



AWARENESS ON ORTHODONTIC PROBLEMS AND REFERRALS AMONG PEDIATRICIANS IN GUJARAT, INDIA

Dr. Dhruval Thakkar*

Post graduate student, Department of orthodontics and dentofacial orthopaedics, Narsinhbhai patel dental college, Visnagar. *Corresponding Author

Dr. Ajay Kubavat

Professor and Head, Department of orthodontics and dentofacial orthopaedics, Narsinhbhai patel dental college, Visnagar.

Dr. Rahul Bachwani

Assistant professor, Department of orthodontics and dentofacial orthopaedics, Narsinhbhai patel dental college, Visnagar.

ABSTRACT

Introduction: Orthodontics promotes functions, aesthetics, and sometimes periodontal health by correcting dentofacial deformities. Major part of the orthodontic patients is formed by children. Therefore pediatricians can play a major role by referring child patients at early age to orthodontic offices. **Materials and methods:** A questionnaire consisting 17 questions was prepared and circulated to pediatricians across Gujarat state via google forms. 800 pediatricians were approached via various social media and whatsapp groups to fill up the google forms. We got 262 complete responses to consider in the study. **Results:** Large number 98% were aware about orthodontics as a branch of dentistry and 63.7% answered a correct what orthodontics involve. Knowledge of pediatricians varied from 74% to 91% about orthodontic problems. The cause of referral to orthodontic offices considered by pediatricians was more for crowding and crossbite (95%) and less for missing teeth (80%) and TMJ problems (82%). **Conclusion:** Results of this study concludes that paediatricians consider that they should refer the children with orthodontic problems to the orthodontic clinics but the actual referrals were very less. The cause behind this may be lack of knowledge and awareness about the subject.

KEYWORDS : Awareness, Pediatricians, Orthodontics, Referrals.

INTRODUCTION

Orthodontics promotes functions, aesthetics, and sometimes periodontal health by correcting dentofacial deformities, and it improves overall oral-health related quality of life.^[1] Functional improvement with reduction in trauma and reduction in speech problems can be achieved by orthodontic correction. Cleaning of teeth is more effective after orthodontic treatment because of relieved crowding which may lead to lower risk of dental caries and periodontal diseases.^[1-4]

Major part of the orthodontic patients is formed by children. Overall health of a child or infant is assessed by a pediatrician and oral health cannot be excluded from that. Therefore pediatricians can play a major role in preventing and intercepting malocclusion in children by referring them to a dentist or an orthodontist. In developing countries like India, patients visit a medical office more often than a dental clinic and these kind of referrals can be very helpful for the patients if done at early age.

The aim of this study was to evaluate the knowledge of pediatricians in Gujarat about orthodontic problems and related conditions and awareness to refer the patients to an orthodontic office after assessment of these problems.

MATERIALS AND METHODS

A questionnaire consisting 17 questions was prepared and circulated to pediatricians across Gujarat state via google forms. 800 pediatricians were approached via various social media and whatsapp groups to fill up the google forms. We got 262 complete responses to consider in the study.

The survey form consisted 17 questions divided in 4 parts: The first part (6 questions) contained demographic characteristics of pediatricians like gender, age, years at work and patients per day. The second part (4 questions) examined the basic knowledge about orthodontics and the examination pattern of the pediatricians, whether they examine the oral cavity, mucosa, tongue, gingiva, teeth and their position and jaw positions. The third part (3 questions) was to examine the role of pediatricians in identification of orthodontic problems and

related conditions like crowding, spacing, deepbite, prognathism, retrognathism, Asymmetry of face and teeth and other various malocclusions. The last part (4 questions) of the survey was about the reasons of orthodontic referral considered by them (e.g. Early tooth loss, difficulty in biting, jaw deviation, various malocclusions, asymmetry, mouth breathing, teeth grinding, cleft lip and palate, sleep apnoea, various TMJ problems etc.).

The informed consent was not taken for this cross-sectional study because of the anonymous and voluntary nature of the study. The study was conducted between March 2020 and June 2020 (4 months).

RESULTS

Majority of the responses we got were from males (163, 62.2%), whereas 37.8% were females. 42.2% participants were of age group 35-44 years and 35.6% were of 25-34 years. Only 3.3% (9) participants were of 55 years or above. Majority (85.9%) of them were practising in private offices.

Large number 98% were aware about orthodontics as a branch of dentistry and 63.7% answered correct what orthodontics involve. Most number of respondents heard about orthodontics during their graduate/post-graduate program. Majority of them (94.2%) answered yes for oral cavity examination during routine clinical check-up. The elements of oral cavity examined by them are given in table 1.

Table 1. Responses given by participants for examination of oral cavity elements.

Examination of the elements	Yes N (%)	No N (%)	Total N (%)
Oral cavity	217 (83)	45 (17)	262 (100)
Mucosa	199 (76)	63 (24)	262 (100)
Tongue	212 (81)	50 (19)	262 (100)
Teeth	136 (52)	126 (48)	262 (100)
Gingiva	131 (50)	131 (50)	262 (100)
Teeth position	128 (49)	134 (51)	262 (100)
Jaw position	120 (46)	142 (54)	262 (100)

Most number of respondents (96%) answered yes for the question about role of pediatricians in identification of malocclusion and almost 95% participants felt the need of examining occlusion during the routine examination of tonsils and pharynx. Knowledge of pediatricians varied from 74% to 91% about orthodontic problems. 74% (193/262) pediatricians had knowledge about asymmetry of face is considered under orthodontic problem while 91% of them were aware about crowding (irregularity of teeth). (Table 2).

Table 2. Responses given by participants for knowledge of orthodontic problems and related conditions.

Examination of orthodontic problems	Yes N (%)	No N (%)	Total N (%)
Crowding	238 (91)	24 (09)	262 (100)
Spacing	233 (89)	29 (11)	262 (100)
Crossbite	236 (90)	26 (10)	262 (100)
Deepbite	223 (85)	39 (15)	262 (100)
Missing teeth	196 (75)	66 (25)	262 (100)
Prognathism	212 (81)	50 (19)	262 (100)
Retrognathism	228 (87)	34 (13)	262 (100)
Oral destructive habits	230 (88)	32 (12)	262 (100)
Asymmetry of face	193 (74)	69 (26)	262 (100)
TMJ problems	204 (78)	58 (22)	262 (100)

Almost all of the participants (98%) answered yes to the question about the need to refer children with malocclusion to an orthodontist. 72.8% of them were aware about the role of an orthodontist in management of obstructive sleep apnoea while 79.6% of them were aware about the role of orthodontists in management of cleft lip and palate. Responses of participants about the reasons they considered for orthodontic referral are shown in table 3.

Table 3. Responses given by participants about the reasons they considered for orthodontic referral.

Reasons for orthodontic referrals	Yes N (%)	No N (%)	Total N (%)
Early tooth loss	228 (87)	34 (13)	262 (100)
Delayed eruption	230 (88)	32 (12)	262 (100)
Over-retained deciduous tooth	233 (89)	29 (11)	262 (100)
Difficulty in biting	244 (93)	18 (07)	262 (100)
Sound from TMJ	214 (82)	48 (18)	262 (100)
Jaw deviation	220 (84)	42 (16)	262 (100)
Face / Teeth asymmetry	217 (83)	45 (17)	262 (100)
Mouth breathing / Snoring	225 (86)	37 (14)	262 (100)
Crowding	249 (95)	13 (05)	262 (100)
Crossbite	249 (95)	13 (05)	262 (100)
Overbite	228 (87)	34 (13)	262 (100)
Missing teeth	209 (80)	53 (20)	262 (100)
Spacing	241 (92)	21 (08)	262 (100)
Grinding at sleep / Clenching	236 (90)	26 (10)	262 (100)
Prognathism	228 (87)	34 (13)	262 (100)
Retrognathism	225 (86)	37 (14)	262 (100)
Cleft lip and palate	225 (86)	37 (14)	262 (100)

DISCUSSION

Most people think that orthodontics is associated with “braces” only but the truth is that <50% cases require complete corrective orthodontic care while 10% require only observation and preventive care, 20% require interceptive orthodontic management and 25% cases require partial orthodontic correction. Therefore in these almost 55% cases medical practitioners especially pediatricians can help patients by referring them at early age to prevent complete orthodontic correction at later stage because in India people at this age visit a medical office more often than a dental office. However, very few patients coming to orthodontic clinics are referred by a medical practitioner.^[6]

In our study, we found that referrals to orthodontists by

paediatricians are more likely for the orthodontic problem like crowding, crossbite and difficulty in biting and less referrals are given for missing teeth and more complex problems like TMJ problems and facial asymmetries. These results are contradictory to a similar survey done in which they found high referral frequencies for prognathism and facial asymmetry and less referrals for crossbite, overbite, mouth breathing-snoring and nocturnal grinding.^[1]

In a similar study done in Haryana state they found less referrals to orthodontists for the reasons like crossbite, crowding and protruded upper teeth and more referrals found with the reasons like destructive oral habits. These results are contradictory to our study where we found more considerations of referrals for crowding and crossbite like problems.^[5]

In a national survey done by American Academy of Pediatrics with 1618 post-residency members they found that 90% responders feel they should examine the oral cavity and teeth but only 54% of them were actually examining teeth of patients with age-group 0-3 years. Similarly in our study majority of the responders claimed that they examine oral cavity of the patients during routine clinical examination.^[7]

In a similar study including general dentists, pediatric dentists and paediatricians, they found that only 5% among responding pediatricians refer patients below 1 year to the dentist. It can be assumed by the results of various studies that the knowledge of paediatricians is limited in the field of basic dental education which leads to low confidence levels for the screening of oral cavity.^[7,8]

Limitation of this study is that it is a questionnaire type cross sectional study so responder bias is very common in these studies. Some responders may have answered the questions more favourably to appear more comprehensive in their examination pattern than what they actually do in their examination. This study reflects the attitude of the responders on a specific time and may differ in general. The non-responders may have different opinions regarding the questions of the study. Another limitation of the study is recall bias because of the type of the study.

Conclusion

Although pediatricians of the state have little knowledge about orthodontics and the results of the study concludes that they consider they should examine oral cavities and orthodontic problems of the patients and refer them to orthodontists to prevent development of malocclusion, the actual referrals from paediatricians to orthodontic offices are very less. To increase the knowledge and referrals there is a need to include some orthodontic knowledge in pediatric residencies. Spreading awareness among paediatricians about orthodontics may help children prevent complex malocclusions if referred at early age.

References

1. Koufatzidou M, Koletsis D, Basdeki EI, Pandis N, Polychronopoulou A. Pediatricians' awareness on orthodontic problems and related conditions—a national survey. *Progress in orthodontics*. 2019 Dec 1;20(1):33.
2. Abanto J, Carvalho TS, Mendes FM, Wanderley MT, Bo necker M, Raggio DP. Impact of oral diseases and disorders on oral health-related quality of life of preschool children. *Community Dent Oral Epidemiol*. 2011;39:105-14.
3. Wagner Y, Heinrich-Weltzien R. Risk factors for dental problems: Recommendations for oral health in infancy. *Early Hum Dev*. 2017;114:16-21.
4. Hassan AH, Amin HE-S. Association of orthodontic treatment needs and oral-health quality of life in young adults. *Am J Orthod Dentofacial Orthop*. 2010;137(1):42-7.
5. Sharma R, Kumar S, Singla A, Kumar D, Chowdhary S. Knowledge, attitude and practices of pediatricians regarding malocclusion in Haryana, India. *Journal of Indian Association of Public Health Dentistry*. 2016 Apr 1;14(2):197.
6. Graber TM, editor. *Preventive orthodontics*. In: *Graber's Textbook of Orthodontics, Basic Principles and Practice*. 3rd ed. Philadelphia: Elsevier; 2001. p. 627-40.
7. Lewis CW, Boulter S, Keels MA, Kril DM, Mouradian WE, O'Connor KG,

- Quinonez RB. Oral health and paediatricians: results of a national survey. *Acad Pediatr*. 2009.
8. Brickhouse TH, Unke JH, Kacitis I, Best AM, Davis RD. Infant oral health care: a survey of general dentists, pediatric dentists and pediatricians in Virginia. *Pediatr Dent*. 2008;30(2):147-53.
 9. Moorrees CF, Sisson WR, Peckos PS, Christie RG, Baldwin DC Jr. Need for collaboration of paediatrician and orthodontist. *Paediatrics* 1962;29:142-7.
 10. Tsamtsouris A, Gavris V. Survey of pediatrician's attitude towards pediatric dental health. *J Pedod* 1990;14:152-7.