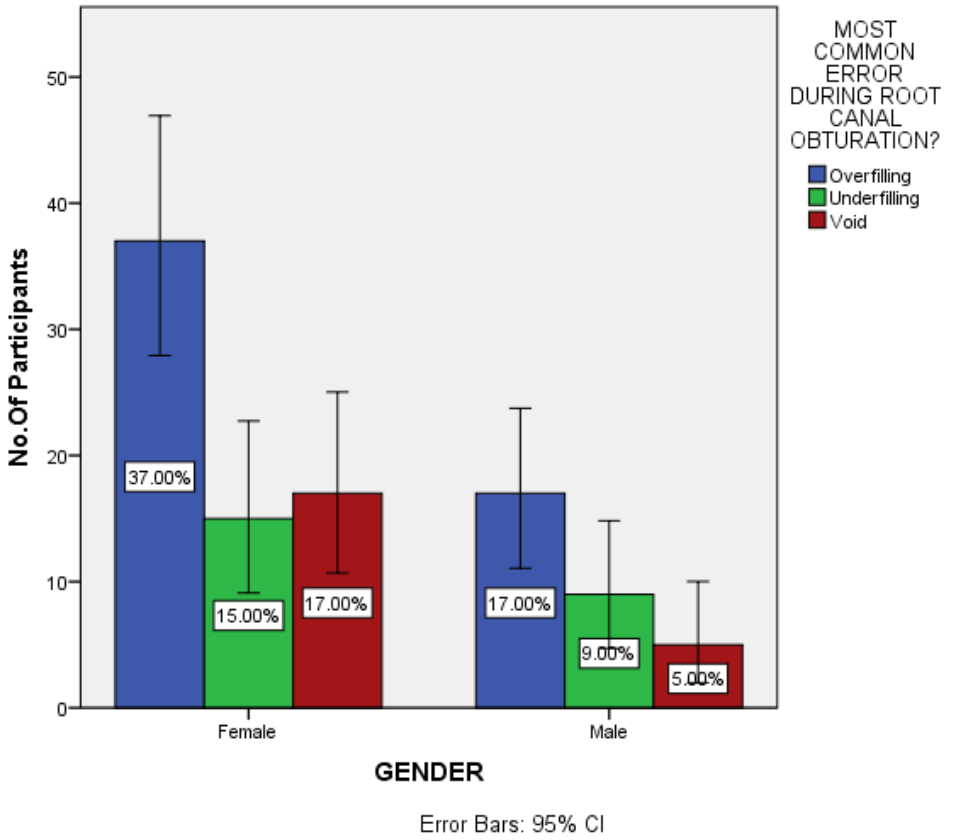

Fig 11A: The bar graph gives the association between gender (X axis) and responses to the error during root canal obturation (Y axis). Blue denotes overfilling, green denotes underfilling and red denotes void. Females (37) generally found overfilling as the common error during root canal obturation followed by voids (17) and underfilling(15). P value = 0.55 > 0.05 (Statistically not significant)

Discussion

The results above shows that 69% of the participants were female, 36% were mainly 3rd years, 54% found it difficult to take periapical radiographs, 36% rated their difficulty on a scale ranging from 4-6 mainly, 64% found it difficult to inject LA, 52% found it difficult in opening the access cavity, 36% considered gouging to be the most common error during access preparation, 66% considered difficulty in cleaning and shaping the canal, 28% found ledging as the common error during cleaning and shaping of root canal, 69% considered root canal obturation to be difficult and 54% found overfilling as the common error during root canal obturation.

In table 1 and fig 1 (pie chart) shows that 69% of the participants were females and the rest 31% were males indicating that females were more afraid to perform rct in patients than males which was similar to may studies thereby showing more trend towards female than male in the dental colleges(28)and mostly

belonged to 3rd years followed by interns as shown in the table but Fig 2 showed no significant association was found between gender and year of study as the p value was 0.5> 0.05. The table shows that 54% did not consider it difficult to take periapical radiographs but it contradicted a study done by Vaishnavi et al;2020 where 50.9% considered it difficult to take periapical radiographs(29)) but fig 3 showed no significant association was found between gender and difficulty in taking periapical radiographs as the p value was 0.5> 0.05. In the table the most common range of student's fear regarding RCT treatment in patients was mainly between 7-9 but Fig 4a showed no significance between gender and fear of performing rct a p value =0.7>0.05.Many studies have shown the common fear ranged from 3 to 8 which was found similar to our present study.

Fig 5 showed that 64% found it difficult to inject LA which contradicted a previous study where 79.2% of the students didn't find any difficulty and fig 5a showed significance between students' gender and their difficulty in giving LA. Fig 6 showed that 52% found it difficult to open the access cavity which was found similar to a study where the student found it difficult to identify root canal which was found 30% in our study as gouging is considered important.Another problem which the student found to be challenging was the root canal obturation (30)which was similar to our study where Fig 10 showed that 69% of the people found it difficult and stated that the main cause was due to overfill or underfill obturation which was also similar to our study as seen in Fig 11 where 54% of the students has stated overfilling and 24% of the students has stated underfilling as a major error caused during the root canal obturation.

Root canal treatment is considered a tedious procedure and even a single mistake or complication can lead to a negative prognosis. Many studies have reported that the students at some point of time felt stressed regarding their dental education. Self assessment of the students helps themselves to make a realistic evaluation so as to attain efficacy(31).Murray et al stated that one of the limits to developing confidence among the students in performing clinical practices were insufficient clinical exposures within the given undergraduate curriculum(32) .On analysing the results in the present study indicated that generally the regular steps of endodontic treatment did not pose fear but rather the more sophisticated aspects and indications that were related with endodontic treatment lead to the lower self confidence and fear among the students. The limitations of the study was small sample size and the homogenous as it was taken only among the students of saveetha dental college. So, it can be seen that the endodontic teaching staff has to be increased in order to give more attention to the students who are working in the clinics.

Conclusion

Defining and identifying the problems of undergraduate students and helping in detailing the teaching plan during the classes can lead to an increase in the rate of both success and self confidence among the students as the present study shows that the students fear in doing at least any one procedure of RCT. Hence, care must be taken in reducing the fear in students so that they can perform the treatment efficiently in the future.

Author contributions
Shruthi Devi R: Literature search, data collection, analysis, manuscript drafting.
Dr.Deepak Selvam: Data verification, manuscript drafting, preparation of manuscript.

Acknowledgement
Authors thank Dr. Deepak Nallaswamy, director,Saveetha dental college and hospitals,Saveetha institute of medical and technical sciences(SIMATS), for providing facilities and ideas to carry out this work.

Conflict of Interest
The author declares that there was no conflict of interest in the present study.

Source of Funding
- Saveetha Dental college and Hospitals
- Saveetha Institute of Medical and Technical sciences
- Modugula infra technologies

References

1. John NJ. Difficulties Faced by Dental Students While Performing Root Canal Treatment [Internet]. 2020. Available from: https://www.ijsr.net/get_abstract.php?paper_id=SR20702175127
2. Saatchi a. G et al. Technical Quality of Root Canal Treatment Performed by Undergraduate Clinical Students of Isfahan Dental School Masoud. Iranian Endodontic Journal [Internet]. 2018;13(1):88–93. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5800448/
3. Soltani P. Endodontics for undergraduate dental students: How to enhance their abilities? Journal of Education and Ethics in Dentistry [Internet]. 2016 Mar 1 [cited 2021 Mar 16];5(1). Available from: https://www.researchgate.net/publication/296678899_Endodontics_for_undergraduate_dental_students_How_to_enhance_their_abilities
4. Qualtrough AJ, Whitworth JM, Dummer PM. Preclinical endodontology: an international comparison. Int Endod J [Internet]. 1999 Sep;32(5):406–14. Available from: http://dx.doi.org/10.1046/j.1365-2591.1999.00253.x
5. Rolland S, Hobson R, Hanwell S. Clinical competency exercises: some student perceptions. Eur J Dent Educ [Internet]. 2007 Aug;11(3):184–91. Available from: http://dx.doi.org/10.1111/j.1600-0579.2007.00453.x
6. Seijo MOS, Ferreira EF, Ribeiro Sobrinho AP, Paiva SM, Martins RC. Learning experience in endodontics: Brazilian students' perceptions. J Dent Educ [Internet]. 2013 May;77(5):648–55. Available from: https://www.ncbi.nlm.nih.gov/pubmed/23658412
7. Tanalp J, Güven EP, Oktay I. Evaluation of dental students' perception and self-confidence levels regarding endodontic treatment. Eur J Dent [Internet]. 2013 Apr;7(2):218–24. Available from: http://dx.doi.org/10.4103/1305-7456.110189
8. Muthukrishnan L. Imminent antimicrobial bioink deploying cellulose, alginate, EPS and synthetic polymers for 3D bioprinting of tissue constructs. Carbohydr Polym [Internet]. 2021 May 15;260:117774. Available from: http://dx.doi.org/10.1016/j.carbpol.2021.117774

9. PradeepKumar AR, Shemesh H, Nivedhitha MS, Hashir MMJ, Arockiam S, Uma Maheswari TN, et al. Diagnosis of Vertical Root Fractures by Cone-beam Computed Tomography in Root-filled Teeth with Confirmation by Direct Visualization: A Systematic Review and Meta-Analysis. J Endod [Internet]. 2021 Aug;47(8):1198–214. Available from: http://dx.doi.org/10.1016/j.joen.2021.04.022
10. Chakraborty T, Jamal RF, Battineni G, Teja KV, Marto CM, Spagnuolo G. A Review of Prolonged Post-COVID-19 Symptoms and Their Implications on Dental Management. Int J Environ Res Public Health [Internet]. 2021 May 12;18(10). Available from: http://dx.doi.org/10.3390/ijerph18105131
11. Muthukrishnan L. Nanotechnology for cleaner leather production: a review. Environ Chem Lett [Internet]. 2021 Jun 1;19(3):2527–49. Available from: https://doi.org/10.1007/s10311-020-01172-w
12. Teja KV, Ramesh S. Is a filled lateral canal - A sign of superiority? J Dent Sci [Internet]. 2020 Dec;15(4):562–3. Available from: http://dx.doi.org/10.1016/j.jds.2020.02.009
13. Narendran K, Jayalakshmi, Ms N, Sarvanan A, Ganesan S A, Sukumar E. Synthesis, characterization, free radical scavenging and cytotoxic activities of phenylvilangin, a substituted dimer of embelin. ijps [Internet]. 2020;82(5). Available from: https://www.ijpsonline.com/articles/synthesis-characterization-free-radical-scavenging-and-cytotoxic-activities-of-phenylvilangin-a-substituted-dimer-of-embelin-4041.html
14. Reddy P, Krithikadatta J, Srinivasan V, Raghu S, Velumurugan N. Dental Caries Profile and Associated Risk Factors Among Adolescent School Children in an Urban South-Indian City. Oral Health Prev Dent [Internet]. 2020 Apr 1;18(1):379–86. Available from: http://dx.doi.org/10.3290/j.ohpd.a43368
15. Sawant K, Pawar AM, Banga KS, Machado R, Karobari MI, Marya A, et al. Dentinal Microcracks after Root Canal Instrumentation Using Instruments Manufactured with Different NiTi Alloys and the SAF System: A Systematic Review. NATO Adv Sci Inst Ser E Appl Sci [Internet]. 2021 May 28 [cited 2021 Aug 5];11(11):4984. Available from: https://www.mdpi.com/2076-3417/11/11/4984
16. Bhavikatti SK, Karobari MI, Zainuddin SLA, Marya A, Nadaf SJ, Sawant VJ, et al. Investigating the Antioxidant and Cytocompatibility of Mimusops elengi Linn Extract over Human Gingival Fibroblast Cells. Int J Environ Res Public Health [Internet]. 2021 Jul 4;18(13). Available from: http://dx.doi.org/10.3390/ijerph18137162
17. Karobari MI, Basheer SN, Sayed FR, Shaikh S, Agwan MAS, Marya A, et al. An In Vitro Stereomicroscopic Evaluation of Bioactivity between Neo MTA Plus, Pro Root MTA, BIODENTINE & Glass Ionomer Cement Using Dye Penetration Method. Materials [Internet]. 2021 Jun 8;14(12). Available from: http://dx.doi.org/10.3390/ma14123159
18. Rohit Singh T, Ezhilarasan D. Ethanolic Extract of Lagerstroemia Speciosa (L.) Pers., Induces Apoptosis and Cell Cycle Arrest in HepG2 Cells. Nutr Cancer [Internet]. 2020;72(1):146–56. Available from: http://dx.doi.org/10.1080/01635581.2019.1616780
19. Ezhilarasan D. MicroRNA interplay between hepatic stellate cell quiescence and activation. Eur J Pharmacol [Internet]. 2020 Oct 15;885:173507. Available from: http://dx.doi.org/10.1016/j.ejphar.2020.173507
20. Romera A, Peredpaya S, Shparyk Y, Bondarenko I, Mendonça Bariani G,

Abdalla KC, et al. Bevacizumab biosimilar BEVZ92 versus reference bevacizumab in combination with FOLFOX or FOLFIRI as first-line treatment for metastatic colorectal cancer: a multicentre, open-label, randomised controlled trial. Lancet Gastroenterol Hepatol [Internet]. 2018 Dec;3(12):845–55. Available from: http://dx.doi.org/10.1016/S2468-1253(18)30269-3

21. Raj R K, D E, S R. β-Sitosterol-assisted silver nanoparticles activates Nrf2 and triggers mitochondrial apoptosis via oxidative stress in human hepatocellular cancer cell line. J Biomed Mater Res A [Internet]. 2020 Sep;108(9):1899–908. Available from: http://dx.doi.org/10.1002/jbm.a.36953
22. Vijayashree Priyadharsini J. In silico validation of the non-antibiotic drugs acetaminophen and ibuprofen as antibacterial agents against red complex pathogens. J Periodontol [Internet]. 2019 Dec;90(12):1441–8. Available from: http://dx.doi.org/10.1002/JPER.18-0673
23. Priyadharsini JV, Vijayashree Priyadharsini J, Smiline Girija AS, Paramasivam A. In silico analysis of virulence genes in an emerging dental pathogen A. baumannii and related species [Internet]. Vol. 94, Archives of Oral Biology. 2018. p. 93–8. Available from: http://dx.doi.org/10.1016/j.archoralbio.2018.07.001
24. Uma Maheswari TN, Nivedhitha MS, Ramani P. Expression profile of salivary micro RNA-21 and 31 in oral potentially malignant disorders. Braz Oral Res [Internet]. 2020 Feb 10;34:e002. Available from: http://dx.doi.org/10.1590/1807-3107bor-2020.vol34.0002
25. Gudipaneni RK, Alam MK, Patil SR, Karobari MI. Measurement of the Maximum Occlusal Bite Force and its Relation to the Caries Spectrum of First Permanent Molars in Early Permanent Dentition. J Clin Pediatr Dent [Internet]. 2020 Dec 1;44(6):423–8. Available from: http://dx.doi.org/10.17796/1053-4625-44.6.6
26. Chaturvedula BB, Muthukrishnan A, Bhuvaraghan A, Sandler J, Thiruvenkatachari B. Dens invaginatus: a review and orthodontic implications. Br Dent J [Internet]. 2021 Mar;230(6):345–50. Available from: http://dx.doi.org/10.1038/s41415-021-2721-9
27. Kanniah P, Radhamani J, Chelliah P, Muthusamy N, Joshua Jebasingh Sathiya Balasingh E, Reeta Thangapandi J, et al. Green synthesis of multifaceted silver nanoparticles using the flower extract of Aerva lanata and evaluation of its biological and environmental applications. ChemistrySelect [Internet]. 2020 Feb 21;5(7):2322–31. Available from: https://onlinelibrary.wiley.com/doi/10.1002/slct.201903228
28. Machado-Carvalhais HP, Ramos-Jorge ML, Auad SM, Martins LHPM, Paiva SM, Pordeus IA. Occupational exposure to potentially infectious biological material in a dental teaching environment. J Dent Educ [Internet]. 2008 Oct;72(10):1201–8. Available from: http://doi.wiley.com/10.1002/j.0022-0337.2008.72.10.tb04599.x
29. Potluri DV, Chunduri DRT, Potnuru DS, Shaik DA, Kapoor DA, Alugubelli DS. A qualitative study on understanding of endodontic procedures among undergraduate students. Saudi j oral dent res [Internet]. 2020 Mar 25;05(03):180–3. Available from: https://saudijournals.com/media/articles/SJODR_53_180-183__.pdf
30. Moradi S, Gharechahi M. Radiographic quality of root canal treatment performed by 6(th) year undergraduate students in Mashhad, Iran. Dent Res

J [Internet]. 2014 May;11(3):364–9. Available from: https://www.ncbi.nlm.nih.gov/pubmed/25097647
31. SELF-REPORTED CONFIDENCE LEVELS OF DENTAL GRADUATES IN PERFORMING CLINICAL PROCEDURES [Internet]. [cited 2021 Mar 16]. Available from: https://www.thefreelibrary.com/SELF-REPORTED+CONFIDENCE+LEVELS+OF+DENTAL+GRADUATES+IN+PERFORMING...-a0442984717
32. Murray FJ, Blinkhorn AS, Bulman J. An assessment of the views held by recent graduates on their undergraduate course. Eur J Dent Educ [Internet]. 1999 Feb;3(1):3–9. Available from: http://dx.doi.org/10.1111/j.1600-0579.1999.tb00059.x