Asian Pac. J. Health Sci., 2014; 1(4): 329-334 e-ISSN: 2349-0659, p-ISSN: 2350-0964

Knowledge and awareness of malocclusion among rural population in India

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ABSTRACT

Malocclusion is problem since historical age. But people's awareness and perception about the problem varies with their geographical location and cultural background and their knowledge. The problem seems to be more acute in developing countries like India and that too in rural area.
Objectives: This study is undertaken to assess the awareness about problem of malocclusion and treatment seeking behaviour among the patients of rural area attending in department of Orthodontics and Dentofacial Orthopedics of Rural Dental College, PIMS, Loni. **Methods:** The present cross-sectional study was carried out in the Department of Orthodontic, Rural Dental College, PIMS, Loni. A total of 120 participants who were suffering from malocclusion and came for dental treatment were the study population. **Result:** Most of the subjects in the study are of rural area and they don't have knowledge about the cause of the malocclusion i.e. genetic, caries, tooth loss and diet but 65% subjects know the habits can cause the malocclusion. But on the other side these rural people (92%) areaware about aesthetic problem of malocclusion. **Conclusion:** Prevention is always better than cure. We can prevent the malocclusion by making the rural population aware about the causes and risk factors of the malocclusion. It is suggested that treatment of malocclusion should be instituted as early as possible for improvement of facial appearance and body image.

Key words: Awareness, Malocclusion, Aesthetic problem, Attitude

Introduction

Any deviation from normal occlusion is malocclusion that means developmental anomalies, crowded, irregular and protruding teeth collectively termed as malocclusion, have been a problem since antiquity, and attempts to correct these disorders go back to at least 1000 BC[1]. Anomalies in tooth number, shape, and position may lead to the disturbances in maxillary and mandibular arch length and occlusion complicating orthodontic treatment planning.

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Several studies investigated the prevalence of various dental anomalies but only a few have been conducted on orthodontic patients. In 1959, Lind examined1717 Swedish orthodontic patients and found 3.6 percent with supernumerary teeth[2]. Rose did a survey on the prevalence on 6000 orthodontic patients aged 7 to 14 years and found 4.3% with at least one congenitally missing tooth[3]. A recent pilot twin study by Kotsomitis *et al* on 202 orthodontic patients (101 pairs) reported a prevalence of ectopic eruption of 29.7% and agenesis 8.4%.To find the prevalence of malocclusion and treatment need amongst the young Chinese adults, Tang assessed 108 Chinese male first year dental students in Hong Kong using the Occlusal Index[4-5]. Of them 41.7% needed orthodontic treatment and 24.1% needed comprehensive orthodontic treatment to correct major malocclusions. The most commonly occurring feature was crowding (38.9%) followed by

Class II malocclusion and Class III malocclusion (21.3% and 14.8% respectively). Ahmed & Chowdhury have conducted a survey on 504 orthodontic patients in Bangladesh, where they found delayed shedding of deciduous teeth as the main etiologic factor for class-I malocclusion, dento-alveolar disproportion and skeletal discrepancy as the main factors for class-II malocclusion and loss of upper deciduous and 1st permanent molar were the major factors attributable to Class-III malocclusion[6]. Hossain and associates in a study in Dhaka Dental College and Hospital in 1994 reported Class-I malocclusion as predominant (55%) followed by Angel's Class-II malocclusion (33.3%) and Class-III malocclusion (11.7%).

Orthodontic treatment allows for the improvement of the patient's facial and dental aesthetics and gives positive attitude towards life. It also gives confidence and social acceptance. It would not only lead to a beautiful smile but also can make the teeth to occlude better each other so it improves the oral health. Orthodontic treatment also prevents gum recession, trauma to the teeth, cavities, gingivitis, periodontitis and possible loss of teeth in some individuals. But people of our country are not still aware enough of the problems relating to malocclusion[7].Treatment of malocclusion could reduce the suffering among the people and social embracement if early diagnosis of the specific problem and treatment can be given. This can be ensured by creating population awareness about the causes and consequences of malocclusion. The present study is such an initiative to attain this goal.

Materials and Methods

Study Design: Questionnaire

The present cross sectional study was carried out in the Department of Orthodontics and Dentofacial Orthopedics, Rural Dental College, PIMS, Loni. A total of 120 respondents [Table no.1] who were suffering from malocclusion and came for dental treatment were included in the study. Informed consent was obtained from them. Data were collected through face to face interview using a structured questionnaire. Knowledge of the respondents about malocclusion, its causes, consequences, treatment and prevention were also recorded. The mean age of the patients was 20 years and the youngest and the oldest patients were 8 and 32 years old respectively with female to male ratio being roughly 2.07:1.

Ethical Clearance

Ethical Clearance was obtained from institutional review board PIMS Ethical committee.

Data Collection

The study was conducted in June-October 2014 and closed ended questionnaire which consisted of 22 questions was assessing the awareness of health professionals in PIMS (DU) & Rural Dental College, Loni. The subjects were approached & the purpose of this study was explained to them & informed consent was obtained. The forms were distributed and they were assured of confidentiality. The completed questionnaire was collected on the same day.

Statistical analysis

The resulting data was statistically analyzed using SPSS (Statistical Packages for Social Sciences) Version 18.0 software. Percentages of the responses were calculated.

Results

Most of the subjects in the study don't have knowledge [Table no. 2] about the cause of the malocclusion i.e. genetic, caries, tooth loss and diet only 65% subjects know the habits can cause the malocclusion. Over 92.5% of the respondents were aware about aesthetic problem of malocclusion, 70% told that they are aware about functional problem, only 20% are aware of social problem and 32.5% aware of oral problem [Table no. 3]. Approximately 82.5% of the patients identified trauma as a risk factor for development of malocclusion and only 15% respondents know the gingivitis or periodontitis as a risk factor and 40% told dental caries are the risk factors and only 20% respondents responded early tooth loss as risk factor [Table no.4]. 97% of the respondents told that avoiding bad oral habits could prevent malocclusion, 40 % told timely treatment of malocclusion can avoid malocclusion, 30% told prevention of early loss of teeth due to caries, only 7.5% were in favour of the use of a space maintainer in places of premature loss of a deciduous tooth and 22.5% subjects told changing diet habits could prevent malocclusion [Table no.5].

Table no. 1: Demographic characteristics of the respondents (n = 120)

Demographic characteristics	Frequency	Percentage (%)
Age		
<10	4	3.34
10 -15	30	25
15-20	52	43.34
>20	34	28.32
Sex		
Male	39	32.5
Female	81	67.5
Mean ± SD = 20 ± 5.5; range = 8 – 32 years.		

Table no. 2: Knowledge of the respondents about Causes of malocclusion

Knowledge of the respondents about Causes of malocclusion	Frequency	Total (%)
a) Familial (genetic)		
Yes	18	15
No	81	67.5
Don't know	21	17.5
b) Caries		
Yes	21	17.5
No	81	67.5
Don't know	18	15
c) Habits		
Yes	78	65
No	30	25
Don't know	12	10
d) Diet		
Yes	06	5
No	84	70
Don't know	30	25
e) Tooth loss		
Yes	33	27.5
No	66	55
Don't know	21	17.5

Table no. 3: Knowledge and awareness about the problem

Knowledge and awareness about the problem	Frequency	Total (%)
a) Esthetic problems		
Yes	111	92.5
No	6	5
Don't know	3	2.5
b) Functional problem		
Yes	84	70

No	21	17.5
Don't know	15	12.5
c) Social problem		
Yes	24	20
No	72	60
Don't know	24	20
d) Oral problems		
Yes	39	32.5
No	48	40
Don't know	33	27.5
e) Right time of the treatment		
Yes	54	45
No	45	37.5
Don't know	21	17.5
f) Time of period of the treatment		
Yes	51	42.5
No	39	32.5
Don't know	30	25

Table no. 4: Knowledge about the risk factors of malocclusion

Knowledge about the risk factors of malocclusion	Frequency	Total (%)
a) Trauma		
Yes	99	82.5
No	18	15
Don't know	3	2.5
b) Dental caries		
Yes	48	40
No	57	47.5
Don't know	15	11.5
c) Gingivitis / periodontits		
Yes		
No	18	15
Don't know	60	50
	42	35
d) early tooth loss		
Yes	24	20
No	48	40
Don't know	48	40
e) functional problems like jaw problem		
Yes	36	30
No	51	42.5
Don't know	33	27.5

Table no. 5: Knowledge about prevention of malocclusion

Knowledge about prevention of malocclusion	Frequency	Total (%)
a) changing diet habits		
Yes	27	22.5
No	63	52.5

Don't know	30	25
b) prevention of early loss of teeth		
Yes	36	30
No	57	47.5
Don't know	27	22.5
c) avoiding bad habits		
Yes	114	95
No	3	2.5
Don't know	3	2.5
d) use of space maintainer		
Yes		
No	9	7.5
Don't know	69	57.5
	42	35
e) timely treatment of malocclusion		
Yes	48	40
No	39	32.5
Don't know	33	27.5
f) serial extraction		
Yes	3	2.5
No	51	42.5
Don't know	66	55

Discussion

With increasing awareness about orthodontic treatment, the demand for the treatment is also increasing rapidly, particularly among the late teenagers population. There are several reasons why one may seek orthodontic treatment. But prevention is always better than cure and Prevention of malocclusion can reduce the time period and the amount of money needed for treatment. This can be ensured if we can educate the society and make the population to become aware of the malocclusion and their possible drawbacks, by educating them in different ways. Ironically, it appears that milder deviations in facial form, such as 'buck teeth', that tend to evoke ridicule and teasing, can be more damaging psychologically than the more severe deformities that tend to elicit strong emotional reactions such as pity or revulsion. In schoolchildren, deviations of dental appearance have been found to be a target for teasing. The greater the deviation of the dental appearance, the greater the implication to the child and comments about teeth appeared to be more hurtful than those about other features[8].

The social and psychological influence of dental and facial appearance have been reported to have an important influence on people's perception of friendliness, social class, popularity and intelligence of an individual[7]but in this study 60% respondents are not aware of social problem as they are from very rural area. The importance of dental appearance to an individual does not seem to be influenced by social background or education. The appearance of the teeth seems to rank as a high priority for both males and females and nearly same results are found in this study in spite the study is being conducted in rural area of India. There is also an association between an individual's concepts of body image and low self-esteem. In relation to malocclusion, this tends to persist beyond childhood into adulthood and however, a group of patients followed from their adolescence into adulthood, who had not received orthodontic treatment, showed that awareness of malocclusion increases with age. A further problem with facial and dental deformity is that in social interaction it is invariably impossible to hide or disguise it, because in normal interaction the eyes attend the face [9-11].

A group of patients with a Class II division 1 malocclusion who underwent early treatment to correct their 'goofy teeth' revealed that the patients did not generally present for treatment with low self-concept[12]. The benefits of orthodontics for an improvement in body image have been documented for an adult population but in children, although there is usually an improvement in self-evaluation of dental-facial attractiveness with orthodontic treatment[13-

14].It does not appear to improve overall body image or self- esteem[15,16].This may indicate the role of status-seeking as a motive for orthodontic treatment, which is affected by socio- economic factors. A child's psychological profile may influence treatment demand, as those with high self-esteem initially appear more likely to seek improvement of their teeth[16]. It has also been shown that students with malocclusion who had not received orthodontic treatment have a lower achievement motivation than students who have received treatment[17].

For making the people aware about these problems we can take the help of media and other measures like camps and newspaper in that TV got the first priority followed by newspaper, teacher, school health program me, friends, health educators and poster got the least priority.

Conclusion

It is suggested that treatment of malocclusion should be instituted as early as possible for improvement of facial appearance and body image. But in a society like ours where most people are not aware of its social consequences, educational intervention should be considered to make people aware of the adverse consequences of malocclusion and this should be launched as priority basis. A large-scale community-based study is, therefore, recommended to assess people's perception about malocclusion and based on which the treatment strategy could to be planned.

References

1. Proffil WR. Fields HW. Ackerman JL. Sinclair PM. Thomas PM. Tulloch GIF. Contemporary orthodontics. 2nd ed. Si Louis: Mosby Year Book. 1993.
2. LindV.Medfoddaantalsvariationeripermanentad entitionen.*Odont Rev* 1959;10:176-89.
3. Rose JS. A survey of congenitally missing teeth, excluding third molars, in 6000 orthodontic patients. *Dent Pract* (Bristol) 1996;17:107-143.
4. Kotsomitis N, Dunne MP, Freer TJ. A genetic aetiology for some common dental anomalies: a pilot twin study. *AustOrthod J* 1996;14:172-8.
5. Tang EL. The prevalence of malocclusion amongst Hong Kong male dental students. *Br J Orthodon* 1995;21:57-63.
6. Ahmed N & Chowdhury K. Prevalence of malocclusion and its etiological factors. *J Oral Health* 1996;2(2):12.
7. Secord PF, Backman CW. Malocclusion and psychological factors. *J Am Dent Assoc* 1959; 59: 931–8.
8. Shaw WC, Rees G, Dawe M, Charles CR. The influence of dentofacial appearance on the social attractiveness of young adults. *Am J Orthod* 1985; 87:21-6.
9. Lerner RM, Karabenick SA, Stuart JL. Relations among physical attractiveness, body attitudes, and selfconcept in male and female college students. *J Psychol* 1973;85:119-29.
10. Helm S, Kreilborg S, Solow B. Psychosocial implications of malocclusion: a 15-year follow-up study in 30-year-old Danes. *Am J Orthod* 1985;87:110-8.
11. Macgregor FC. Social and psychological implications of dentofacial disfigurement. *Angle Orthod* 1970; 40:231-3.
12. Dann C, Phillips C, Broder HL, Tulloch JFC. Selfconcept, Class II malocclusion, and early treatment. *Angle Orthod* 1995;65:411-6.
13. Varela M, García-Camba JE. Impact of orthodontics on the psychologic profile of adult patients: a prospective study. *Am J Orthod Dentofacial Orthop* 1995;108:142-8.
14. Albino JEN, Lawrence SD, Tedesco LA. Psychological and social effects of orthodontic treatment. *J Behav Med* 1994;17:81-98.
15. Klima RJ, Wittemann JK, McIver JE. Body image, selfconcept, and the orthodontic patient. *Am J Orthod* 1979;75:507-16.
16. Birkeland K, Boe OE, Wisth PJ. Relationship between occlusion and satisfaction with dental appearance in orthodontically treated and untreated groups.A longitudinal study. *Eur J Orthod* 2000;22:509-18.
17. Hilzenrath SS, Baldwin DC. Achievement motivation – a factor in seeking orthodontic treatment. *IADR* 1970;49: Abstract 433.

Source of Support: NIL
Conflict of Interest: None