

Dental Undergraduate Students View Towards Orthodontic Treatment Based on a Questionnaire Study

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ABSTRACT

Perception and Knowledge of orthodontic treatment are pre-requisite for orthodontic treatment-related behavior. Adolescence is the time when a person attains knowledge including the self-awareness about his or her oral health. Hence if proper knowledge is instilled during this time, it will be effective. The aim of this study was to compare the knowledge and perception of dental undergraduates toward orthodontic treatment. This is a descriptive cross-sectional single-center questionnaire study, carried among 449 dental students of dental college among 1st years, 2nd years, 3rd years, final years, and interns at Chengalpet district aged between 18 and 27 years, respectively. The questionnaires consisted of seven knowledge-based and five perception-based questions related to orthodontic treatment. Each question had three answers "yes" "no" and "don't know." The data were collected through google forms and total responses were calculated. The mean percentage was calculated and compared between 5 years. The results showed that percentage of knowledge and perception for 1st years, 2nd years, 3rd years, final years and interns increases as they progress from 1st year through internship. Overall the study showed that dental students had good knowledge and perception towards orthodontic treatment but varies among years. First years and 2nd years had lesser knowledge compared to 3rd years. Third year had lesser knowledge compared to final years and interns. Interns and final years have more knowledge compared to 1st years, 2nd years, and 3rd years. Subjects who were in lower age group comprising of 1st, 2nd, and 3rd years showed less knowledge and perception compared to higher age group subjects present in final years and interns towards orthodontic treatment.

Keywords: Dental students, Knowledge, Perception

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INTRODUCTION

One of the most common dental problems along with dental caries, periodontal and gingival diseases, is malocclusion.^[1] Malocclusion can be defined as an occlusion with mal relationship between the arches in any of the planes or anomalies in tooth position beyond the normal limits.^[2]

Malocclusion is a common problem that affects the physical, social, psychological and economic well-being. They can also effect the quality of life including function, appearance, and self-confidence.^[3] Malocclusion may cause patient to develop low self-esteem because their facial appearance is affected and thus they feel embarrassed in social environment. In addition, it can affect oral health by increasing the prevalence of dental caries and periodontal diseases as well as temporomandibular disorders.^[4]

The etiology of malocclusion can be genetic or environment and/or combination of both along with various local factors such as oral habits, such as thumb sucking, lip biting, early milk teeth extraction, and tooth anomalies.^[5]

Measuring and recording the prevalence of malocclusion and treatment needs in a population was useful for planning of orthodontic services.^[6,7] Patients often undergo orthodontic treatment to enhance their facial appearances. From orthodontist perspective, the aim is to improve esthetics, function, and balance and other benefits could be an improvement in self-esteem and quality of life.^[8,9] Patients are now more conscious about their facial esthetics and they want the "perfect smile."^[10] However, the success of the treatment might need a positive behavior, cooperation of the patient, and skilled orthodontist.

Perception and knowledge of orthodontic patients about oral health care are a pre-requisite for orthodontic treatment-related behavior. Dental students who are introduced to the world of orthodontics during their under graduation are evaluated about their perception and knowledge toward orthodontic treatment.

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The aim of this study is to compare the knowledge and perception towards orthodontic treatment among dental students of all years (1st, 2nd, 3rd, final years, and interns). The hypothesis is that knowledge and perception towards orthodontic treatment, change as they progress toward their graduation.

MATERIALS AND METHODS

This is a cross-sectional single-center questionnaire study among dental students. The study participants were 449 dental students of the dental college at Chengalpet district. Males were 91 and females were 358 among 1st years, 2nd years, 3rd years, final years, and interns as depicted in Table 1, whose ages were ranging between 18 and 27 years. The study instrument was questionnaires comprising seven knowledge-based and five perception-based questions framed to evaluate knowledge and perception of orthodontic treatment among dental undergraduates. The forms were sent to all undergraduates. All 449 students responded. Each question had three possible answers

“yes” “no” and “don’t know” as depicted in Table 2. The data were collected through google forms. Total responses were calculated and mean percentage was calculated and compared between 5 years.

RESULTS

The results of this descriptive cross-sectional single-center questionnaire study carried among 449 dental students of dental college comprising of 1st years, 2nd years, 3rd years, final years, and interns at Chengalpet district aged between 18 and 27 years as seen in Figure 1, This questionnaire study had three possible answers “yes” “no” and “don’t know”. This study showed that 88% of students felt that aligned teeth are necessary to boost self-esteem and 95% thought that aligned teeth are important for esthetics. 91.1% thought that orthodontic treatment can help maintain good healthy dentition for longer duration of time. Among the students, female respondents were more compared to males as depicted in Figure 2.

Table 1: Distribution of dental students according to age and sex

Students	Males	Females	Total
1 st years	19	66	85
2 nd years	14	86	100
3 rd years	15	57	72
Final years	18	74	92
Interns	25	74	99
Total	95	354	449

Questionnaires

Table 2: Based on knowledge and perception of orthodontic treatment among dental undergraduates

Questions	Subjects n=449		
	Yes %	No %	Don't know %
1. Are you aware of the term malocclusion?	83.7	12.2	4
2. Are you aware that orthodontic treatment can be done in all ages?	78.4	12.7	8.9
3. Do you think orthodontic problems are due to heredity?	54.6	26.9	18.3
4. Can habits like thumb sucking, nail biting, lip biting cause malposed teeth?	91.1	3.3	5.6
5. Do you think teeth can be moved within bone?	71.9	11.4	16.7
6. Are you aware that sometimes few teeth are removed for correcting irregular teeth?	94.9	2.2	2.9
7. Do you think surgeries are done to correct jaw problems?	90.4	4.7	4.9
8. Are you aware that orthodontic treatment at early age may prevent invasive procedure involving surgeries?	83.3	5.3	11.4
9. Do you think irregular teeth can affect function(chewing, speech..)?	87.5	8.5	4
10. Do you agree that well aligned teeth is important for smile and facial appearance?	94.9	3.1	2
11. Do you think aligned teeth are necessary to boost self esteem?	88	7.6	4.5
12. Do you think orthodontic treatment can help maintain good healthy dentition for a longer duration of time?	91.1	3.3	5.6

The results showed that 83.7% were aware of the term malocclusion and 78.4% agreed that orthodontic treatment could be done in all ages, but only 54.6% thought that orthodontic problems are due to heredity, 91.1% thought habits like thumb sucking can cause malposed teeth, 71.9% thought that teeth can be moved within bone.94.9% were aware that extractions are done for correcting irregular teeth, 90.4% were aware that surgeries are done to correct jaw problems,83.3% were aware that orthodontic treatment at early age may prevent invasive surgeries later, and 87.5% thought that irregular teeth can affect function. Thus the total percentage of knowledge and perception for dental undergraduates was 84.16%.

When compared between all the 5 years results showed that percentage of knowledge and perception for 1st, 2nd, 3rd, final years, and interns was 72.58%, 72.51%, 87.94%, 93.63%, and 94.12%, respectively as seen in Figures 3 and 4. Thus the knowledge and perception increased as they progress from 1st year through graduation as depicted in Figure 5. For knowledge-based questions as depicted in Table 2 (Questions 1. To 7) final years and interns had more knowledge compared to 1st, 2nd, and 3rd years as shown in Figure 6. For perception-based questions as depicted in Table 2 (Questions 8–12) 3rd years, final years, and interns had greater perception toward orthodontic treatment compared to 1st and 2nd years as shown in Figure 7.

DISCUSSION

The knowledge and perception toward orthodontic treatment are important because it is the patients who receive treatment and

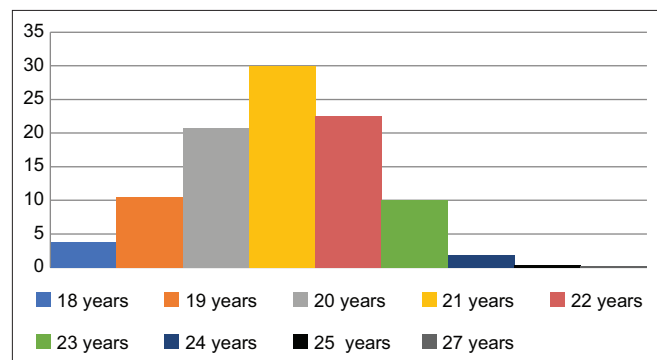


Figure 1: Percentage of age among the students

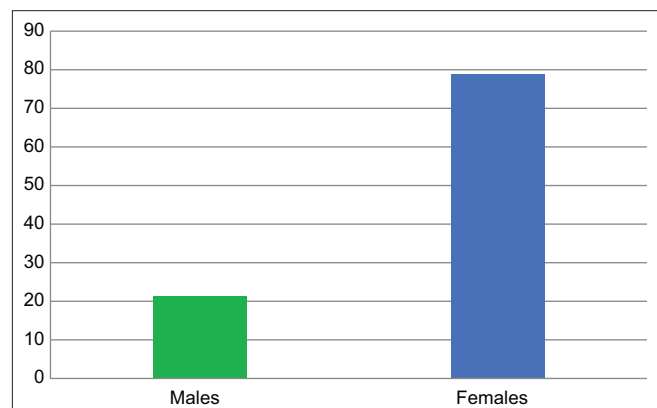


Figure 2: Percentage of males and females

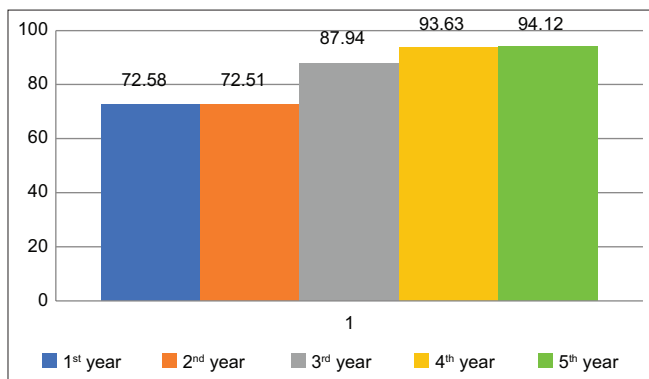


Figure 3: Percentage of knowledge and perception among 5 years

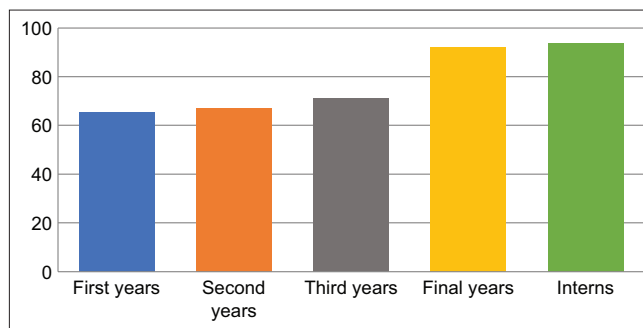


Figure 6: Comparison between groups for knowledge based questions

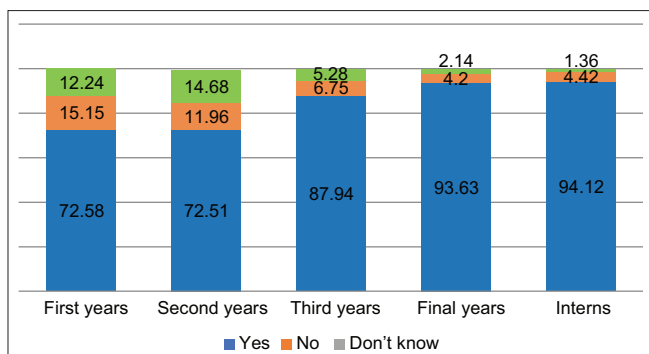


Figure 4: Percentage of comparison of knowledge and perception between 5 years of dental undergraduates towards orthodontic treatment

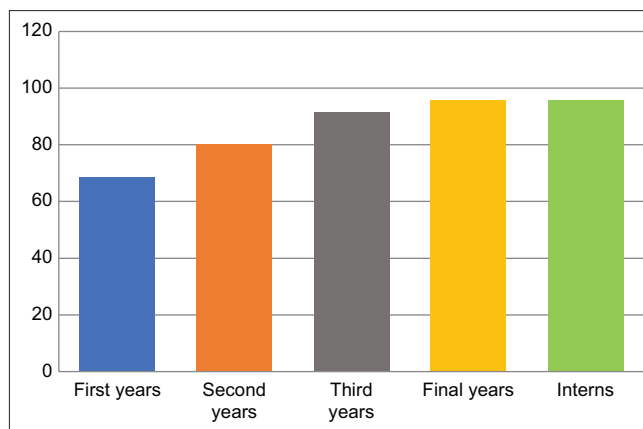


Figure 7: Comparison between 5 years for perception based questions

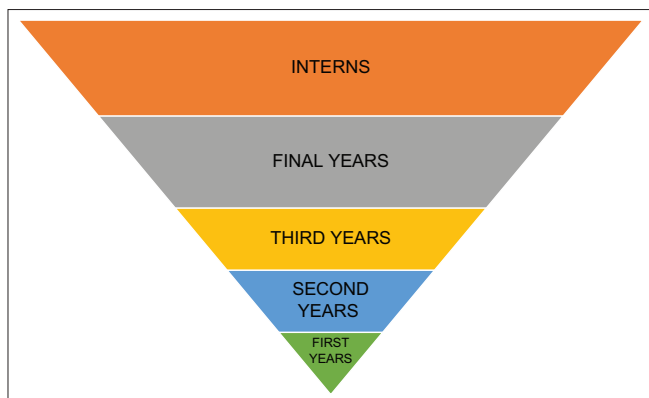


Figure 5: Knowledge and perception increases from 1st year through internship

need to gain satisfaction from improved esthetics and function according to the study by Birkel and Wisth 2000.^[11]

Knowledge and perception about orthodontic treatment have become more prevalent among young population. Malocclusion may adversely affect self-concept, not only in adolescence but also in adulthood.^[12] Adult patients have better perception and practice about orthodontic treatment.^[13,14] This study also had similar results, where interns, final years and 3rd years who were aged between 21 and 27 years had good knowledge and perception towards orthodontic treatment when compared to 1st and 2nd years. Third years were shown to have more knowledge

and perception when compared to final years and interns. Final years and interns had maximum knowledge and perception toward orthodontic treatment.

Patients are now more conscious about their facial esthetics, and they want perfect smile. The perceived need and demand vary with social and cultural conditions of different communities, but the most important motivation to undergo orthodontic treatment is usually the desire to look good, which improves the perception of dental appearance and self-esteem.^[13,15] The aesthetic component was a significant factor in assessing the patients perception of orthodontic treatment need.^[16,17]

The dental undergraduate students should be able to apply the principles of orthodontics in general practice, able to diagnose and formulate treatment plan.^[18] Hence, this study was undertaken to evaluate the knowledge and perception of orthodontic treatment among 5 years of dental undergraduate students and to compare the knowledge and perception between them.

It has been hypothesized that increased experience with and availability of orthodontic service should be translated into difference in esthetics rating and perception of treatment need.^[19] So final years and interns showed greater knowledge towards orthodontic treatment when compared to 3rd, 2nd and 1st years.

As in this study, the female respondents are more 354 (78.8%) compared to males 95 (21.2%), the difference between genders cannot be statistically compared. In this study, 94.9% of students were aware that aligned teeth are important for smile and esthetics which is in accordance with studies by Agarwal *et al.*, (95%) and

Ravah *et al.*,^[20] (95%), Baswaraj *et al.*^[21] About 83.7% were aware of the term malocclusion in this study, which was similar to the study by Shyagali *et al.*^[22] (85.3%) whereas in a study by Iyer *et al.*^[23] they reported 38.6% were aware of the term malocclusion but that study conducted among lay people. Contrastingly, study done in Mysore region of India showed that 65% of non dental students were aware of the term malocclusion. In this study 78.4% agreed that orthodontic treatment can be done in all ages, supporting the study by Shyagali *et al.* (81%).

Knowledge regarding orthodontic treatment at early age may prevent invasive surgeries later, was 83.3% which was similar to Shyagali *et al.* study showing 81.8%. In this study 91.1% thought that habits contributed to malocclusion, which were similar with the results were reported by Ravah *et al.*, that 80% had knowledge about thumb sucking contributed to malocclusion. In Ravah *et al.* study genetics was shown as a cause of malocclusion 40% of students whereas in our study it was 54.8%. A study by Siddegowda *et al.*^[24] Spalj *et al.*^[25] Zaikurulla *et al.*^[26] in school children had moderate level of awareness about dentist and orthodontist. The school children had less knowledge about orthodontic treatment. A study by Almoammar *et al.* in Aseer region among general population concluded that almost most of the respondents were aware about the features of orthodontic treatment.^[27]

A study by Shrestha *et al.*^[28] reported that 85% of orthodontic patients possess good knowledge about orthodontic treatment. In a study by Adegbite *et al.*^[29] among medical students 45.9% had of the term orthodontics and only 20% correctly answered that orthodontics involves malocclusion. Thus the knowledge and perception of dental undergraduates are more, compared to the general population. Interns and final years have increased perception and knowledge towards orthodontic treatment than 1st, 2nd, and 3rd years. First and 2nd years have more knowledge compared to the general population.

The sample size in this study was more when compared to other studies, like Agarwal *et al.*,^[7] Sangeetha *et al.*^[8], and Baswaraj *et al.*^[21].

The limitation of the study was that female population is more compared to the male population.

CONCLUSION

The dental undergraduates should be able to apply the principles of orthodontics in general practice and must be able to recognize and diagnose an orthodontic problem. This study had questionnaires based on knowledge and perception and the study consisted of dental undergraduate students aged between 18 and 27 years with 78.8% females and 21.2% males who were evaluated based on questionnaires comprising seven questions on knowledge and 5 questions on perception.

The study concluded that the subjects had

- Good knowledge and perception towards orthodontic treatment.
 - Females had more knowledge and perception
 - Lower age group students, that is 1st and 2nd years with age ranging from 18 to 20 years had lesser knowledge compared to 3rd years with age ranging from 21 to 22 years. Final years and interns with age ranging from 23 to 27 years had more knowledge and perception compared to 3rd years. Hence the study showed that
1. First and second years had minimum level of knowledge and perception towards orthodontic treatment.
 2. Third years had moderate level of knowledge and perception

towards orthodontic treatment.

3. Final years and interns had maximum knowledge and perception towards orthodontic treatment. And also in this study students ranging from 23 to 27 years had higher knowledge and perception when compared to students in 18 to 22 years.

Further knowledge of dental undergraduates can be improved by training them to recognize the orthodontic problem so that they can formulate treatment plan.

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