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ABSTRACT

Background: Dental caries may be a progressive, cumulative oral disease which becomes more intricate to treat with advancement . It's a serious oral illness across various countries. In India, the prevalence of cavities is 31.5-89% which indicates it is a serious public health problem posing an excellent challenge to community and dental professionals . But intervention at primary level can reduce this problem. Hence, the aim is to determine dental practitioners' perceptions of preventive measures for pediatric patients.

Materials and methods: The sample size used for the study is 105. A self structured questionnaire is being prepared and uploaded in Google forms. A questionnaire in Google forms is being circulated among the sample study population and at the end of the survey, all the data were collected and the data has been analysed by using the software IBM SPSS. Descriptive statistics were expressed by means of number, frequency, and percentage. The Chi-square test was used to find the association between variables.

Result: The present study reported that 55.34% of MDS graduates and 13% of BDS graduates suggest the use of pit and fissure sealants in your routine dental practices. The present 56% of MDS graduates and 13% of BDS graduates know about the usage of space maintainers. Chi square test was done and association was found to be statistically not significant (Chi square value is 1.41; $p > 0.05$)

Conclusion: Based on the results of the present study, it can be concluded that MDS graduates had a better perception towards the use of preventive measures for pediatric patients for the prevention of dental caries.

Keywords: Dental practitioners , pediatric patients, preventive measures; Innovative analysis

INTRODUCTION

Dental caries may be a progressive, cumulative oral disease which becomes more intricate to treat with advancement and it is a serious oral ill health across various countries. In India, the prevalence of cavities is 31.5-89% which indicates it is a serious public health problem posing an excellent challenge to community and dental professionals . But intervention at primary level can reduce this problem. . the foremost efficient method to scale back occlusal caries that has been in practice since an extended time, is pit and fissure sealants.(1).

The demand for basic care is increasing. Tooth decay adversely affects children in terms of food intake and preferences, sleep habits, and quality of life.. General dental practitioners (GDPs) who find a patient uncooperative typically refer to that patient to a pedodontist. However, the amount of pedodontists is insufficient, necessitating treatment of pediatric patients by GDPs. Unfortunately, some GDPs are unwilling to treat pediatric patients, particularly those of preschool age, and instead refer them to pedodontists.(2). Dental anxiety is defined because of the state of apprehension that happens during dental treatment. Acute and chronic pain pathways involve underlying peripherals also as central pathogenic mechanisms.

For the youngsters undergoing dental treatment, pain could also be aggravated thanks to the unexpected stimuli and should also increase thanks to stressful conditions. (3). Dental education plays a crucial role in shaping future dentists' attitudes and professional behaviours concerning the treatment of young patients. They concluded, those dentists who received proper undergraduate training were well prepared to treat both adult and child patients with special needs..(4). Several studies have reported that the utilization of loupes among dental students, dentists, and even dental hygienists has become popular in many countries around the world.

Magnification in dentistry was promoted to be used for oral surgical flaps, dental tissue grafts, surgical periodontal treatments, various steps to endodontic treatment, caries detection, and cavity.(5). Caries diagnosis

has been defined as identifying or detecting changes within the tooth structure, which are according to indicators and factors related to the disease . It's imperative to acknowledge that the diagnosis of Caries is very hooked into clinicians' skills and knowledge , among other factors. Caries risk assessment is vital for understanding the overall oral health status of a private . Several factors are often measured as indicators of oral health; these factors include bacterial count/type, salivary pH level, dietary habits, and fluoride exposure . These elements are fundamental considerations in clinical examination . (6).Children who are most fearful within the uptake of painful stimuli have the best chance of acquiring dental anxiety, which can affect the behavior toward the treatment within the dental setting.(7). Age is a crucial factor which influences the behavior and cooperation of a toddler during dental treatment. Dental environment also plays a serious role in provoking anxious response, which successively affects the pain perception and behavioral response of a toddler in dental pain.(8).A child's cognitive function and speech and language development also play an important role within the perception of pain in children. A child's behavior can also be modified by the attitude of the oldsters ,siblings, or coevals influences(9) Cavity is one among the foremost common childhood diseases which may have an excellent impact on the standard of life. However, the progression and consequences of cavity are often reduced or eliminated by applying preventive dental practices and early intervention strategies at public and individual levels(10). Our team has extensive knowledge and research experience that has translated into high quality publications(11–19),(20),(21),(22,23),(24),(25),(26–30). Therefore, the aim of the study is to analyze dental practitioners' perceptions of preventive measures for pediatric patients.

MATERIALS AND METHODS

Study Design and Study setting

A descriptive cross sectional hospital based study in the Saveetha Dental College and Hospital (Saveetha University)

Sample size estimation

Sample size was estimated using the manual calculation formula ($N=Z^2Pq/L2$) based on the study done by (1) and the total sample size arrived was 103

Study Population

The study population consists of BDS and MDS graduates

Ethical Approval

Ethical approval was obtained from the Institutional Review Board in Saveetha University.

Data collection

Data collection can be done by means of online google survey forms.The first part of the questionnaire consists of demographic details which includes age, gender, highest level of education and number of years in clinical experience.

Statistical analysis

Data will be entered in Microsoft Excel Sheet and analysed using SPSS software (IBM Software version 23;NY). Descriptive statistics was expressed by means of number and frequency and percentage and the Chi-Square test was used to find out association between variables level of statistical significance will be $P < 0.05$

RESULT

Figure 1 shows the distribution of subjects by gender. 49.51% of the study participants were male and 50.49% of the study participants were female. Most of the women responded to my study. Most of the study participants (84.47%) were between 22 and 32 years old up to 14 years of age.56% of the study participants were between 33 and 42 years old and 0.97% of the study participants were over 42. Most of the respondents were between 22 and 32 years old. Most of the study participants were BDS graduates, that is 79.61% and 20.39% of the study participants were MDS graduates (refer figure 2).

Most of the respondents were BDS graduates (refer figure 3). Figure 4 shows the distribution of study topics according to the number of years of clinical experience. The majority of the study participants had 5 years of experience with 80.58% and 14.56% of the study participants 10 years of experience and 4.85% of the study participants had more than 10 years of experience Most of the respondents had 5 years of clinical experience Figure 5 shows the Correlation between the highest level of education and the number of responses for the different age groups of topical fluoride application. 57.28% of the MDS graduates answered with "yes" and 12.62% of the BDS graduates answered with "yes". This shows that more general practitioners believe that a well-aligned prosthesis is important to the overall appearance of the face than non-orthodontists MDS graduates

know more about different age groups of topical fluoride application, and the BDS graduates performed chi-square test Association was found not to be statistically significant (the chi-square value is 0.802; $p > 0.05$)

Figure 6: represents the relationship between the highest level of education and the number of responses for use from space. 54.37% of MDS graduates answered with “yes” and 12.62% of the BDS graduates answered with “yes”. MDS graduates are more familiar with the use of placeholders than BDS graduates The chi-square test was performed and the association was not statistically significant (the chi-square value is 0.309; $p > 0.05$).

Figure 7 shows the relationship between the highest level of training and the number of responses for the various contraindications to the use of pit and fissure sealants. 68.93% of MDS graduates who answered “Yes” and 13.59% of BDS graduates answered “Yes”. MDS graduates know the various contraindications for the use of dimple and fissure sealing better than BDS graduates. The chi-square test was performed and the association was found to be not statistically significant (the chi-square value is 4.599; $p > 0.05$)

Figure 8 shows the relationship between the highest level of education and the number of responses to educate patients and their parents. 53.40% of the MDS graduates answered “Yes” and 12.62% of the BDS graduates answered “Yes”. MDS graduates know more about educating patients and their parents about the importance of fluoride than BDS graduates. A chi-square test was performed and the association was found not to be statistically significant (the chi-square value is 0.199; $p > 0.05$)

Figure 9 shows the relationship between the highest level of education and the number of responses from patients to pediatric patients. 56, 31% of the MDS graduates answered “yes” and 11.65% of BDS graduates answered “yes”. More MDS graduates prefer their patients to the pediatric dentist than BDS graduates The chi-square test was performed and the association was not statistically significant .41; $p > 0.05$)

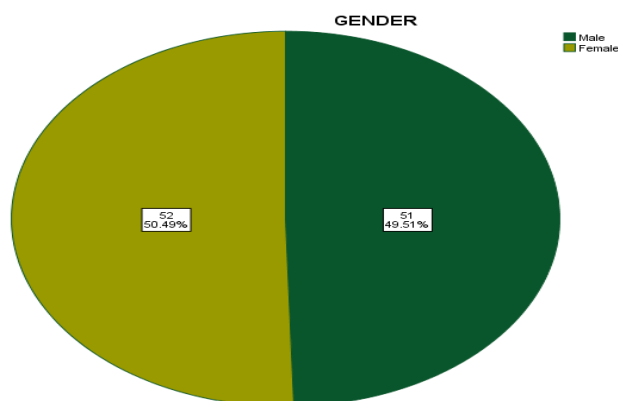


Figure 1 represents the distribution of study subjects based on gender. Green represents female and blue represents male. 49.51% of study subjects were male and 50.49% of study subjects were female. Majority of the females have responded to my study.

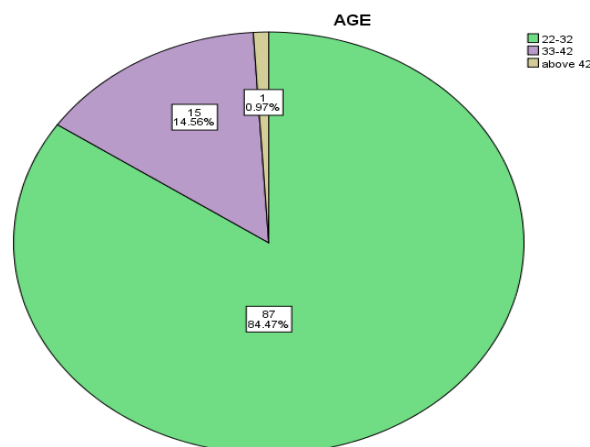


Figure 2 represents the distribution of study subjects based on age. Blue, green, light brown represents the age group between 22 - 32 years, 33 - 42 years and above 42 years respectively . Most of the study subjects were between the age group of 22 - 32 years with 84.47% and 14.56% of study subjects were between 33 - 42 years and 0.97% of study subjects were above 42. Majority of the respondents were from the age between 22-32.

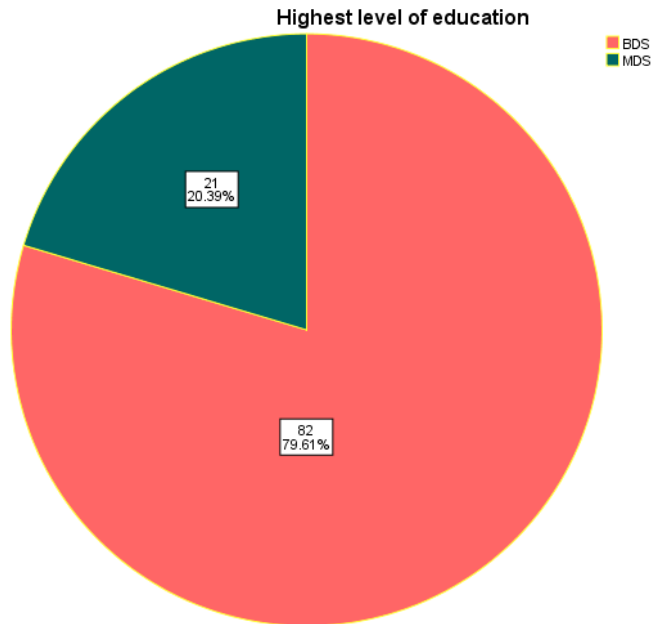


Figure 3: represents the distribution of study subjects based on the highest level of education . Blue, green represent BDS and MDS Graduates respectively. Most of the study subjects were BDS Graduates which is 79.61% and 20.39% of study subjects were MDS Graduates.Majority of the respondents were BDS.

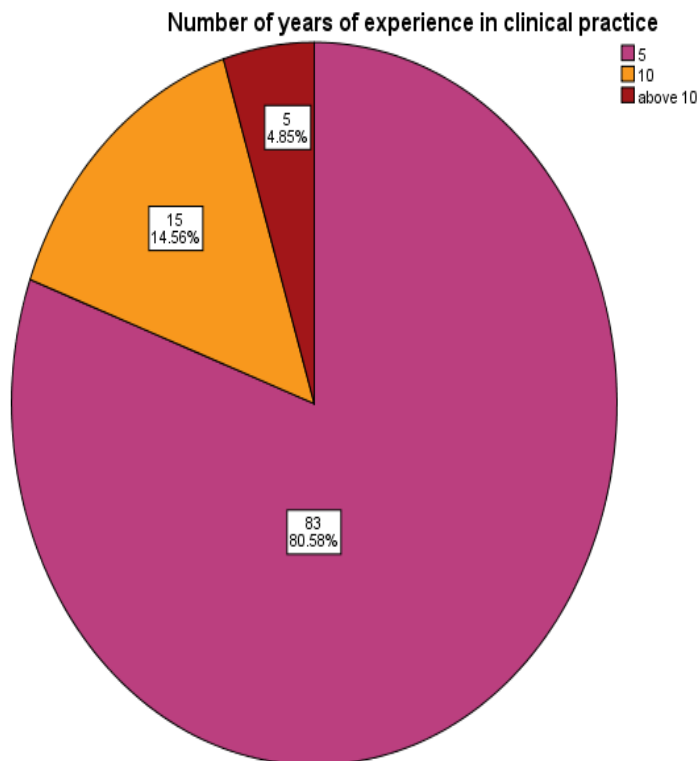


Figure 4 represents the distribution of study subjects based on the number of years in clinical experience. Blue, green, light brown represents the years 5, 10 and above 10 years respectively . Most of the study subjects were from the 5 year of experience with 80.58% and 14.56% of study subjects from the 10 year of experience and 4.85% of study subjects were above 10 years of experience.Majority of the respondents' clinical experience were for 5 years.

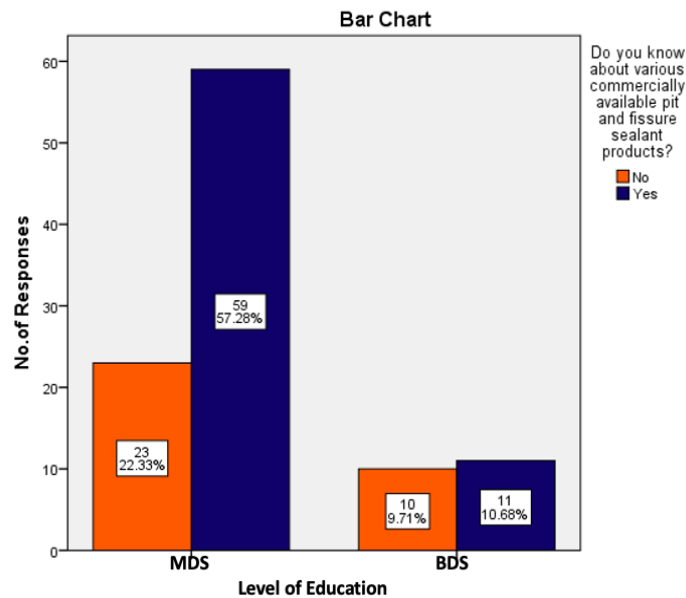


Figure 5 represents the association between the highest level of education and number of responses for the various age groups of topical fluoride application. X axis represents the highest level of education and Y axis represents the number of responses. 57.28% of the MDS Graduates responded 'Yes' and 10.68% of the BDS Graduates responded 'Yes'. This shows that more number of general practitioners think that a well aligned teeth is important for overall facial appearance than non orthodontic specialists. MDS graduates have more knowledge about various age groups of topical fluoride application than BDS graduates. Chi square test was done and association was found to be statistically not significant (Chi square value is 0.802 ; $p > 0.05$)

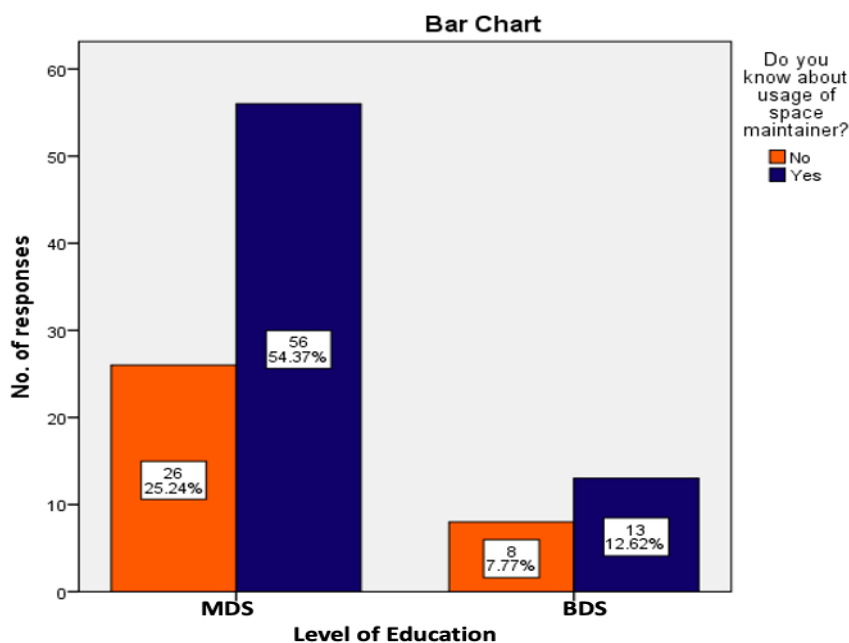


Figure 6: represents the association between the highest level of education and number of responses for the usage of space maintainers. X axis represents the highest level of education and Y axis represents the number of responses. 54.37% of the MDS Graduates responded 'Yes' and 12.62% of the BDS Graduates responded 'Yes'. MDS graduates have more knowledge about the use of space maintainers than BDS graduates. Chi square test was done and association was found to be statistically not significant (Chi square value is 0.309 ; $p > 0.05$)

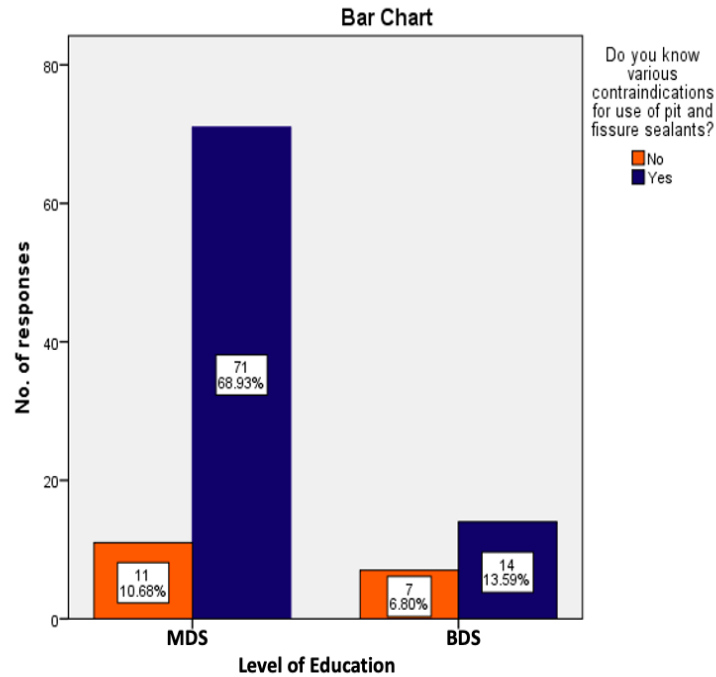


Figure 7 represents the association between the highest level of education and number of responses for the various contraindications for use of pit and fissure sealants. X axis represents the highest level of education and Y axis represents the number of responses. 68.93% of the MDS Graduates responded 'Yes' and 13.59% of the BDS Graduates responded 'Yes'. MDS graduates have more knowledge about various contraindications for use of pit and fissure sealant than BDS graduates. Chi square test was done and association was found to be statistically not significant (Chi square value is 4.599; $p > 0.05$).

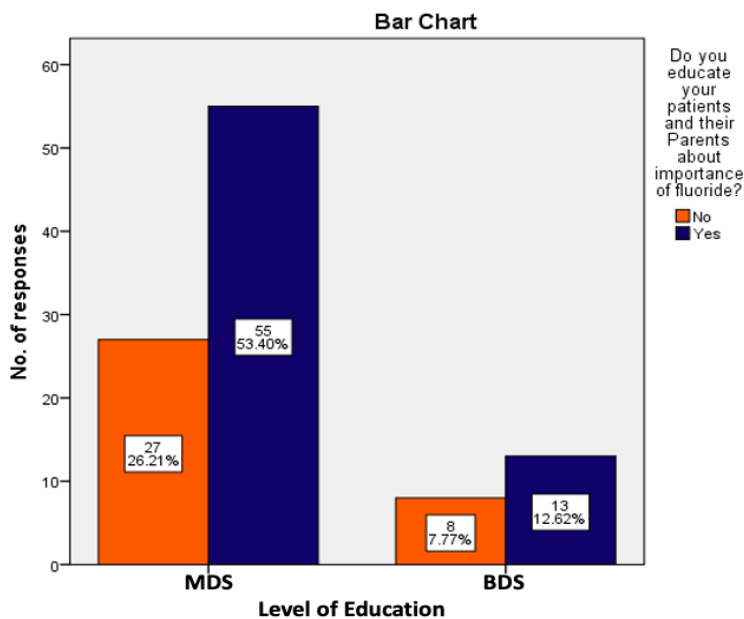


Figure 8 represents the association between the highest level of education and number of responses for the education of the patients and their parents about the importance of fluoride. X axis represents the highest level of education and Y axis represents the number of responses. 53.40% of the MDS Graduates responded 'Yes' and 12.62% of the BDS Graduates responded 'Yes'. MDS graduates have more knowledge about educating the patients and their parents about the importance of fluoride than BDS graduates. Chi square test was done and association was found to be statistically not significant (Chi square value is 0.199; $p > 0.05$).

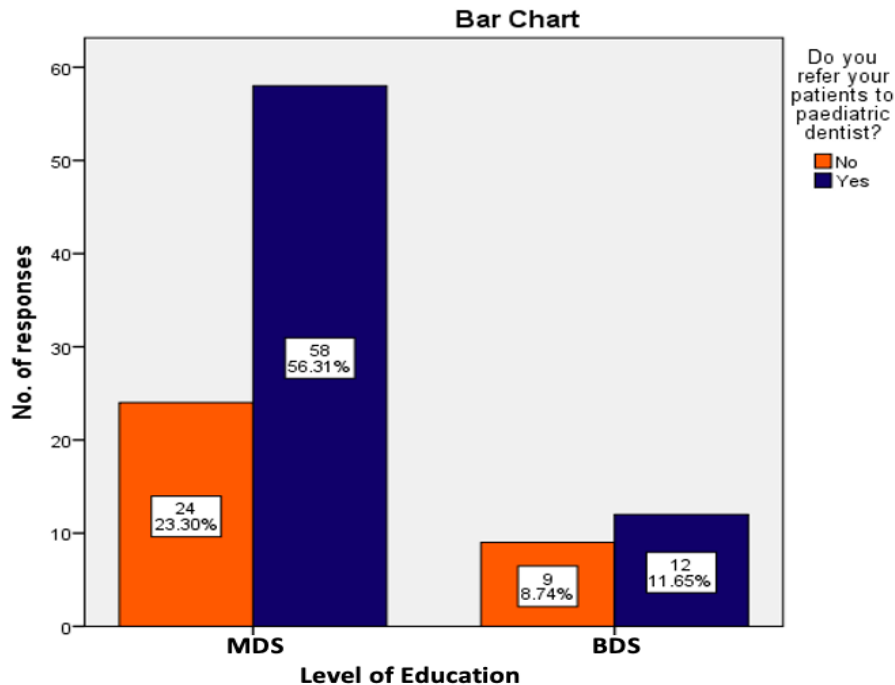


Figure 9 represents the association between the highest level of education and number of responses for the patients to paediatric patients. X axis represents the highest level of education and Y axis represents the number of responses. 56.31% of the MDS Graduates responded 'Yes' and 11.65% of the BDS Graduates responded 'Yes' . More number of MDS graduates prefer their patients to paediatric dentists than BDS graduates. Chi square test was done and association was found to be statistically not significant(Chi square value is1.41; $p > 0.05$)

DISCUSSION

The success rate of preventive measures depends, to a large extent, on the interest and the patient cooperation. The dentists should inform their patients about the importance of these methods.(2).

The effect of healthy nutrition on oral health has been associated with toothbrushing and dental flossing which in turn prevents cavities and periodontal disease.(31). Therefore, oral health education should be provided to patients in addition to preventive treatment as well.

In a study done by Arheim A et al, the percentages of participants who perceive themselves competent in performing preventive dental practices are presented . While the proficiency in providing oral hygiene instructions was expressed by most of the participants (95.4%), topical fluoride application, diagnosis of initial caries, and pit and fissure sealants were the least grasped skills (12.0, 22.2, and 25.0%, respectively). There were differences between study subgroups in their perceived competence of preventive dental practices. Females were more confident than males in practicing the skills of diagnosing initial dental caries and applying pit and fissure sealant ($p=0.043$ and 0.01 , respectively)(32).

Similarly, a larger number of participants who have had grade good or higher considered themselves competent in performing preventive resin restoration, and pit and fissure sealant procedures ($p=0.022$ and 0.004 , respectively).(32). This present study explains the question "Do you use topical fluoride in your routine dental practice?" 47.57% of the MDS Graduates responded yes to this question and 32.04% of the MDS Graduates responded no to this question, 11.65% of the BDS Graduates responded yes to this question, 8.74% of the BDS Graduates responded no to this question.

In our study, MDS graduate found to exhibit better knowledge and perceptions towards the use of preventive measures for the caries prevention among pediatric patients than BDS graduates

CONCLUSION

Based on the results of the present study, it can be concluded that MDS graduates had a better perception towards the use of preventive measures for pediatric patients for the prevention of dental caries.

REFERENCES

- Patil RU, Sahu A, Kambalimath HV, Panchakshari BK, Jain M. Knowledge, Attitude and Practice among Dental Practitioners Pertaining to Preventive Measures in Paediatric Patients. J Clin Diagn Res. 2016 Dec;10(12):ZC71-5.

2. Aras A, Dogan M. Attitude of general dental practitioners to pediatric patients and preventive dentistry [Internet]. Vol. 10, SRM Journal of Research in Dental Sciences. 2019. p. 178. Available from: http://dx.doi.org/10.4103/srmjrds.srmjrds_71_19
3. Subramanyam D, Gurunathan D. Knowledge, Attitude, and Practice amongst General Dentists Regarding Dental Pain Perception in Children. *Int J Clin Pediatr Dent.* 2020 May;13(3):207-10.
4. Thevissen E, De Bruyn H, Colman R, Koole S. Attitude of dental hygienists, general practitioners and periodontists towards preventive oral care: an exploratory study [Internet]. Vol. 67, *International Dental Journal.* 2017. p. 221-8. Available from: <http://dx.doi.org/10.1111/idj.12289>
5. Aboalshamat K, Daoud O, Mahmoud LA, Attal S, Alshehri R, Bin Othman D, et al. Practices and Attitudes of Dental Loupes and Their Relationship to Musculoskeletal Disorders among Dental Practitioners. *Int J Dent.* 2020 Jul 30;2020:8828709.
6. Radwan W, AlNasser AA, Aloqab H, Al-Saggaf K, Almuhtab NA, Alnasyan B. Knowledge and Use of Caries Detection Methods among Dental Students and Dental Practitioners in Riyadh, Saudi Arabia. *Int J Dent.* 2020 Dec 2;2020:8825890.
7. Tawil SE, El Tawil S, El Dokky N. Effect of Jet injection (INJEX) on pain perception among a group of pediatric dental patients [Internet]. Vol. 64, *Egyptian Dental Journal.* 2018. p. 1933-9. Available from: <http://dx.doi.org/10.21608/edj.2018.76683>
8. Viridi M. Emerging Trends in Oral Health Sciences and Dentistry. *BoD - Books on Demand;* 2015. 854 p.
9. Evans RW, Pakdaman A, Dennison PJ, Howe ELC. The Caries Management System: an evidence-based preventive strategy for dental practitioners. Application for adults [Internet]. Vol. 53, *Australian Dental Journal.* 2008. p. 83-92. Available from: <http://dx.doi.org/10.1111/j.1834-7819.2007.00004.x>
10. Ferney P, Clauss F, Offner D, Wagner D. [Preventive and therapeutic advantages of sugar-free chewing gums in orthodontics. A study conducted on practitioners and patients]. *Orthod Fr.* 2017 Sep;88(3):275-81.
11. Mathew MG, Samuel SR, Soni AJ, Roopa KB. Evaluation of adhesion of Streptococcus mutans, plaque accumulation on zirconia and stainless steel crowns, and surrounding gingival inflammation in primary molars: randomized controlled trial. *Clin Oral Investig.* 2020 Sep;24(9):3275-80.
12. Samuel SR. Can 5-year-olds sensibly self-report the impact of developmental enamel defects on their quality of life? *Int J Paediatr Dent.* 2021 Mar;31(2):285-6.
13. Samuel SR, Kuduruthullah S, Khair AMB, Al Shayeb M, Elkaseh A, Varma SR, et al. Impact of pain, psychological-distress, SARS-CoV2 fear on adults' OHRQOL during COVID-19 pandemic. *Saudi J Biol Sci.* 2021 Jan;28(1):492-4.
14. Samuel SR, Kuduruthullah S, Khair AMB, Shayeb MA, Elkaseh A, Varma SR. Dental pain, parental SARS-CoV-2 fear and distress on quality of life of 2 to 6 year-old children during COVID-19. *Int J Paediatr Dent.* 2021 May;31(3):436-41.
15. Samuel SR, Acharya S, Rao JC. School Interventions-based Prevention of Early-Childhood Caries among 3-5-year-old children from very low socioeconomic status: Two-year randomized trial. *J Public Health Dent.* 2020 Jan;80(1):51-60.
16. Vikneshan M, Saravanakumar R, Mangaiyarkarasi R, Rajeshkumar S, Samuel SR, Suganya M, et al. Algal biomass as a source for novel oral nano-antimicrobial agent. *Saudi J Biol Sci.* 2020 Dec;27(12):3753-8.
17. Chellapa LR, Rajeshkumar S, Arumugham MI, Samuel SR. Biogenic Nanoselenium Synthesis and Evaluation of its antimicrobial, Antioxidant Activity and Toxicity. *Bioinspired Biomim Nanobiomaterials.* 2020 Jul 23;1-6.
18. Samuel SR, Mathew MG, Suresh SG, Varma SR, Elsubeihi ES, Arshad F, et al. Pediatric dental emergency management and parental treatment preferences during COVID-19 pandemic as compared to 2019. *Saudi J Biol Sci.* 2021 Apr;28(4):2591-7.
19. Barma MD, Muthupandiyani I, Samuel SR, Amaechi BT. Inhibition of Streptococcus mutans, antioxidant property and cytotoxicity of novel nano-zinc oxide varnish. *Arch Oral Biol.* 2021 Jun;126:105132.
20. Muthukrishnan L. Nanotechnology for cleaner leather production: a review. *Environ Chem Lett.* 2021 Jun 1;19(3):2527-49.

21. Muthukrishnan L. Multidrug resistant tuberculosis - Diagnostic challenges and its conquering by nanotechnology approach - An overview. *Chem Biol Interact.* 2021 Mar 1;337:109397.
22. Sekar D, Auxzilia PK. Letter to the Editor: H19 Promotes HCC Bone Metastasis by Reducing Osteoprotegerin Expression in a PPP1CA/p38MAPK-Dependent Manner and Sponging miR-200b-3p [Internet]. *Hepatology.* 2021. Available from: <http://dx.doi.org/10.1002/hep.31719>
23. Gowhari Shabgah A, Amir A, Gardanova ZR, Olegovna Zekiy A, Thangavelu L, Ebrahimi Nik M, et al. Interleukin-25: New perspective and state-of-the-art in cancer prognosis and treatment approaches. *Cancer Med.* 2021 Aug;10(15):5191–202.
24. Kamala K, Sivaperumal P, Paray BA, Al-Sadoon MK. Author response for “Identification of haloarchaea during fermentation of *Sardinella longiceps* for being the starter culture to accelerate fish sauce production” [Internet]. Wiley; 2021. Available from: <https://publons.com/publon/47375106>
25. Ezhilarasan D, Lakshmi T, Subha M, Deepak Nallasamy V, Raghunandhakumar S. The ambiguous role of sirtuins in head and neck squamous cell carcinoma. *Oral Dis* [Internet]. 2021 Feb 11; Available from: <http://dx.doi.org/10.1111/odi.13798>
26. Sridharan G, Ramani P, Patankar S, Vijayaraghavan R. Evaluation of salivary metabolomics in oral leukoplakia and oral squamous cell carcinoma. *J Oral Pathol Med.* 2019 Apr;48(4):299–306.
27. R H, Hannah R, Ramani P, Ramanathan A, Jancy MR, Gheena S, et al. CYP2 C9 polymorphism among patients with oral squamous cell carcinoma and its role in altering the metabolism of benzo[a]pyrene [Internet]. Vol. 130, *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology.* 2020. p. 306–12. Available from: <http://dx.doi.org/10.1016/j.oooo.2020.06.021>
28. J PC, Pradeep CJ, Marimuthu T, Krithika C, Devadoss P, Kumar SM. Prevalence and measurement of anterior loop of the mandibular canal using CBCT: A cross sectional study [Internet]. Vol. 20, *Clinical Implant Dentistry and Related Research.* 2018. p. 531–4. Available from: <http://dx.doi.org/10.1111/cid.12609>
29. Wahab PUA, Abdul Wahab PU, Madhulaxmi M, Senthilnathan P, Muthusekhar MR, Vohra Y, et al. Scalpel Versus Diathermy in Wound Healing After Mucosal Incisions: A Split-Mouth Study [Internet]. Vol. 76, *Journal of Oral and Maxillofacial Surgery.* 2018. p. 1160–4. Available from: <http://dx.doi.org/10.1016/j.joms.2017.12.020>
30. Mudigonda SK, Murugan S, Velavan K, Thulasiraman S, Krishna Kumar Raja VB. Non-suturing microvascular anastomosis in maxillofacial reconstruction- a comparative study. *Journal of Cranio-Maxillofacial Surgery.* 2020 Jun 1;48(6):599–606.
31. Hujoel PP, Cunha-Cruz J, Banting DW, Loesche WJ. Dental flossing and interproximal caries: a systematic review. *J Dent Res.* 2006 Apr;85(4):298–305.
32. Arheiam A, Bankia I, Ingafou M. Perceived competency towards preventive dentistry among dental graduates: the need for curriculum change. *Libyan J Med.* 2015 Jan 2;10:26666.