



Original Research Article

Comparative evaluation of perceptions regarding orthodontic treatment needs among orthodontist, pedodontist and general dental practitioners in India: A questionnaire based study

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Abstract

Introduction: The purpose of this study was to compare and evaluate the perceptions regarding orthodontic treatment needs among Orthodontist, Pedodontist and General Dental Practitioners.

Aim: To evaluate and compare the perceptions regarding orthodontic treatment needs among Orthodontist, Pedodontist and general Dental Practitioners

Materials and Methods: Orthodontists, pediatric dentists, and general dentists who were members of the Indian Orthodontic Society (IOS), Dental Council of India (DCI), and Indian Academy of Pediatrics (IAP) were mailed three online questionnaires.

The Questionnaire sent to professionals included questions about the type of orthodontic treatment provided by them, referral trends, cases treated orthodontically per year, time spend providing orthodontic treatment, time invested in providing consultation for orthodontic treatment, presumed benefits associated with successful orthodontic treatment

Results: The survey was filled out by 116 orthodontists, 112 pediatric dentists, and 119 general practitioners. Just 71.4% of pediatric dentists and 26.8% of general dentists said they were clinical orthodontic practitioners.

Conclusion: There was statistically significant difference in the perception of pediatric dentists, general dentists, and orthodontists about the advantages of successfully completed orthodontic treatment.

Orthodontist along with Pedodontist reported that successfully treated orthodontic case improves self-esteem, easier teeth cleaning and improves physical attractiveness is more compared to other groups.

Keywords: Comparison, Orthodontist, treatment needs, Pedodontist, General dental practitioners, India, Questionnaire.

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1. Introduction

For professionals to give patients the finest possible treatment, orthodontic challenges must be diagnosed and referred promptly as possible. Orthodontic clinic referrals typically come from general and paediatric practitioners.¹ It is essential that pediatric and general dentists are well informed about the correct diagnosis of early malocclusion problems.¹ Treatment for orthodontics offered by pediatric and general dentist¹ has been described in the literature, although the findings are not quite uniform. This study may also provide dental educators with an insight to the needs of new graduates who intend to practice general dentistry or

pediatric dentistry in India.² At the same time, more adolescents who are aware of the need for orthodontic treatment and more "dentally aware" adults are approaching general dentists.³

Hilgers et al. found that pediatric dentists spent less than 10% of their time providing orthodontic treatment,⁴ and Galbreath et al. similarly noted that general dentists spent less than 10% of their time providing orthodontic treatment.⁵

Even in A 1980 North Carolina study investigated productivity and services performed in 36 pediatric dental offices. This study concluded that relatively little time was

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spent providing orthodontic treatment: it accounted for only 4 percent of the procedures provided and occupied only 8 percent of the total practice time.⁶ Although the gold standard for assessment of orthodontic treatment need is assessment by an orthodontic specialist, it is important to understand the perceptions of other dental professionals as they can impact, directly and indirectly, the utilization and success of orthodontic treatment.⁷

This study will provide opinion of orthodontic treatment needs from non-orthodontists who encounter many patients in need of orthodontic treatments such as, Pedodontist and general dentists.

Guidelines for advanced pediatric dental education have been drawn up to include orthodontic education objectives. The American Academy of Pediatric Dentistry states that during postgraduate education, clinical experience must be provided to develop competency in the diagnosis and treatment of abnormalities of the developing occlusion, as well as in preventive, interceptive and corrective procedures of the permanent dentition.⁸ This will help to build positive perception of Pedodontist about orthodontic treatment need in patients entering the clinic.

It will also provide information regarding referral pattern and average count of patients referred by general dentist and Pedodontist per month.

The purpose of this study is to assess the orthodontic care-related diagnostic abilities, referral patterns, and treatment techniques offered by general and pediatric dentists. To provide a baseline, a comparison with orthodontists was made on the integration of diagnosis and treatment alternatives, as well as the timing of treatments.¹

2. Materials and Methods

An appropriate online google survey form was mailed to members of Indian Orthodontic Society (IOS), Dental Council of India (DCI), Indian Dental Association (IDA) and Indian Academy of Pediatrics (IAP).

One form with similar questionnaire was sent to Pedodontist and general dentists and 2nd form was sent to orthodontist having few different sets of questions.

As specified standard questionnaire form was not available so the one used by the Association of Pedodontics Diplomates⁽⁹⁾ in 1981 used as standard and few changes was made according to need and advancements which has occurred over the duration.

Appropriate institutional review board approval was obtained at the SMBT Institute of Dental Science & Research Center Dhamangaon Nashik.

2.1. Inclusion criteria

1. Members of Dental Council of India (DCI)
2. Members of Indian Dental Association (IDA)
3. Members of Indian Orthodontic Society (IOS)
4. Members of Indian Academy of Pediatrics (IAP)
5. Responses received within 32 weeks of mailing

2.2. Exclusion criteria

1. General dentist, orthodontist, Pedodontist studied or practicing in any country except India
2. Responses received beyond 32 weeks of mailing

1st form filled by general dentist and Pedodontist and 2nd form filled by orthodontist included some basic data filling at start such as,

biographic data such as age, specialty, where and when the dental degree and post-graduation was earned,¹ and then to assess the perception of orthodontic treatment needs by general dentist and Pedodontist question related to certification of clinical orthodontics, number of cases treated orthodontically per year, referrals given by them for further orthodontic treatment and many more as mentioned in the questionnaire below was included.

2nd form filled by orthodontist along with basic information as in 1st form also included questions providing general idea of referrals received from general dentist and Pedodontist per year, distribution of referrals, average age of patients who received referral for orthodontic treatment from general dentist and Pedodontist and appliance given by orthodontists.

Form filled by general dentists and Pedodontist have total of 18 questions and 18th question is having 7 sub-questions which common for all 3 groups.

The participants were then sent the Google Form online.

Participants' email addresses were gathered from the investigators' contact lists, and those who had already completed the forms were asked to forward them to their classmates and coworkers from undergraduate and graduate programs.

Link for questionnaire for general dentist and Pedodontist:

<https://1drv.ms/w/c/9049e74d40a31116/ETpCOR2DvF1Jr8hwxCS1ahgBdnqIRHHuNkPvQQ95ePAD-w>

Link for questionnaire for Orthodontist:

https://1drv.ms/w/c/9049e74d40a31116/EduRr_D2GzNDuOSyR7tMyfoBNWCp1QPEvK8mr_mDjp1Vqg

3. Results

The online google form was sent to 211 general dentists, 189 orthodontists and 198 Pedodontist and was forwarded further to 20 general dentists, 8 orthodontists and 10 Pedodontist.

Starting from January 2024 to September 2024 (8 weeks) with 5 email reminders sent in between.

Out of which 119 general dentists, 116 orthodontists and 112 Pedodontist filled this online google form.

Out of 347 practitioners in total who filled the online google form 229 were female and 118 males.

Showing greater number of female practitioners in all three groups of the study.

Majority i.e. 161 professionals who filled form completed their undergraduate course from Nashik district in Maharashtra then from Dhulia, Pune, Ratnagiri, Mumbai and rest from states Rajasthan, Chhattisgarh, Kolkata, Lucknow, Kerala etc.

Around 53.02% of practitioners are joined to some academic institute and 16.71% are running their own private dental center and rest are in government hospitals and part time private practitioners.

7.5% of general dentist are having clinical certificate in orthodontics and none of the Pedodontist are having any certification for clinical orthodontics.

Most of the orthodontic knowledge received by general dentist was from their undergraduate Institute during course of internship and by attending 1–2-day courses while 65.17% of Pedodontist received most of their knowledge during their post-graduate training program, 16.07% received from 1–2-day courses.

26.8% of general dentists and 71.4% of Pedodontist practice orthodontics. 54.62% of general dentist spent 1-10% & 27.73% spent 11-25% of their office time providing orthodontic treatment, 31.25% of Pedodontist spent 1-10% while 68.75% spent 11-25% of office time providing orthodontic treatment.

General dentist mostly treats permanent dentition orthodontically, while Pedodontist usually treat early and late mixed dentition orthodontically.

Type of orthodontic treatment provided and various appliance used by these three groups vary on large scale.

Minor Tooth Malposition's, Cross bite, Serial Extraction Procedures, Class I Malocclusions, Class II and/or Class III Malocclusion, Deep-bite/Open-bite, Habits are some of the conditions most of the general dentist treat orthodontically during their 1-10% of total office time which they have been investing in providing orthodontic treatment.

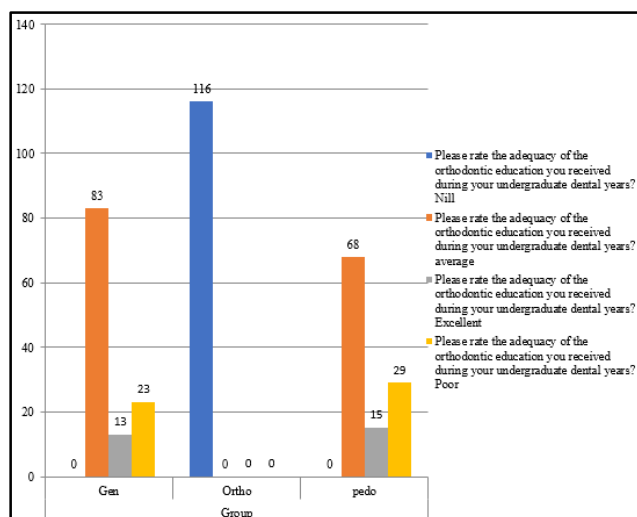


Figure 1: Please rate the adequacy of the orthodontic education you received during your undergraduate dental years?

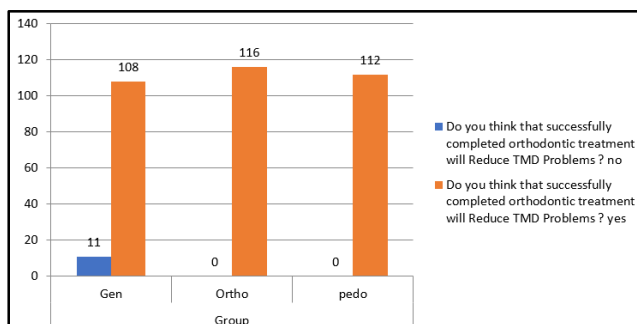


Figure 2: Do you think that successfully completed orthodontic treatment will Reduce TMD problems

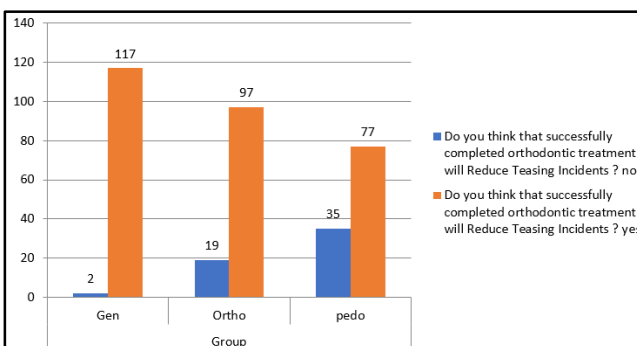


Figure 3: Do you think that successfully completed orthodontic treatment will reduce teasing incidents?

And Cross bite, Serial Extraction Procedures, Habits Management these are some conditions treated by Pedodontist.

29.41% of general dentist uses fixed mechanotherapy modality in treating patient orthodontically.

15.17% of Pedodontist makes use of myofunctional appliance therapy in their orthodontic practice and 16.07% of Pedodontist provides treatment using sectional Fixed

Appliances (2 · 4, etc.), Removable Hawley with auxiliary springs, Palatal Expansion, Functional Appliances.

Answers to remaining questions have been presented in form of table below,

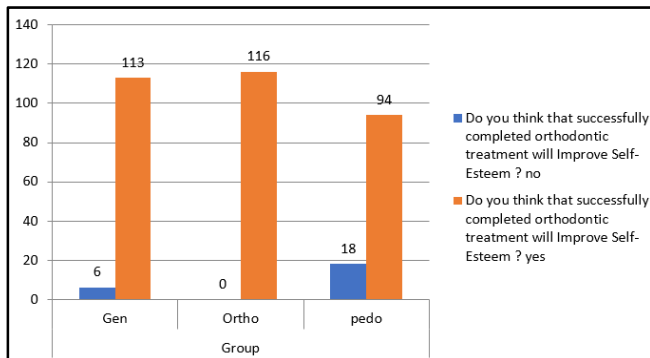


Figure 4: Do you think that successfully completed orthodontic treatment will Improve Self-Esteem?

Results of the Questions in concern with orthodontics perspective from the google form of orthodontic survey are as follows,

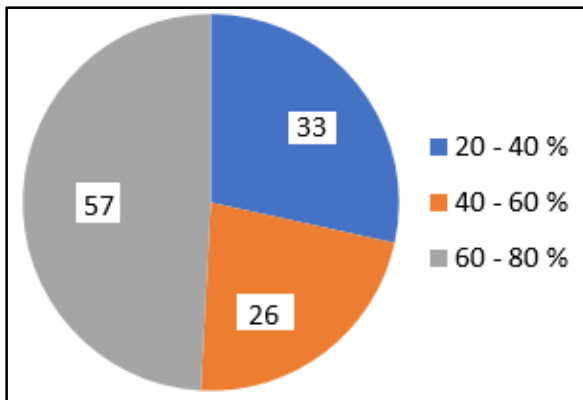


Figure 5: The referrals you receive from pediatric dentist

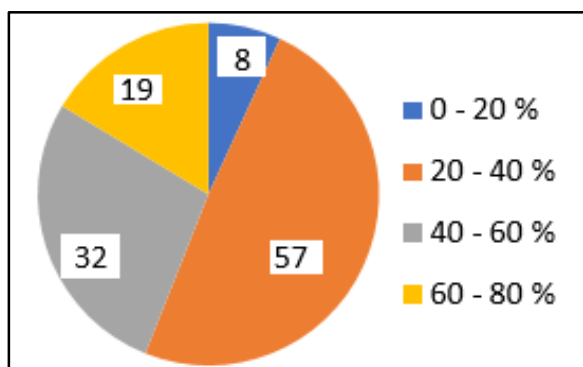


Figure 6: The referrals you receive from general practitioners?

Table 1: Which of the following stages of dental development do you treat orthodontically?

	Frequency	Percent
Early Mixed Dentition	14	12.1
Early Mixed Dentition, Late Mixed Dentition, Permanent Dentition	14	12.1
Late Mixed Dentition	33	28.4
None	9	7.8
Permanent Dentition	24	20.7
Primary Dentition, Early Mixed Dentition, Late Mixed Dentition, Permanent Dentition	22	19.0
Total	116	100.0

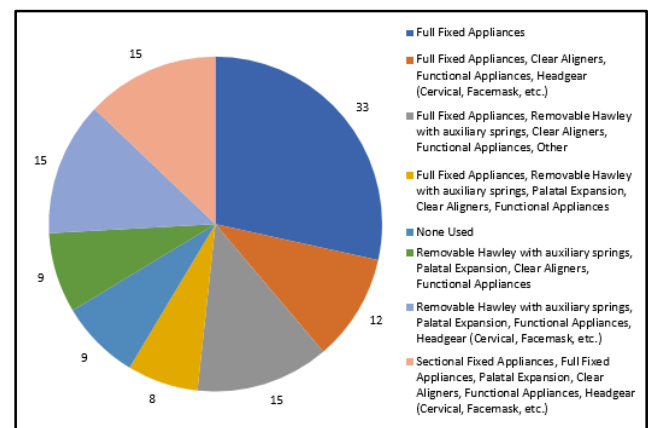


Figure 7: What sort of appliances do you use?

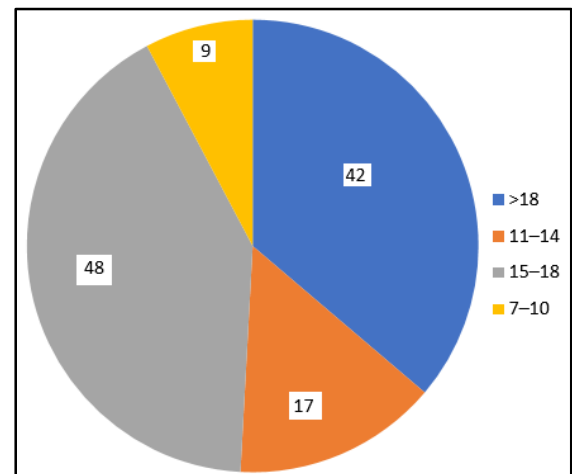


Figure 8: Ages of the patients mostly referred to your office?

4. Discussion

According to Lorne D. Karluk "Orthodontic training in undergraduate dental education is very limited. think more emphasis should be placed on this phase of dentistry so that general dentists would feel more confident about occlusion when they start their practices."¹⁰

In these years change has been seen showing 26.89% of general dentist after receiving most of their orthodontic knowledge in undergraduate courses and completing 1-2 days of clinical orthodontic course are practicing average 1-11 % of their office timing providing orthodontic treatment treating mostly late mixed and permanent dentition.

Referral from 47.89% of general dentist to orthodontist also shows knowledge and counselling they are providing to the patients.

According to the findings of Hilgers et al. and Galbreath et al.,⁵ the malocclusions (cross bites, habit management, and small dental malocclusion) that were primarily addressed by the pediatric dentists and general practitioners in the current study were comparable

General dentist showed more positive perspective about reduction in teasing incident after successfully treated orthodontic case than orthodontist and Pedodontist.

While Pedodontist believed in reduction of periodontal damage and Pedodontist psychosocial variable such as improving social acceptance higher than general dentists.

As stated by Aldrees A, Tash Kandi N, the results of the research indicate that general practitioners, pediatric dentists, and (to a lesser extent) orthodontists frequently have irrational expectations regarding the advantages of orthodontic treatment for dental health.¹

To overcome such presumptions, continuing dentistry education programs should adopt an evidence-based approach.

Somewhat Similar results have been shown by present study as well.

This study was constrained by the challenges we had in achieving a greater response rate.

The response was insufficient to offer a representative sample, even when the professional society sent many reminder emails and the investigators sent personal messages over the period of eight months.¹⁰

According to David Beam, Jean Wright, Elizabeth Kay and Kevin O'Brien, all the GDPs were significantly better than random in selecting patients for orthodontic treatment showing the variations in dentists perception of need for orthodontic treatment.¹¹

In Birte Pahl-Andersen study, Eleven drawings of facial profiles and 11 photographs of dentitions were evaluated by parents, general practitioners of dentistry, and orthodontists for normality and for the necessity for orthodontic treatment showing the parents considered more of the examples acceptable and not requiring orthodontic treatment than did the professional groups.¹²

A significant number of respondents completed the survey and were not included in the data. This might have happened as a result of the survey's length.¹⁻¹³

The current study should be viewed as a prototype for more thorough investigations that examine the interdisciplinary consensus regarding perspective, diagnostic and treatment recommendations.

The findings of these research may have an effect on professional continuing education programs as well as undergraduate and graduate curriculum.¹⁴⁻¹⁶

5. Conclusion

1. There was no statistically significant difference in the opinions of pediatric dentists, general dentists, and orthodontists about the advantages of successfully completed orthodontic treatment.
2. Percentage of general dentist and Pedodontist practicing orthodontics has been increased.
3. General dentist reported "reducing TMD problems" much less frequently than the other two categories.
4. Pedodontist reported "reduction in periodontal disease" is more frequently than the other two categories.
5. Orthodontist reported that successfully treated orthodontic case improves self-esteem, easier teeth cleaning and improves physical attractiveness is more compared to other groups.
6. Larger number of referrals to orthodontist are received from Pedodontist compared to orthodontist than general dentist explaining the efforts they have taken to guide and motivate patient about the need of orthodontic treatment.
7. Patients are referred to orthodontist from general dentists are in late mixed dentition or of permanent dentition from age group of 15-18 years.

6. Limitations

This study was limited by the difficulties we had in attaining a higher response rate because there were very few professionals who finished the survey.

Even after eight months of personal contacts from the investigators and numerous reminder emails from the professional society, the response was not enough to provide a representative sample.

7. Data Availability Statement

All data generated or analyzed during this study are included in this manuscript.

8. IRB Information

The study was reviewed and approved by the Institutional Review Board SMBT IDSR Dhamangaon Nashik.

9. Conflict of Interest

There was no source of financial or non-financial support for the study. Writers don't have any conflicts of interest to disclose.

10. Source of Funding

None.

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