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ABSTRACT
Background: general dental practitioners and non-orthodontic specialty play an important role in educating their patients about the principles and practice of orthodontic treatment; which may be very beneficial to the patient's lifestyle. It is, therefore, important to spot their level of data and attitude toward treatment . This study was planned to review this aspect within the sort of comparative analysis generally dental practitioners and other specialties in dentistry. Hence the aim of this study is to analyse the knowledge and attitude about principles and practices of orthodontic treatment among general dental practitioners and non orthodontic specialists.
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 is been analysed by using the software IBM SPSS. Descriptive statistics were expressed by means of number, frequency, and percentage. Chi-square test was used to find the association between variables.
Result: The present study reported that 43% of dental practitioners and 30% of non orthodontic specialists felt that orthodontic treatments can be started at any age. 43% of dental practitioners and 31% of non orthodontic specialists were aware that teeth had to be removed for aligning irregular teeth.Chi square test was done and association was found to be statistically not significant(Chi square value is 0.68 ; p> 0.05)
Conclusion: Among the study population dental practitioners showed greater knowledge and awareness in comparison to non orthodontic specialist.This particular comparative study added more focus on the facts of existing conditions and scenarios of the knowledge and attitude of the general dental practitioners and other practicing specialities of dentistry towards the principles and practices of orthodontic treatment. Therefore the study showed the need for increased clinically oriented education of practice and ideas of orthodontic treatment.

Keywords: Orthodontic treatment, General dental practitioners, Non orthodontic specialist; Innovative analysis

INTRODUCTION

Oral health generally has the effect on the overall health of the individual and ultimately affects well-being, education, and development. In many countries, parents and their children aren't conscious of the essential causes, incidence and prevention of the common oral diseases. (1)One of the foremost common etiologies for the event of cavity , fluorosis, temporomandibular disorders and gingival diseases are malocclusion. Tooth malposition causes difficulty in movement of the mandible, mastication, swallowing, speech, increased susceptibility to trauma etc.(1,2)
Various factors like adverse oral habits, anomalies in number of dentition, shape, and developmental position of teeth can cause malocclusion. Malocclusion affects periodontal health, causes dental caries and temporomandibular joint problems. Therefore, it's necessary to understand the self-occurrence of malocclusion.(3)
Malocclusion means bad bite and it consists of a spectrum of deviation from the normal or ideal

occlusion to severe anomalies.Malocclusion is defined as an "occlusion during which there is a molar relationship between the arches in any of the planes of spaces or during which there are anomalies in tooth position beyond the traditional limits."(3,4) Malocclusion usually creates feelings of shame for their facial appearance and may also give a feeling of shyness in their society.The outcomes of the treatment are prevention of tissue damage, improvement in physical function and esthetics. The major benefits are improving quality of life, development of self-confidence; physical, psychological and social changes(5).

It is important to educate the individuals about the benefits of orthodontic treatment. This can be accomplished by a multidisciplinary approach during which general dental practitioners and other non-orthodontic specialties can play the role of oral orthodontic health educators, but as long as they need good knowledge and attitude of principles and practice of treatment . (6)Therefore, there is a need to identify the knowledge levels of dental practitioners with respect to orthodontic treatment as they play an important role in inculcating healthy lifestyle practices to their patients. This study was formulated for the comparative evaluation of the knowledge and attitude of the overall dental practitioners and non-orthodontic specialties about the treatment .(7)

The outcomes of the orthodontic treatment are prevention of tissue damage, improvement in physical function and esthetics. The other major benefits are improving quality of life, development of self-confidence; and physical, psychological and social changes(7,8).

Facial appearance is one among the foremost important physical characteristics within the development of one's self-confidence; therefore, it seems that folks who are satisfied with their own appearance, have more self-confidence in comparison with others. The most important motivation for treatment is improvement in dentofacial esthetics.(8)

Therefore, there is a need to identify the knowledge levels of dental practitioners with respect to orthodontic treatment as they play an important role in inculcating healthy lifestyle practices to their patients.(8,9). Our team has extensive knowledge and research experience that has translated into high quality publications(10–18),(19),(20),(21,22),(23),(24),(25–29)This study was formulated for the comparative evaluation of the knowledge and attitude of the general dental practitioners and non-orthodontic specialties about the orthodontic treatment.(30)

MATERIALS AND METHODS

Study Design and Study setting

A descriptive cross sectional study was conducted in Saveetha Dental College and Hospital (Saveetha University).

Sample size estimation

Sample size was estimated using the manual calculation formula ($N=Z\alpha^2Pq/L^2$) based on the study done by (1) and the total sample size arrived was 101.

Study Population

The study population consists of general practitioners and non orthodontic specialists over the age of 22.

Ethical Approval

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

Data collection

First part of the questionnaire contains demographic details. Second part of the questionnaire consists of questions related to the knowledge and attitude about principles and practices of orthodontic treatment among general dental practitioners and non orthodontic specialists.

The answer should be dental practitioner or non orthodontic specialists .where the second part of the questionnaire contains knowledge ,attitude and practice towards orthodontic treatment . Data collection was done by means of online google survey forms. Independent variables will be age,gender and Dependent variables will be knowledge and attitude about patient's perception of dental care offered by male or female dentists.

Sampling

Simple random sampling technique was followed.

Statistical analysis

Data was entered in Microsoft excel sheet after collection and was analysed using SPSS software. Descriptive statistics were expressed by means of number, frequency, and percentage. Chi-square test was used to find the

association between variables. The level of statistical significance is at $p<0.05$. Statistics software was Statistical Software for Social Sciences, SPSS, version 23.

RESULT

Majority ie; 86.14% were from the age group 33-42 and 13.86 were from the age group 22-23(figure 1). 53% are males and 46.5%are females (figure 2). Majority ie; 55.4% were general dental practitioners and 44.6% were non orthodontic specialists(figure 3). 72.3% think orthodontic treatment can be started at a young age(figure 5).75.2% think malocclusion can be treated during the mixed dentition stage(figure 6). 54.5% are aware of functional therapy(figure 7). 80.2% think well aligned teeth are important for overall facial appearance(figure 8).72.3% of people think functional appliances give a better result when advised during pre puberty growth spurt period(figure 9). 73.3% of people know that teeth will be removed during aligning teeth(figure 10). 62.4% think orthodontic treatment always requires extraction(figure 10). 80% of habits like mouth breathing or thumb sucking have an effect on front teeth alignment(figure 11). 73.3% are aware that miniscrews can replace molars for arch(figure 12). 71.3% carry out orthodontic procedures(figure 13).

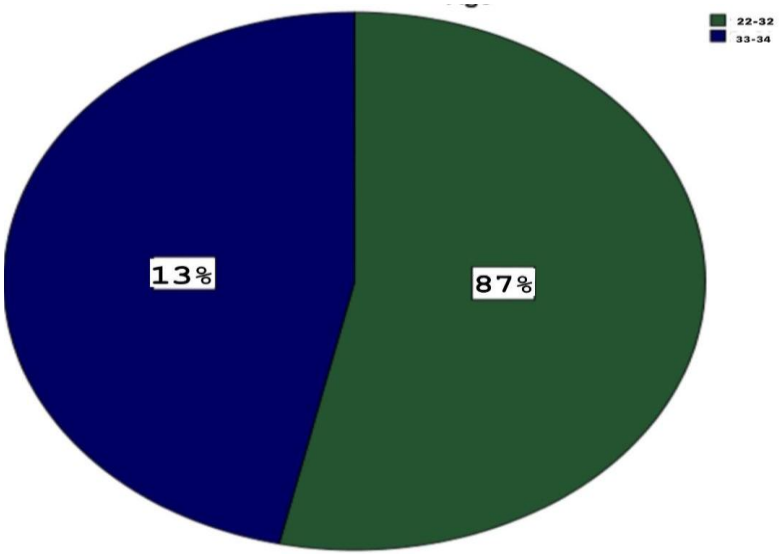

Figure1: pie chart showing the percentage distribution about the mode of knowledge about odontometric treatment among dental practitioners and non orthodontic specialists. Wherein , dark green(87%) represents the age group 22--32, Dark blue (13%%) represents 33-42.

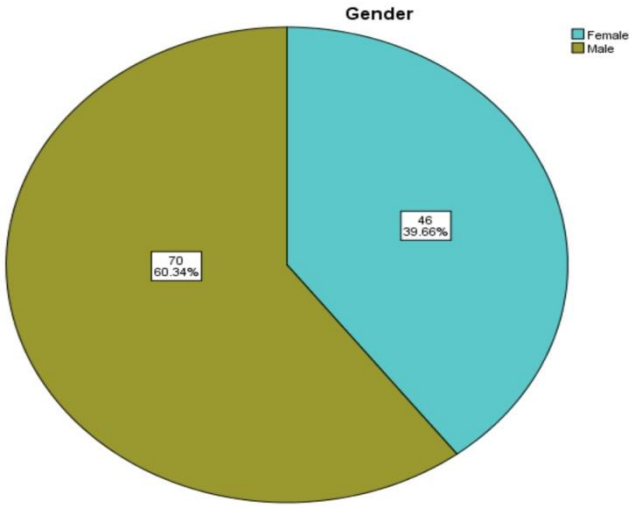

Figure2: pie chart showing the percentage distribution about the mode of knowledge about odontometric treatment among dental practitioners and non orthodontic specialists. Wherein , neon blue represents females (46%), yellow represents males (60.34%).

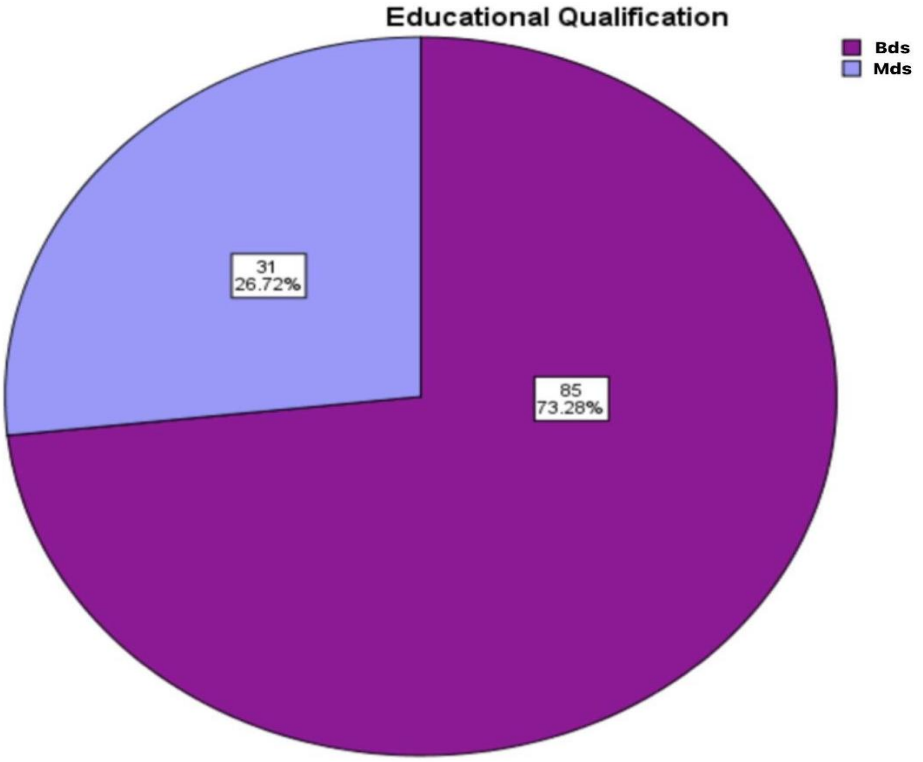

Figure3: pie chart showing the percentage distribution about the mode of knowledge about odontometric treatment among dental practitioners and non orthodontic specialists. Wherein , the violet colour represents bds(72.28%), lilac represents mds (26.72%).

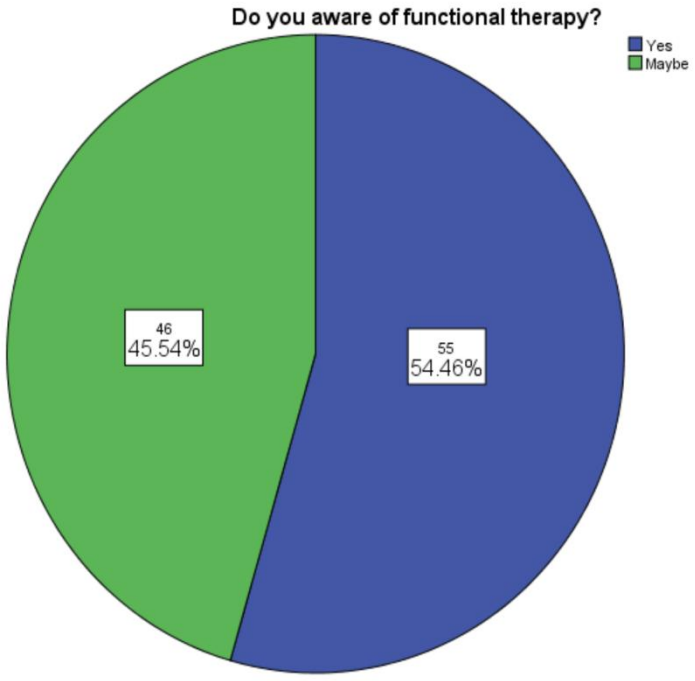

Figure4: pie chart showing the percentage distribution about the mode of knowledge about odontometric treatment among dental practitioners and non orthodontic specialists. Wherein , the blue colour represents that the participants are aware of functional therapy (54%), green represents that the participants are maybe aware of functional therapy (11%).

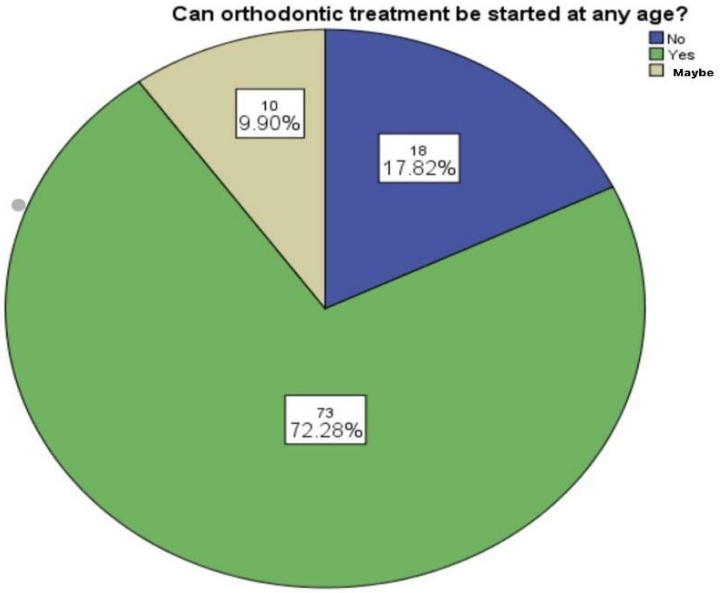

Figure5: pie chart showing the percentage distribution about the mode of knowledge about odontometric treatment among dental practitioners and non orthodontic specialists . Whereas , the blue colour represents no(17.82%), the beige colour represents maybe(9.9%), green color represents yes (72.28%).

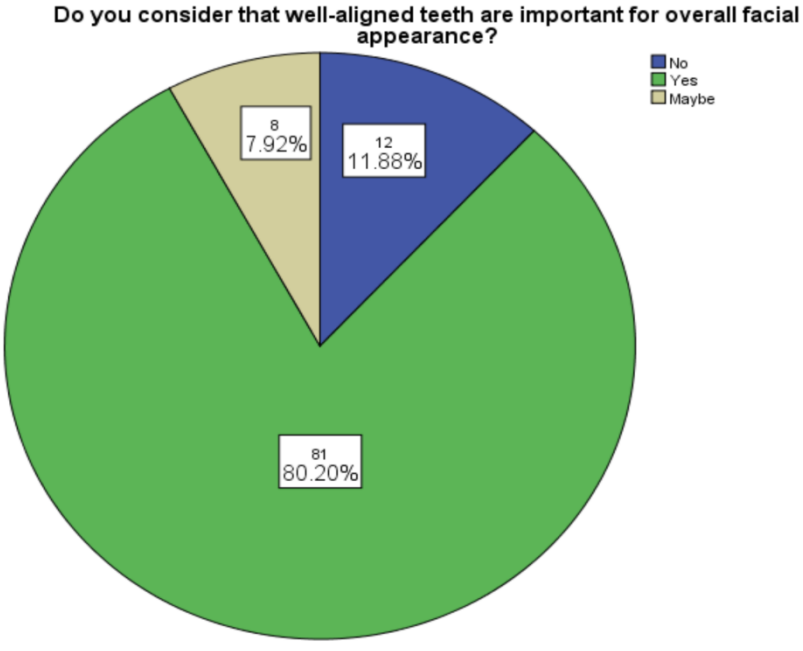

Figure 6: pie chart showing the percentage distribution about the mode of knowledge about odontometric treatment among dental practitioners and non orthodontic specialists. Whereas , the blue colour represents no(11.88%), the beige colour represents maybe(7.92%), green color represents yes (60.2%).

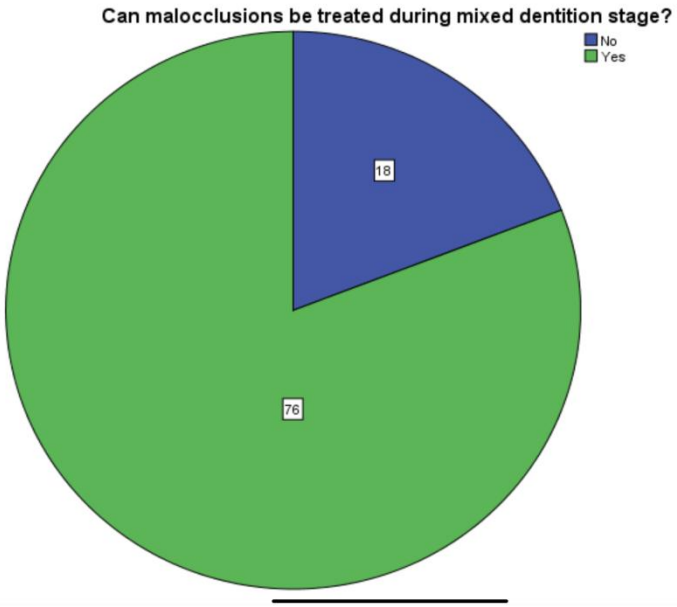

Figure7: pie chart showing the percentage distribution about the mode of knowledge about odontometric treatment among dental practitioners and non orthodontic specialists. Wherein , the blue colour represents no(18%), green color represents not quite so much (76%).

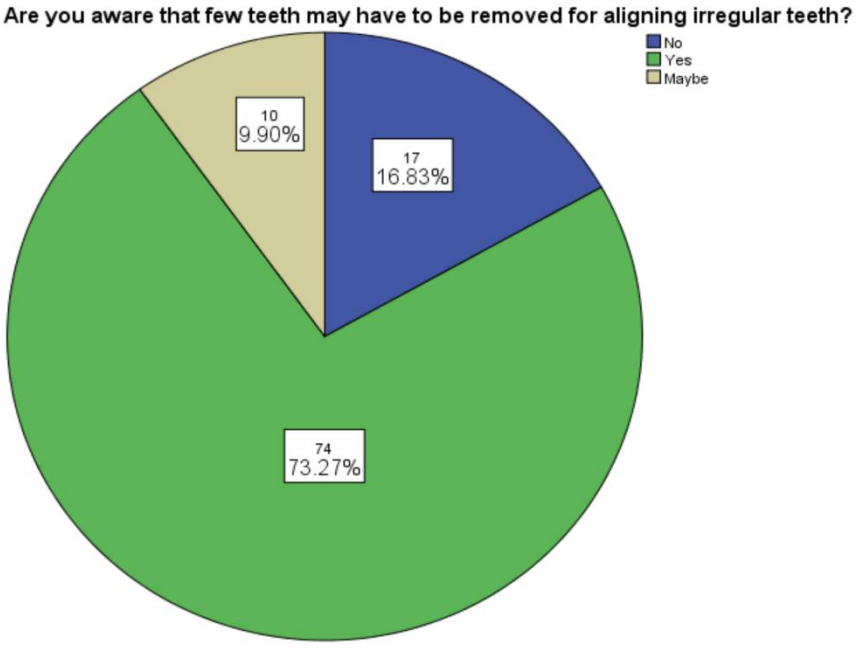

Figure8: pie chart showing the percentage distribution about the mode of knowledge about odontometric treatment among dental practitioners and non orthodontic specialists. Wherein , the blue colour represents no(16.63%), the beige colour represents maybe(9.9%), green color represents yes (73.27%).

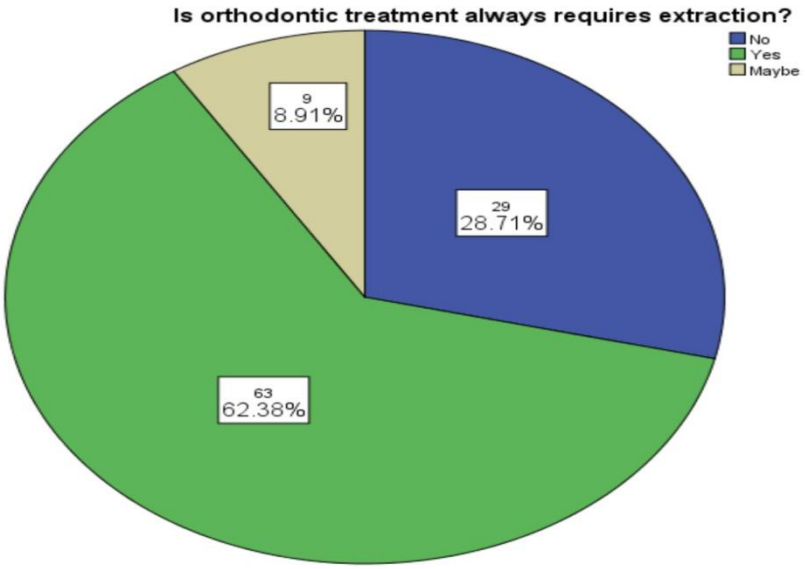

Figure9: pie chart showing the percentage distribution about the mode of knowledge about odontometric treatment among dental practitioners and non orthodontic specialists. Whereas , the blue colour represents no(28.71%), the beige colour represents maybe(8.91%), green color represents yes (62.36%).

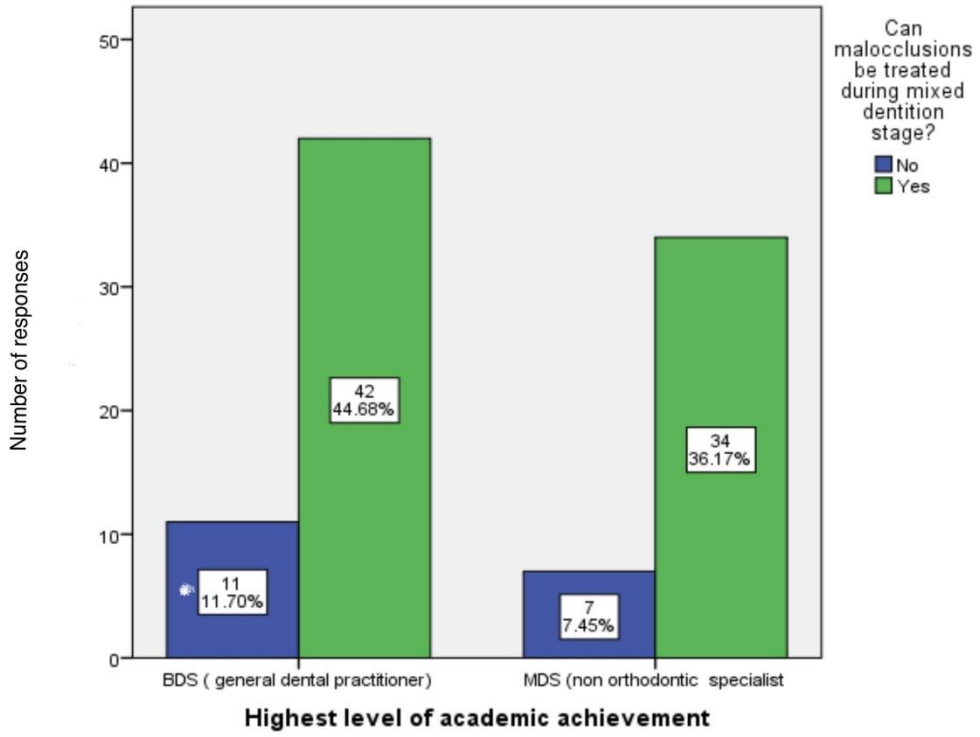

Figure10: bar graph showing association between highest level of academic achievement and count. X-axis represents count and Y-axis represents the highest level of academic achievement. 42% of the dental practitioners reported yes and 34% of non orthodontic specialists reported yes. This shows that general dental practitioners have more knowledge that malocclusion can be treated at a mixed dentition stage than non orthodontic specialists. Chi square test was done and association was found to be statistically not significant(Chi square value is 0.68 ; p> 0.05)

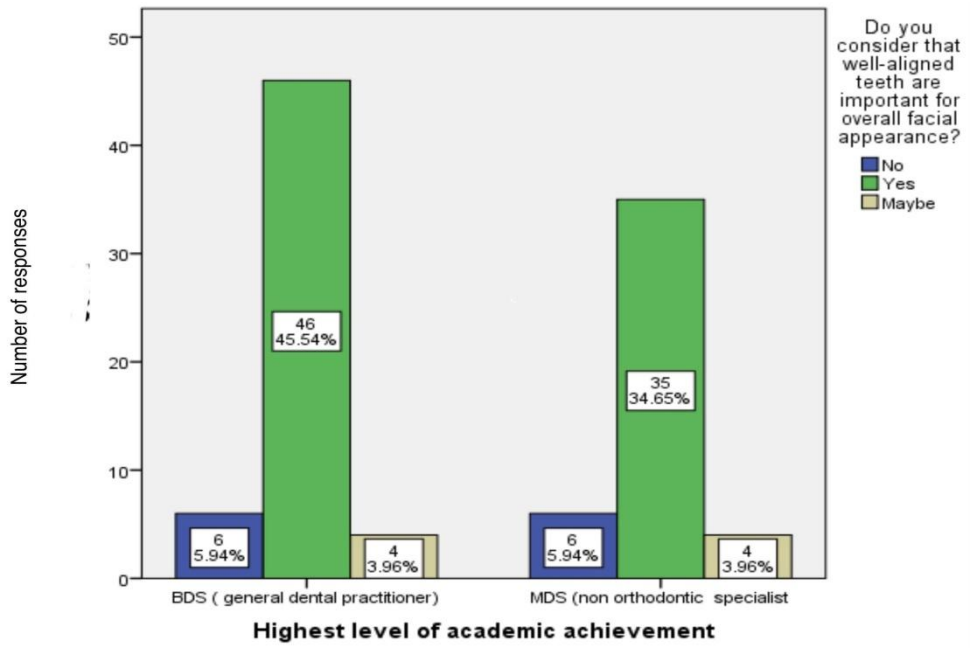

Figure11: bar graph showing association between highest level of academic achievement and count. X-axis represents count and Y-axis represents the highest level of academic achievement. 46% of the dental practitioners reported yes and 35% of non orthodontic specialists reported yes. This shows that general dental practitioners think that well aligned teeth are more important for overall facial appearance than non orthodontic specialists. Chi square test was done and association was found to be statistically not significant(Chi square value is 0.29 ; p> 0.05)

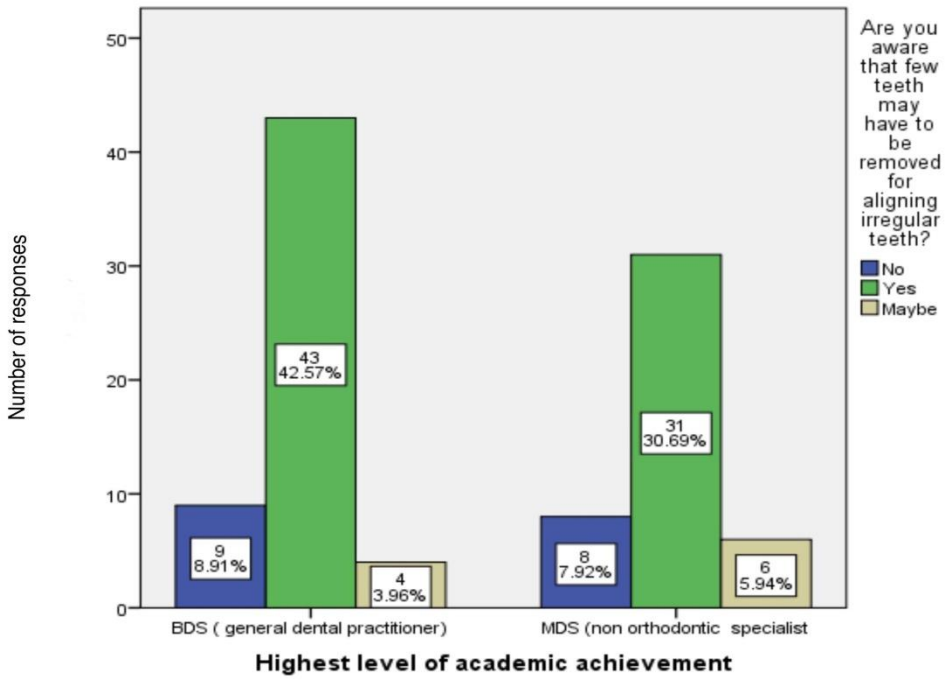

Figure12: bar graph showing association between highest level of academic achievement and count. X-axis represents count and Y-axis represents the highest level of academic achievement. 43% of the dental practitioners reported yes and 31% of non orthodontic specialists reported yes. This shows that general dental practitioners are more aware that teeth may be removed while aligning the teeth than non orthodontic specialists. Chi square test was done and association was found to be statistically not significant(Chi square value is 1.22 ; p> 0.05)

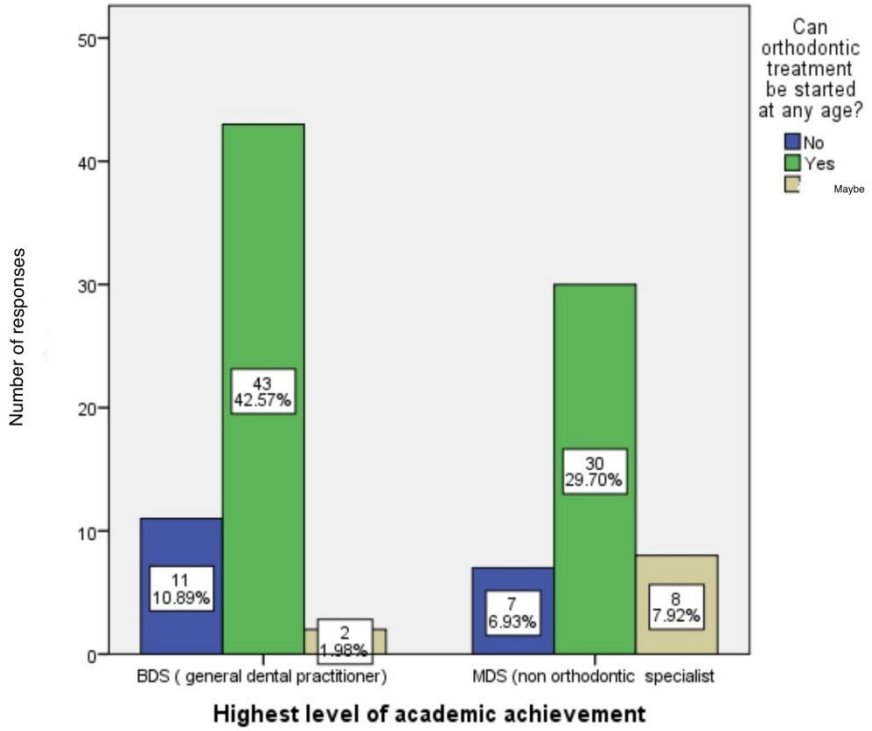

Figure13: bar graph showing association between highest level of dental practitioners and count. X-axis represents count and Y-axis represents the highest level of academic achievement. 43% of the dental practitioners reported yes and 30% of non orthodontic specialists reported yes.This shows that more number of general dental practitioners think that orthodontic specialists can be started at a young age than non orthodontic specialists. Chi square test was done and association was found to be statistically not significant(Chi square value is 0.18 ; p> 0.05)

DISCUSSION

This particular comparative study added more focus on the facts of existing conditions and scenarios of the knowledge and attitude of the general dental practitioners and other practicing specialities of dentistry towards the principles and practices of orthodontic treatment. Therefore the study showed the need for increased clinically oriented education of practice and concepts of orthodontic treatment. For this purpose, the syllabus during undergraduate concepts and continuing dental education programmes can be helpful for the other dental practitioners to upgrade their knowledge of orthodontic treatment.

This study was done in 100 participants 55.4% were general dental practitioners and 44.6% were non orthodontic specialists. Out of these 73.3% were from the age group 22-32, 53% were males and 46.5% were females. 72.3% think orthodontic treatment can be started at a young age.75.2% think malocclusion can be treated during the mixed dentition stage. 54.5% are aware of functional therapy. 80.2% think well aligned teeth are important for overall facial appearance.72.3% of people think functional appliances give a better result when advised during pre puberty growth spurt period. 73.3% of people know that teeth will be removed during aligning teeth. 62.4% think orthodontic treatment always requires extraction. 80% of habits like mouth breathing or thumb sucking have an effect on front teeth alignment. 73.3% are aware that miniscrews can replace molars for archl 71.3% carry out orthodontic procedures .

When the participants were questioned if orthodontic treatment can be started at any age, 78.2% of them answered positively. The treatment of malocclusions during the mixed dentition stage and the importance of well-aligned teeth for the overall facial appearance were answered affirmatively by 67.9% and 85.8% respectively, in the case of all participants. (31)About 100% positive response was present for the awareness of extraction of few teeth for aligning of the irregular teeth, in case of non-orthodontic specialties and 87.5% for the general dental practitioners.(31,32)

The maximum positive response i.e. 91.3% was given by a general dental practitioner for the effect of habits like mouth breathing or thumb sucking on alignment of the front teeth.(31–33)The percentage of “yes” answers for the questions of use of mini screws and retainers was 47.8% and 65.2% by the general practitioners and 75.0% and 81.2% by the non-orthodontic specialties respectively i.e. 75% of non-orthodontic specialties were

aware of the fact that mini screws can replace molars for anchorage while 25% were not familiar with the concept(33).

CONCLUSION

Among the study population dental practitioners showed greater knowledge and awareness in comparison to non orthodontic specialist.This particular comparative study added more focus on the facts of existing conditions and scenarios of the knowledge and attitude of the general dental practitioners and other practicing specialities of dentistry towards the principles and practices of orthodontic treatment. Therefore the study showed the need for increased clinically oriented education of practice and concepts of orthodontic treatment. For this purpose, the syllabus during undergraduate concepts and continuing dental education programmes can be helpful for the other dental practitioners to upgrade their knowledge of orthodontic treatment.

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REFERENCE

1. Sastri MR, Tanpure VR, Palagi FB, Shinde SK, Ladhe K, Polepalle T. Study of the Knowledge and Attitude about Principles and Practices of Orthodontic Treatment among General Dental Practitioners and Non-orthodontic Specialties. J Int Oral Health. 2015 Mar;7(3):44–8.
2. Kapoor D, Bhatia S, Garg D. Assessment of the Attitude and Knowledge of the Principles and Practices of Orthodontic Treatment Among the Non-orthodontic Specialists and General Practitioner Dentists. JNMA J Nepal Med Assoc. 2018 Jul;56(212):766–9.
3. Abushiqa AAM. Knowledge and Awareness about Periodontitis Associated with the Orthodontic Treatment among the Dental Doctors of Dammam, KSA [Internet]. Vol. 5, Saudi Journal of Oral and Dental Research. 2020. p. 295–300. Available from: http://dx.doi.org/10.36348/sjodr.2020.v05i06.008
4. Agrawal R. Knowledge, attitude and perception of orthodontic treatment among dental students [Internet]. Vol. 6, International Journal of Dental Research. 2017. p. 3. Available from: http://dx.doi.org/10.14419/ijdr.v6i1.8604
5. Acharya A, Mishra P, Shrestha RM, Shah P. Orthodontic Treatment Knowledge among General Dentists and Non-orthodontic Specialists [Internet]. Vol. 9, Orthodontic Journal of Nepal. 2019. p. 40–4. Available from: http://dx.doi.org/10.3126/ojn.v9i1.25689
6. Alharbi M, Al-Salamah R. Knowledge of orthodontic treatment among various dental specialties: a systematic review [Internet]. International Journal of Medicine in Developing Countries. 2021. p. 353–8. Available from: http://dx.doi.org/10.24911/ijmdc.51-1604329550
7. Ganesan B, Ramamurthy J. Perception of Pain during Orthodontic Treatment among the General Public Undergoing and Not Undergoing Orthodontic Treatment [Internet]. Vol. 9, Journal of Evolution of Medical and Dental Sciences. 2020. p. 2614–9. Available from: http://dx.doi.org/10.14260/jemds/2020/569
8. Dhakal J, Shrestha M, Shrestha M, Acharya A. Comparison of Knowledge and Attitude Towards Orthodontic Treatment Among High School Students [Internet]. Vol. 9, Orthodontic Journal of Nepal. 2019. p. 61–5. Available from: http://dx.doi.org/10.3126/ojn.v9i2.28418
9. Shrestha RM, Bhattarai P, Dhakal J, Shrestha S. Knowledge, Attitude and Practice of Patients towards Orthodontic Treatment: A Multi-centric Study [Internet]. Vol. 4, Orthodontic Journal of Nepal. 2014. p. 6–11. Available from: http://dx.doi.org/10.3126/ojn.v4i1.11304
10. 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.
11. 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.
12. 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.

13. 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.
14. 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.
15. 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.
16. 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.
17. 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.
18. Barma MD, Muthupandiyan 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.
19. Muthukrishnan L. Nanotechnology for cleaner leather production: a review. Environ Chem Lett. 2021 Jun 1;19(3):2527–49.
20. Muthukrishnan L. Multidrug resistant tuberculosis - Diagnostic challenges and its conquering by nanotechnology approach - An overview. Chem Biol Interact. 2021 Mar 1;337:109397.
21. 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
22. 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.
23. 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
24. 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
25. 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.
26. 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
27. 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
28. 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
29. 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.
30. Imran NK, College of Dentistry, University of Baghdad, Baghdad, Iraq. Attitude and Knowledge of Orthodontics among General Dentists and Non-Orthodontic Specialists: A Questionnaire Based Survey [Internet]. International Journal of Dentistry and Oral Science. 2020. p. 814–9. Available from: http://dx.doi.org/10.19070/2377-8075-20000160

31. G A, Akshay G, Anur G, Singh K, Singh T. Practice and Attitude towards Orthodontic Services by Pedodontists and General Practitioners [Internet]. Vol. 05, JBR Journal of Interdisciplinary Medicine and Dental Science. 2017. Available from: http://dx.doi.org/10.4172/2376-032x.1000211
32. D ALS, AL Shammery D. Level of Awareness towards Orthodontic Treatment for Medically Compromised Patients among Dental Practitioners in Saudi Arabia [Internet]. Vol. 2, BAOJ Dentistry. 2016. Available from: http://dx.doi.org/10.24947/baojd/2/3/119
33. Gupta SP, Rauniyar S. Knowledge, attitude and practice towards management of orthodontic emergency during COVID-19 pandemic among orthodontic professionals [Internet]. Vol. 10, Orthodontic Journal of Nepal. 2020. p. 6–13. Available from: http://dx.doi.org/10.3126/ojn.v10i2.31145