Original Article

Knowledge And Awareness On Various Types Of Fixed Appliances And Aligners Among Medical Students

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Abstract

Background : Orthodontic fixed braces are a type of fixed orthodontic appliance that is used to rectify tooth alignment. Self-ligating braces, ceramic braces, Conventional braces,Aligners and lingual braces are among the different types of orthodontic braces commonly available for fixed orthodontic treatment . Despite the fact that there are many different types of fixed appliances , knowledge about these fixed appliances among the medical students is still questionable.The aim of the study was to assess the awareness of various types of orthodontic fixed appliances and aligners among the medical students.

Materials And Methods : A set of 14 questionnaires was formulated and distributed among the study participants. The participants were asked to fill the questionnaire . The survey was done in an online forum. A total of 100 validated entries were collected. Data was entered into Microsoft Excel 2007 and analysed in SPSS V20. Associations between categorical variables were determined using Chi-square test. $P < 0.05$ was considered statistically significant.

Results : The results shows that 78 % of the participants were aware of orthodontic speciality in dentistry and 86 % of the participants were aware of fixed and removable orthodontic treatment appliances.72 % Of the participants were having knowledge on various types of materials used in fixed orthodontic appliance. 53 % of them know about conventional and smart(Self ligating) technique in orthodontics and 72 % know about clear retainers. 64 % were aware that duration of orthodontic corrections may take upto 18 months. 72 % were aware that additional oral hygiene measures should be taken during the course of orthodontic treatment and retainers should be used after the completion of orthodontic corrections to prevent relapse.

Conclusion : Healthcare providers are primary caregivers for a variety of health-related complaints. The present day medical students are future health care providers. In this study , the results show that medical students have good knowledge on dental malocclusion and various specialties in dentistry as well as orthodontics and fixed appliances and aligners. Furthermore, exposure to the dental sub- specialities , especially orthodontics would enable them to identify and educate on malocclusions and make informed referrals appropriately.

Keywords: Awareness ; Fixed appliance and Aligners ; Innovative technique ; Knowledge ; Medical students

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INTRODUCTION

Oral health has an impact on an individual's overall health, which in turn has an impact on their well-being, education, and development. Many parents and children in many nations are unaware of the basic causes, symptoms, and prevention of common oral disorders. Malocclusion is one of the most common etiologies for dental caries, fluorosis, TMJ problems, and gingival illnesses[1] .Malocclusion can be caused by a variety of causes, including bad dental habits, abnormalities in the number of teeth, form, and developmental position of teeth [2] . Malocclusion refers to a range of abnormalities ranging from the normal or ideal occlusion to severe aberrations [3] .Tooth malposition can also cause problems with mandibular functional motions, mastication, swallowing, and speech, as well as greater vulnerability to trauma and periodontal disease [4].

A malocclusion is defined as a “occlusion in which the arches have a molar relationship in either of the planes of space or there are anomalies in tooth position beyond the usual limits.” Malocclusion frequently causes a sense of shame about one's looks

and can also make one feel bashful in society [3]. It has been discovered that an unfavourable dental look has a negative impact on self-esteem, career advancement, and peer acceptance.This, in turn, will have a negative impact on a person's level of social contact. The biggest reasons for starting orthodontic treatment are cosmetic concerns and negative effects on mental well-being [5] .Orthodontists traditionally have considered oral health and function as the principal goals of treatment. However, recently, there has been growing acceptance of esthetics and its psychosocial impact as an important treatment benefit [6]. To avoid future periodontal disease, oral hygiene is always improved during orthodontic treatment. Tooth plaque collection on the orthodontic appliance can lead to dental cavities and periodontal tissue deterioration if oral hygiene is neglected during orthodontic therapy [7]. During this time, orthodontic appliances cover a substantial portion of the tooth surface, making it difficult for the patient to maintain good oral hygiene. As a result, orthodontic patients' oral health education and conduct throughout orthodontic treatment are highly recommended [8]. Foreign objects are introduced in a physically and psychologically sensitive area of the body with orthodontic appliances. The desire to improve dentofacial aesthetics, social life, and self-confidence are all essential factors in a person's decision to seek orthodontic treatment [9]. Orthodontic treatment discomfort can impair a patient's compliance, satisfaction with treatment, and even cause stress between the patient and the practitioner [10]. Orthodontic therapy is a time-consuming and technique-sensitive clinical practise. The patient's awareness of the treatment's technical aspects, as well as his or her compliance with appliance maintenance, are critical to the treatment's management and success [11]. As a result, it is critical to inform people about the advantages of orthodontic treatment. This can be accomplished t hjhrough a multidisciplinary approach in which general dentists and other non-orthodontic specialists can serve as oral orthodontic health educators, but only if they are well-versed in the principles 0practise of orthodontic treatment and have a positive attitude toward it [12].Adults have a higher rate of malocclusion than children. Malocclusion is directly proportional to age, and its characteristics reflect the good or bad care of all teeth, beginning with the deciduous dentition [13]. The number of adult patients seeking orthodontic treatment is steadily increasing. Adult patients at specialised orthodontic clinics accounted for 30% of patients in the early 1990s [14], according to American data, and this figure was expected to rise until the end of the decade. This was clearly confirmed . Adult patients have undergone a major reorientation of orthodontic thinking in the last three decades, owing to changes in lifestyle, patient awareness, and multidisciplinary dental therapy, which has allowed for better management of the more complicated patient population, resulting in greatly improved quality of care and treatment prognosis.Adult orthodontic treatment should be encouraged for a variety of reasons, including improved function and occlusion, improved aesthetics, and psychological benefits [15] In growing children, orthodontic treatment almost always tries to meet Andrews' six keys to normal occlusion and the best potential aesthetics [16]. When compared to other medical operations, the danger of "doing harm" in orthodontics is significantly lower [17] Awareness, socioeconomic considerations, expert availability, ethnic patterns, and values all influence the desire and necessity for orthodontic treatment. The state or ability to notice, feel, or be cognizant is known as awareness. Oral health is an integral element of overall health, and awareness is the foundation for planning it. Information on malocclusion and treatment needs is now available from all over the world, thanks to the availability of meristic criteria and the evolution of malocclusion indices [18].

Most health professionals overlook orthodontic disorders because they are not connected with significant mortality or morbidity. As a result, they are commonly dismissed as minors. However, studies show that malocclusion has a major impact on the affected person's mental health. Patients' lack of information about the treatment of oral health problems makes general practitioners and physicians the primary caregivers, and their participation in oral health-care delivery is critical [19].There has been an increase in awareness of orthodontics as a dental speciality in both children and adults in developed countries where community-based preventive oral health programmes are adopted. However, a huge proportion of young people in many underdeveloped nations are unaware of the origins, symptoms, and prevention of malocclusion [20]

Our team has extensive knowledge and research experience that has translate into high quality publications [21–40]

With the ease of access to a large ocean of information at the tap of a gadget, the general public's understanding and awareness of orthodontic treatment has risen dramatically in recent years. However, it is still unclear whether this information has resulted in increased patient awareness.Despite the fact that there are many different types of braces, the general public's awareness of these braces is still limited. To find out, we intended to assess Medical student’s knowledge and awareness of different types of orthodontic braces in order to better understand the existing situation and the need for future education programmes.

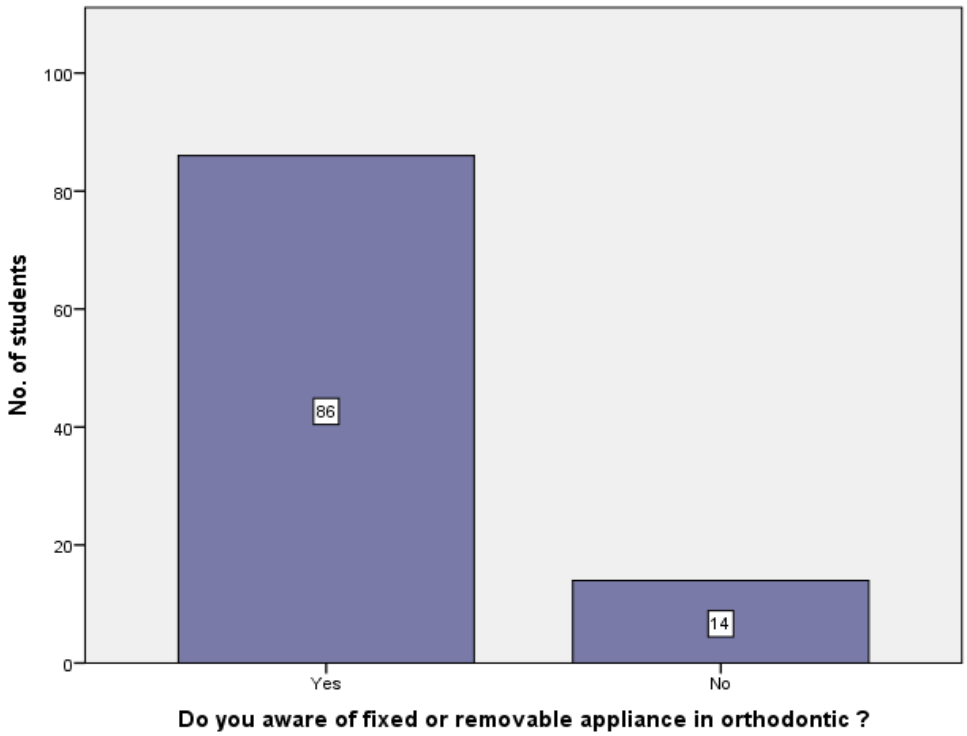
Materials And Methods

We had prepared a questionnaire to evaluate the knowledge, attitude, and perception of various fixed orthodontic appliances used for correction of malocclusion.The questionnaires were distributed to a total of 100 participants. A set of 14 questionnaires was formulated and distributed among the study participants. The participants were asked to fill the questionnaire . The survey

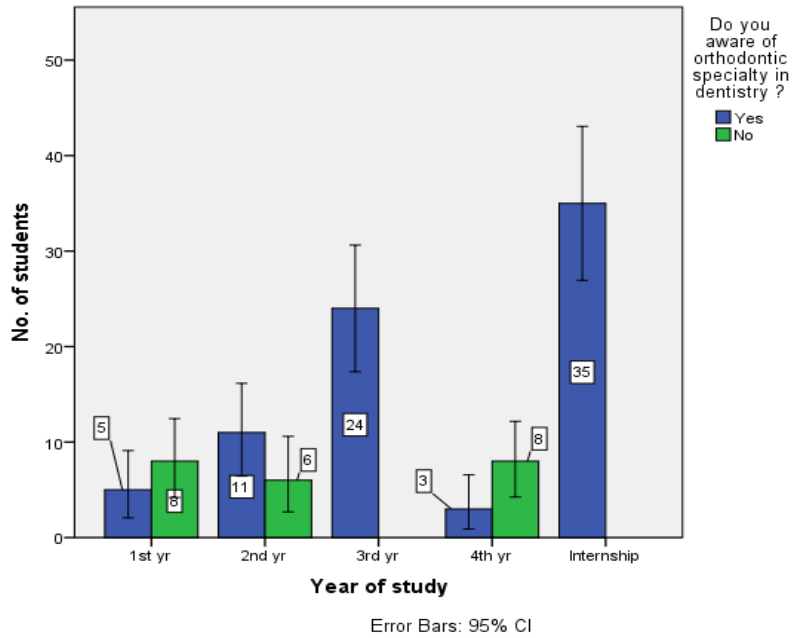
was done in an online forum. A total of 100 validated entries were collected. Data was entered into Microsoft Excel 2007 and analysed in SPSS V20. Associations between categorical variables were determined using Chi-square test. $P < 0.05$ was considered statistically significant.

Results

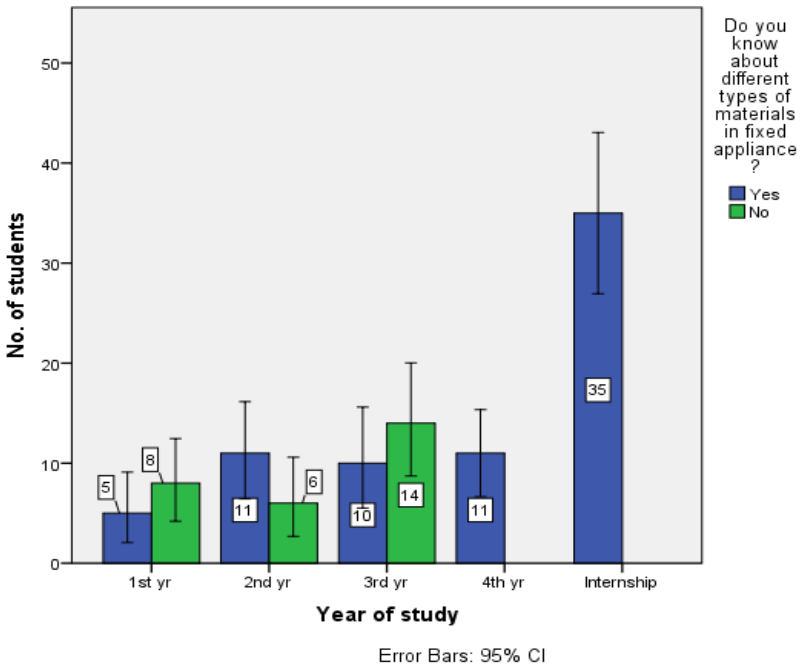
The results shows that 78 % of the participants were aware of orthodontic speciality in dentistry and 86 % of the participants were aware of fixed and removable orthodontic treatment appliances.72 % Of the participants were having knowledge on various types of materials used in fixed orthodontic appliance. 53 % of them know about conventional and smart(Self ligating) technique in orthodontics and 72 % know about clear retainers. 64 % were aware that duration of orthodontic corrections may take upto 18 months. 72 % were aware that additional oral hygiene measures should be taken during the course of orthodontic treatment and retainers should be used after the completion of orthodontic corrections to prevent relapse.



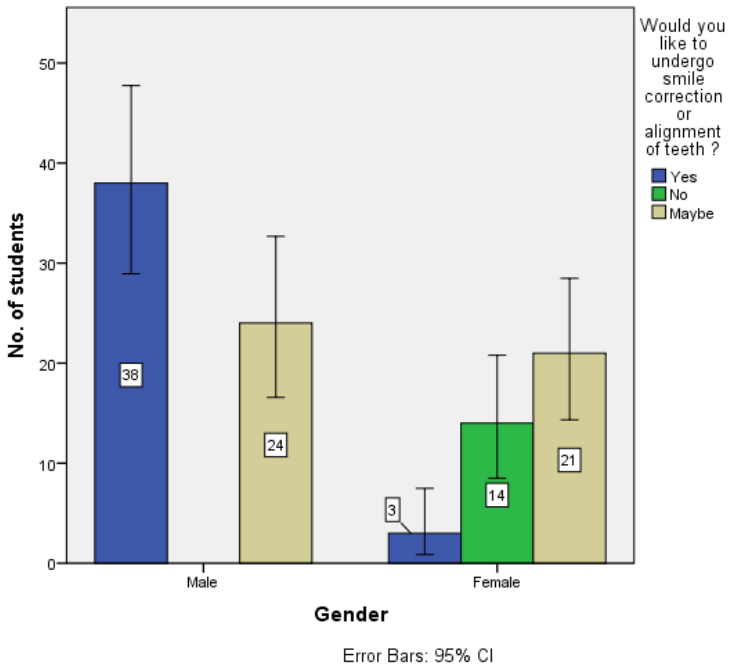
Graph 1 : The bar graph represents the Level of awareness of Fixed and removable orthodontic appliances in Orthodontic treatment among the medical students . The horizontal axis represents the Level of awareness and the vertical axis represents the Number of students.



Graph 2 : The bar graph represents the comparison of Year of study of the students and the level of awareness of the medical students on Orthodontic speciality in dentistry . The horizontal axis represents the Year of study and the vertical axis represents the Number of students . The colour Blue represents Aware and the colour Green represents Not aware.



Graph 3 : The bar graph represents the comparison of the years of study of the students and the level of awareness of the medical students on different types of materials in Fixed appliances . The horizontal axis represents the Year of study and the vertical axis represents the Number of students . The colour Blue represents Aware and the colour Green represents Not aware.



Graph 4 : The bar graph represents the comparison of Gender of the students and the level of willingness to undergo smile correction or alignment of teeth . The horizontal axis represents the Gender and the vertical axis represents the Number of students . The colour Blue represents willing , the colour Green represents Not willing and the colour brown represents partially willing.

Discussion

Orthodontists are concerned with the location of the teeth, the factors that led to their current position, and any future movement that may be required to ensure that a patient's bite is fully functional.There are various options available to straighten the teeth, ranging from conventional braces (with wires and brackets) to invisible braces (clear orthodontic aligners).Awareness is the state or ability to perceive, to feel, or to be conscious. Awareness forms the basis for planning oral health, which is an inseparable part of general health.

Almost 80 % of the participants were aware of orthodontic speciality in dentistry and fixed & removable orthodontic appliance treatment. Around 70 % of the participants were having knowledge on various types of materials used in fixed orthodontic appliances.

More than half of the participants know about conventional and self ligating techniques in orthodontics and almost 70 % of the participants know about clear retainers.

Conclusion

Healthcare providers are primary caregivers for a variety of health-related complaints. The present day medical students are future health care providers. The results show that medical students have good knowledge on orthodontics and fixed appliances and aligners. Furthermore, introduction to the dental sub- specialities , especially orthodontics would enable them to identify and educate on malocclusions and make informed referrals appropriately.

Future Scope

Large study population

To create awareness among the Medical students and professionals on various types of orthodontic appliances and treatments.

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Author Contribution

All the authors contributed equally to the study

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Conflict Of Interest

The author have no conflict of interest

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