

## Awareness Of Orthodontic Problems Among Paediatricians - A KAP Survey In Dravidian Population

Research Article

Akriti Tiwari<sup>1</sup>, Harish Babu<sup>2\*</sup>

<sup>1</sup> Postgraduate Student, Department of Orthodontics and Dentofacial Orthopaedics, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Tamil Nadu, India.

<sup>2</sup> Reader, Department of Orthodontics, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences (SIMATS), Saveetha University, Chennai 600077, Tamil Nadu, India.

### Abstract

**Background:** Paediatricians are the first specialists to encounter infants and children. They are responsible for a child's overall health which is also inclusive of oral health. There's evidence that children are more likely to visit a medical office than a dental one, so it would be of substantial help if they are able to diagnose orofacial deformities early and refer patients accordingly to intercept the developing deformity.

**Aim:** The aim of this survey was to study the awareness of orthodontic problems among practising paediatricians in South India. Objective: The objective of the survey was to assess whether paediatricians have sufficient knowledge of basic orthodontic principles, whether they examine their patients for orthodontic problems and also ascertain their referral pattern to dentists.

**Materials and Methodology:** This questionnaire-based study was aimed at paediatricians in Chennai. It consisted of open-ended and closed-ended questions. The participants were provided with a questionnaire formulated with a set of 10 multiple choice-based questions. Questions covered routine oral cavity check-up and educational curriculum involving orthodontic principles. Data was gathered from electronic questionnaires. Descriptive statistics were performed to analyze the data. Chi-square test was done to evaluate associations between gender and referral to general practitioners.

**Result:** Chi-square test reported that there was no statistical significant association between gender and their referral to general practitioners ( $p$  value-2.57,  $p > 0.05$ ).

**Conclusion:** There is a need to create awareness among paediatricians about orthodontic problems.

**Keywords:** Orthodontic Knowledge Paediatricians; Reference To Orthodontists; Paediatricians' Role; Oral Health; Orthodontic Principles.

### Introduction

Dentofacial deformities can cause difficulty in speech, damage periodontal health, aesthetics as well as the overall quality of life. To treat such deformities, the role of orthodontics comes into play. Orthodontic treatment not only treats dentofacial deformities but enhances the quality of life too.[1]

Dentofacial deformities such as increased overjet and proclination of the upper incisors, anterior open bite due to habits such as thumb sucking could be an obstacle in functional balance and traumatic to the patient.[2] These issues can be solved by or-

thodontic treatment. Patients who have undergone orthodontic treatment are able to maintain their oral hygiene and periodontal health effectively, hence the decline in rate of carious lesions and periodontitis in them.[3]

Paediatricians are the first specialists to encounter infants and children. They are responsible for a child's overall health which is also inclusive of oral health. There's evidence that children are more likely to visit a medical office than a dental one, so it would be of substantial help if they are able to diagnose early orofacial deformities and refer patients accordingly to intercept the developing deformity.[4] Malocclusions if not paid attention to at the

#### \*Corresponding Author:

Harish Babu,  
Reader, Department of Orthodontics, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences (SIMATS), Saveetha University, Chennai 600077, Tamil Nadu, India.  
Tel: +91-9360575950  
E-mail: harish.ortho@gmail.com

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earliest, can cause deviation in the path of closure leading to facial deformities in a growing child.

There are dental pathology which if not paid attention to at an early age could also lead to malocclusions. Issues such as obesity could lead to obstructive sleep apnoea, an allergy could cause mouth breathing . These issues need an early diagnosis and treatment.[5]

Paediatricians are knowledgeable about oral health-related issues but their exposure to such issues is very insignificant. The education curriculum of oral health-related issues in this speciality is not emphasized.[6, 7]

Hence, the aim of this study was to examine whether paediatricians examine their patients for orthodontic problems, whether they have sufficient knowledge in basic orthodontic principles and whether they refer their patients for orthodontic treatment.

## Materials And Methodology

### Study setting

This electronic questionnaire study consisted of 6 open-ended questions and 4 close-ended questions. It consisted of 10 multiple choice questions. Paediatricians who were at least 5 years into practice were included in the study and paediatricians who were not in practice were excluded.

### Sampling

After applying the inclusion and exclusion criteria, a total of 50 subjects (27 males and 23 females) were sent the questionnaire of this study. The sampling method carried out was randomized sampling and to minimize sampling bias, simple random sampling was carried out.

### Data collection

The questionnaire was sent on their electronic mail IDs. Data col-

lection was carried over a period of two weeks. The collected questionnaires were analysed for completeness of the answers. 5 questionnaires were discarded due to an excessive number of unanswered questions or due to the errors in the questionnaire. The final analysis was based on 45 questionnaires. Thereponses were studied and recorded. Data on age, gender and individual responses to each question were tabulated in a MS excel worksheet.

### Statistical analysis

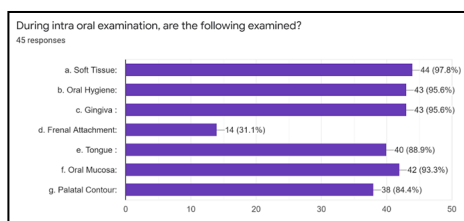
Following data collection, data was statistically analysed. Descriptive statistics using percentage was used to analyse the results. Chi-square test was done using IBM SPSS statistical software (Version 23.0) to determine t association.

## Result And Discussion

Most of the preferences made by the volunteers during the intraoral examination showed that 97.8% assessed the soft tissue. Statistics showed that under hard tissue examination, 97.8% paediatricians evaluated the teeth present in the oral cavity and did not focus a lot on the restored or endodontically treated teeth. 93.8 % of specialists focussed on respiration. On examination of maxilla and mandible, paediatricians paid utmost importance to the shape and symmetry as it could get altered in prematurely-born infants and cleft patients (100 %). 73.7% of the paediatricians recorded the molar relationship of their patients. Most of them didn't record the transverse relationship such as scissor bite, crossbite (86.7%). Only 22.2 % of them were educated about orthodontic principles. 93.3% of them referred their patients to a general practitioner, and 100% paediatricians counselled their patients about food habits. Chi-square reported statistically non-significant association between gender and their referral to general practitioners (p>0.05).

The problems addressed by paediatricians are most likely to be about facial asymmetry such as prognathism, etc. These issues were readily addressed by the paediatricians but other orthodontic anomalies were not commonly referred. Orthodontic problems such as crossbite, delayed eruption, crossbite, etc are less likely to

**Figure 1. Bar chart representing the intraoral examination. Descriptive statistics showing percentages. 97.8 % analyzed soft-tissue in intraoral examination.**



**Figure 2. Bar chart representing the hard tissue examination. Descriptive statistics showing percentages. 97.8% analyzed teeth present in hard tissue examination.**

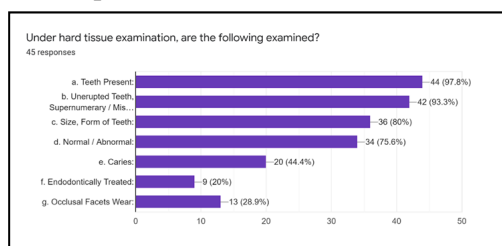


Figure 3. Bar chart representing functional examination. Descriptive statistics showing percentages. 93.3 % analyzed respiration in functional examination.

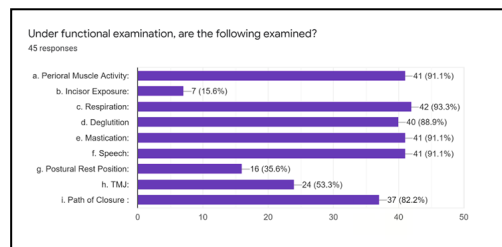


Figure 4. Bar chart representing the shape of maxilla and mandible. Descriptive statistics showing percentages. 100% analyzed the shape of the maxilla and mandibular arch.

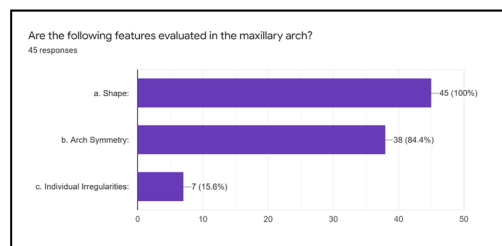


Table 1. Table representing the association between gender and their evaluation of shape of the arch.

	Value	df	Asymptotic significance
Pearson's chi-square	0.065	1	0.799

Figure 5. Bar chart showing the evaluation of the anteroposterior relationship. Descriptive statistics showing percentages. 73.7% analyzed the molar relationship.

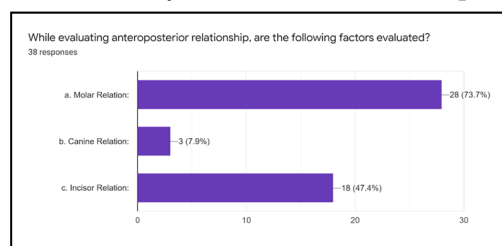


Figure 6. Pie chart showing the evaluation of the transverse relationship. Descriptive statistics showing percentages. 86.7% did not evaluate the transverse relationship of maxilla or mandible.

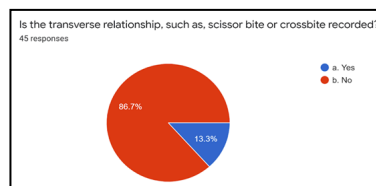
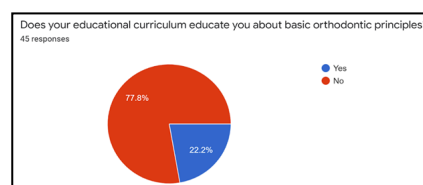


Table 2. Representation of the association between gender and their evaluation of transverse relationship of the jaws.

	Value	df	Asymptotic significance
Pearson's Chi-square	0.538	1	0.463

Figure 7. Pie chart representing the educational curriculum about orthodontic principles. Descriptive statistics showing percentages. 77.8% did not have an educational curriculum about orthodontic principles.

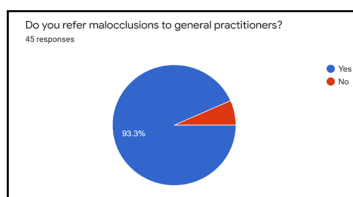


get referred.[8]

A study conducted by Marianna et al concluded that there was variability regarding orthodontic knowledge among paediatricians.

Although the majority were aware of the importance of examination of the oral cavity, they did not have the appropriate knowledge to perform a full and systematic screening for orthodontic problems. The probability of referral was different for the

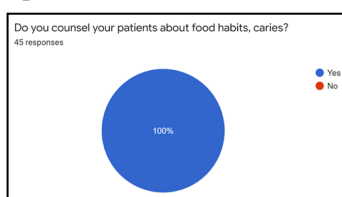
**Figure 8. Pie chart representing paediatricians referring patients to a general practitioner. Descriptive statistics showing percentages. 99.3% practitioners referred their patients to general practitioners.**



**Table 3. Representation of the association between different groups and their exposure to orthodontic curriculum.**

	Value	df	Asymptotic significance
Pearson's Chi-square	1.42	1	0.233

**Figure 9. Pie chart representing paediatricians counselling patients about food habits. 100% practitioners counselled their patients about food habits.**



**Table 4. Depicts chi-square to evaluate the association between gender and their referral to general practitioners.**

	Value	df	Asymptotic significance
Pearson chi-square	2.57	1	0.109

various orthodontic anomalies.[8]

Another study conducted by Krol et al concluded that the level of oral health training for paediatricians is inadequate to provide paediatricians with the competencies required for the provision of quality oral health care to children.[9]

A National survey conducted by Charlotte et al reported that many paediatricians reported barriers to fully implementing preventive oral health activities into their practices. Paediatricians and dentists need to work together to improve the quality of preventive oral health care available to all young children.[10] Brickhouse et al concluded that the majority of paediatricians are not advising the patients to report to the dentist by 1 year of age. There's an increased infant oral health care education in the medical communities.[11]

Similarly, gender and referral to general practitioners showed no statistically significant association ( $p > 0.05$ ) but it can be concluded that females are more likely to refer their patients to general practitioners. Age group although did not show any statistically significant association ( $p > 0.05$ ) with exposure to orthodontic curriculum but it was observed that the age group of 36-45 years had higher exposure to orthodontic curriculum.

It can be assumed that paediatricians have limited knowledge about basic dental health leading to a decreased screening of oral cavity which could cause significant orthodontic problems later in life.[12] It is advisable for paediatricians to screen the oral health of the patients as they develop a rapport with them from an early age. They have the chance to advise, guide, and refer as deemed necessary.

The small sample size is a limitation of this study.

### Conclusion

Within the limitation of this study, it can be concluded that there is a need to create awareness among paediatricians about orthodontic problems.

### Acknowledgement

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