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ORIGINAL ARTICLE

Awareness of Orthodontic Related Conditions among Pediatricians

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ABSTRACT

Objective: This study aimed to assess awareness of basic orthodontic principles among pediatricians.

Study Design: Quantitative design involved descriptive statistics such as frequency distributions.

Place and Duration of Study: Study was conducted at Orthodontic Department of Multan Medical and Dental College.

Material and Methods: A questionnaire-based survey of pediatricians from different hospitals of Punjab, Pakistan was statically interpreted by using Stata software.

Results: Of 199 pediatricians, female responders predominated (0.014). Age group between 26-35 years showed maximum (80%) referral and age group over 55 year old showed minimum (9%) referral to orthodontists. Responses in relation to orthodontic referral, orthodontic knowledge, experience with orthodontists and orthodontic role were 75%, 2%, 43% and 95% respectively.

Conclusion: Pediatricians and orthodontists need to be vigilant in orthodontic screenings along with inclusion of orthodontic courses in pediatric residency curriculum.

Key Words: *Orthodontic knowledge, Reference to orthodontists, Pediatrician's role, Orthodontic principle.*

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INTRODUCTION

Awareness is a state of being aware of something. Pediatricians are the motivating factors to influence the need of orthodontic treatment among children and adolescents. Many children do not get their treatment at right time because their parents do not consider malocclusion as a dental problem.[1] Orthodontics is playing vital role to improve quality of life. Prevalence of malocclusion in Brazil ranged from 75% to 87%.[2,3] Orthodontic treatment is successfully managing conditions of malaligned teeth, resulting in reduced risk of trauma to maxillary incisor and gingival tissue.[4-8] Speech problem have been associated with dentofacial deformities.[7] Parents realize the need of orthodontic treatment when their children get teased by their peers. A study on psychosocial attractiveness revealed that persons with increased public self-consciousness are rated as more attractive by others.[9] Oral hygiene maintenance becomes easy after getting orthodontic treatment, resulting in good oral hygiene.[9]

Oral health assessment is the responsibility of pediatrician while examining their patients.[10] Evidence has shown that young children visit medical officer more frequently than dentists.[11] Therefore, pediatricians can play important role to improve the treatment outcome. Studies have shown that general and oral health is dependent upon the financial status of families.[12-14] Pediatricians may spread this awareness of oral hygiene and importance of orthodontic treatment during their visits and camps at underprivileged areas.

Posterior cross-bite frequently occurs with malocclusion of the primary dentition among caucasian children. It has been found that untreated unilateral cross-bites may lead to lateral mandibular displacement.[14]

Physiological transverse occlusion and skeletal equilibrium is established by treating cross-bites during early mixed dentition.[15] Orthodontic treatment at an early age not only improves esthetics but also self- esteem of children.[7, 9,15]

It is expected that pediatricians' knowledge about oral health diseases is fulfilling their duties as professionals but curriculum of pediatric specialty does not incorporate dental education.[11,16]

The aim of this study was to assess the awareness of basic orthodontic principles among pediatricians.

MATERIAL AND METHODS

This study was initiated after the approval of IRB committee at Orthodontic Department, Multan Medical and Dental College, Pakistan (IRB/MDC/-18-04-2020). Sample size was collected in six months.

Sample size was calculated by using following equation n $(Z_{1-\alpha})$ 2(P (1-P)/d^2), considering confidence interval of 95% and chance of error is 5%. Questionnaire was filled by pediatricians of different hospitals. Consultants were included and PG trainees or general practitioners were excluded while collecting data. Format used was of Paper and Pencil**.** Pediatricians were assessed for their knowledge to register orthodontic anomalies such as teeth position, dental crowding, missing teeth and parafunctional habits. Lastly, their personal orthodontic experience, practice of referring patients to orthodontists, orthodontic knowledge and their views regarding orthodontic role was recorded.

Stata version 15.1 software was used for statistical analysis.

RESULTS

Demographics are showed in table 1. Female responders predominated. Significant difference was found between genders (p 0.014). Considering referral pattern, significant difference was found between age groups. Age group between 26-35 years showed maximum (80%) referral to orthodontists whereas, pediatricians over 55 year old showed minimum (9%) referral pattern

TABLE 1: Demographic profile of study participants

Referral to Orthodontist	No		Yes		Total		p Value
	N	%	N	%	N	%	
Gender							
Male	28	34	54	66	82	100	0.014
Female	22	19	95	81	117	100	
Total	50	25	149	75	199	100	
Age							
26-35	25	31	55	69	80	100	
36-45	21	30	50	70	71	100	
46-55	04	10	35	90	39	100	0.014
Over 55	00	00	09	100	9	100	
Total	**50**	**25**	**149**	**75**	**199**	**100**	

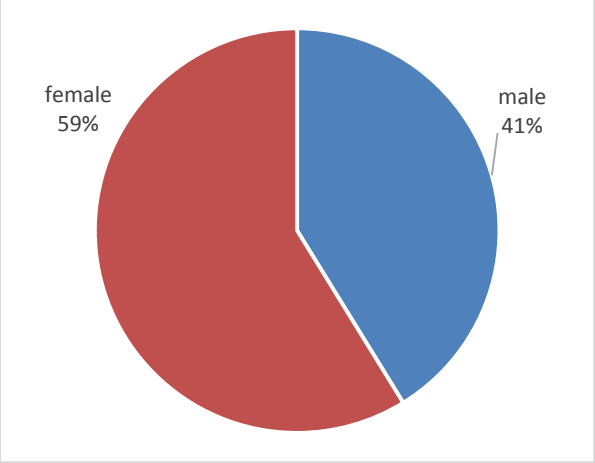

Fig 1: Gender Distribution of Pediatricians who participated in study

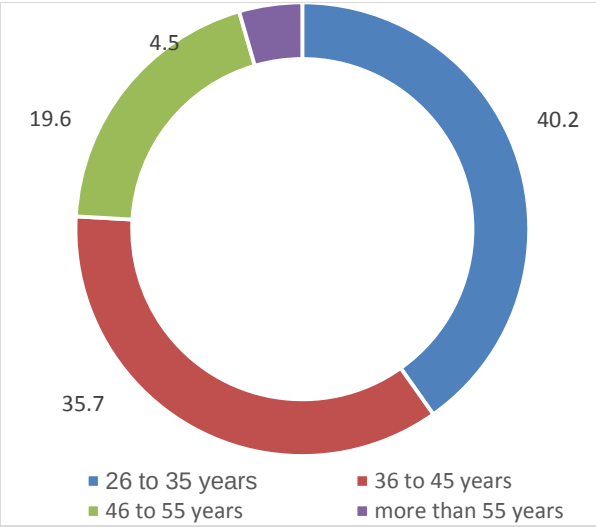

Fig 2: Age Distribution of the participating Pediatricians

Assessment of extra oral examination is presented in table 2. Pediatricians examined face form (93 %), Jaw position (72%), Jaw prognathism (58%) and jaw retrognathism (56%).

TABLE 2: Response of pediatricians in relation to extra oral examination

Extra Oral Examination	No N (%)	Yes N (%)
Face Form	13 (7)	186 (93)
Jaw Position	56 (28)	143 (72)
Jaw Prognathism	83 (42)	116 (58)
Jaw Retrognathism	87 (44)	112 (56)

In table 3, pediatricians examined teeth position (68%), dental crowding (77%), missing teeth (67%) and 90% for parafunctional habits.

TABLE 3: Response of pediatricians in relation to orthodontic problems

Orthodontic problems	No N (%)	Yes N (%)
Teeth Position	63 (32)	136 (68)
Dental crowding	45 (23)	154 (77)
Missing Teeth	66 (33)	133 (67)
Parafunctional Habits	19 (10)	180 (90)

In table 4, their responses in relation to orthodontic referral, orthodontic knowledge, experience with orthodontics and orthodontic role (75%, 2%, 43% and 95% respectively) are given.

TABLE 4: Response of pediatricians in relation to orthodontic referral

Referral related	No N (%)	Yes N (%)
Preference for referral	50 (25)	149 (75)
Orthodontic knowledge	195 (98)	4 (2)
Experience with orthodontics	113 (57)	86 (43)
Orthodontic role	9 (5)	190 (95)

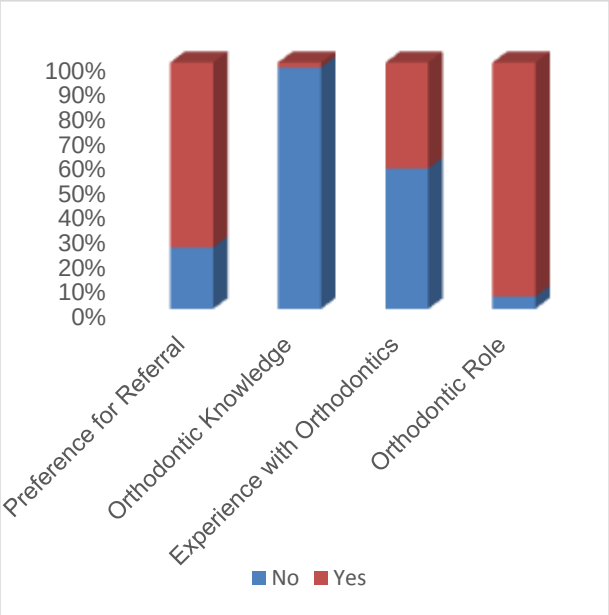

Fig 3: Response of pediatricians to orthodontic referrals

DISCUSSION

The importance of orthodontic information package towards awareness was brought into limelight by Anderson, et al.[17] According to Osagh, et al.[18] leaflets can spread awareness of importance of orthodontic treatment for children among parents.

In this study, demographic characteristics showed significant difference between genders and ages of pediatricians. This is similar to study conducted by Koufatzidou et al.[19] Female responders predominated male responders. Females referring more patients might be because they are keen observers regarding esthetics and facial profiles. Maximum pediatricians are of 25 to 35 years old who are referring their patients to orthodontists might be because of more awareness regarding orthodontic treatment.

Early orthodontic treatment can be started at 7 years of age according to American Association of Orthodontics. Myofunctional appliance is used to correct most of the growth during mixed dentition period. However, pediatricians may help parents by diagnosing and referring their children to orthodontists at right time.

Variability in orthodontic examination was noticed. Readily examined conditions were face form and parafunctional habits with high referral frequencies of 93% and 90% respectively. Results of parafunctional habits of our study agrees with studies in which 85% of Albanian population reported parafunctional habits with severe need of orthodontic treatment.[20,21] In this study, orthodontic problems like jaw prognathism and retrognathism are less likely referred by pediatricians. Orthodontic treatment at an early age should be considered.[22,23]

In this study, 75% of pediatricians preferred referring their patients to orthodontists which is different from studies conducted by Brickhouse et al.[24] in which only 5% of pediatrician's recommended dental visit. In our study 43% pediatricians had their experience with orthodontists which might be because of their own orthodontic problem or any other family member needed treatment. 95% of pediatricians in our study believe that orthodontists play an important role in our society.

This study reported that 2 % of pediatricians have got basic orthodontic knowledge which is similar to studies showing deficiencies in basic dental education among pediatricians.[25]

Limitation of this study is responder and recall bias which is a common problem in studies involving questionnaires

CONCLUSION

Our study concludes that:

1. Orthodontic examination practice among pediatrician is greatly variable.
2. Orthodontists and pediatricians need to work together for the benefit of patients.
3. There is a dire need of inter professional seminars and interactions along with inclusion of orthodontic courses in the curriculum of pediatric residency.

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