Prevalence of malocclusion among the age group of 15-25 years in Bangladeshi population

Jubayer S[1] BDS, MPH, **Kader MA**[2] BDS, **Sharmin S**[3] BDS, MPH, **Sultana N**[4] BDS, MPH **and Mamun MSA**[5] BDS, FCPS

ABSTRACT

Aims: A cross sectional study was carried out to explore the Prevalence of malocclusion among the age group of 15-25 years in Bangladeshi population.

Material and methods: A total of 431 samples were purposively selected. Data were collected by oral examination, model and face to face interview using the structured questionnaire and a standard format was prepared to record the data.

Results: The responded of the study were 17 to 25 years. Their mean ages were 20.64 ±1.61 years. Male 33% and female 67%. Among the respondent 82.6% have class I molar relation, 12.06% class II and 5.34 % class III molar relation. Among class I group 74% have malocclusion and 26% normal occlusion that is 78.42% respondent has malocclusion. In residential status 86% are urban. 96% of the respondent brushes their tooth two times and 4% once regularly. 13% of the respondent never visits dental chamber in their life time.

Conclusion: Most common malocclusion was class I followed by class II and class III. The systemic implementation of preventive oral care and community oriented health programs are needed for the continuous promotion of oral health care of Bangladesh.

Key Words : Malocclusion; Prevalence; Health Program

INTRODUCTION

An irregularity of teeth beyond the accepted range of normal define as Malocclusion.[1] Edward H. Angle in 18902, Angle's postulate was that the upper first molars were the key to occlusion and that the upper and lower molars should be related so that the mesiobuccal cusp of the upper molar occludes in the anterior buccal grove of the lower molar. If the teeth were arranged on a smoothly curving line of occlusion and this molar relationship existed, then normal occlusion would result.[3,4]

Prevalence of different classes of malocclusion in different population has some variation.[5,6] Few studies in Bangladesh tried to find out the malocclusion pattern in different sections of the population.[7,8] Hossain MZ et al, in 1994 reported on the prevalence of malocclusion at Dhaka Dental college and Hospital and found class I malocclusion 55%, class II 33%, class III 8% and open bite malocclusion 1%8 Niaz A et al, in 1996 carried out a study at Dhaka Dental college and found Class-I 45.84%, Class II division-1 32.74%, Class II division-2 7.14% and class III 14.28%. In that study the vulnerable age group for malocclusion was detected to be 13-19 years.[7]

This study was intended to determine the prevalence of malocclusion in the age group 15-25 years and mainly focused on Angle's Classification of malocclusion .

There may be a disproportion between the jaws or between jaw and tooth size resulting in overcrowding of teeth or in abnormal bite patterns. Extra teeth, malformed teeth, impacted or lost teeth, and teeth that erupt in an abnormal direction may contribute to malocclusion. Prevention and treatment of oral and dental disease specially malocclusion, adoption of preventive measure and proper oral health education, incidence of malocclusion can be reduced significantly. But the incidence is increasing in oriental populations. We can do much about avoiding costly orthodontic treatment by interceptive and preventive treatment.

MATERIALS AND METHODS

The cross sectional study is carried out among the under graduate college of Dhaka city from november 2012 to january'2013. A total 429 under graduate student were selected according to selection criteria and used for the study. Subjects with previously orthodontic treatment and missing tooth were not included in this study. A structured questionnaire was developed which was pre tested among the undergraduate college of Dhaka city. After the pre test all necessary changes and modifications were done as required. Data were collected by oral examination, plaster model and face

[1]Dr. Shamim Jubayer BDS, MPH, Asst. Professor, Dept. of Public Health, University Dental College and Hospital, [2]Dr. Md. Abdul Kader BDS, Lecturer, Dept. of Orthodontic University Dental College and Hospital, [3]Prof. Dr. Salma Sharmin BDS, MPH , Professor and Head,Dept. of Public Health, University Dental College and Hospital,[4]Dr. Nasrin Sultana BDS, MPH, Associate Professor, Dept. of Public Health, University Dental College and Hospital and [5]Dr. Mohammad Shamim Al Mamun BDS, FCPS, associate professor and Head,Dept. of Orthodontics, University Dental College and Hospital.

to face interview using the structured questionnaire at place of study. A analysis with Angles classification was used to describe the anterior-posterior relationship of the maxillary and mandibular first molars during maximum intercuspation. After collection, data were complied and entered in to computer. Data were analyzed using SPSS 16.1 for windows version 7.

RESULTS

A cross sectional study was carried out to explore the Prevalence of malocclusion among 431 sample age group 15 to 25 years .

Table 1 Distribution of respondent according to their age

Age Group	Frequency	Percent
17	7	1.6
18	12	2.8
19	64	14.8
20	169	39.2
21	89	20.6
22	34	7.9
23	18	4.2
24	27	6.3
25	11	2.6
Total	431	100.0

Table 1 Shows maximum respondent were 20 years of age.

Table 2 Distribution of respondent according to their sex

Sex	Frequency	Percent
Male	143	33.18
Female	288	66.82
Total	431	100.0

Table 2 Shows maximum respondent were female about 67%.

Table 3 Distribution of respondent according to their religion

Religion	Frequency	Percent
Islam	364	84.55
Hindu	54	12.53
others	13	03.02
Total	431	100.0

Table 3 Shows Maximum respondent were Muslims 84%. About 13% were Hindu and others 3%

Table 4 Distribution of respondent according to their residential status

Residential Satus	Frequency	Percent
Rural	61	14.15
Urban	370	85.85
Total	431	100

Table 4 Shows Maximum respondent were Urban status 86%. Rural were 14%

Table 5 Distribution of respondent according to their frequency of Brushing

Brushing	Frequency	Percent
one time	16	3.71
two times	415	96.29
Total	431	100.0

Table 5 shows Maximum respondent (about 96 %) brush their tooth two times regularly.

Table 6 Distribution of respondent according to their frequency of dentist visit

Visit Dentist	Frequency	Percent
Never	55	12.76
Few times till now	203	47.10
Once/more every year	173	40.14
Total	431	100.00

Table 6 Shows Maximum respondent visit dentist few times till now 47%, Once 40% , Never 13%.

Table 7 Distribution of respondent according to their Molar relation

Molar relation	Frequency	Percent
Class I	356	82.60
Class II	52	12.06
Class III	23	5.34
Total	431	100.00

Table 7 shows Maximum respondent has had Class I molar relation (83%)

09

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Table 8 Distribution of respondent with Class I molar relation according to another occlusal problem

Class I Molar relation with	Frequency	Percent
Normal occlusion	93	26.12
Proclination with deep bite	54	15.17
Proclination with normal overbite	17	04.77
Crowding	87	24.44
Spacing	84	23.60
Open bite	13	03.65
Deep bite with decreased overjet	08	02.25
Total	356	100

Table 8 Shows In patient with Class I molar relation about 26% had normal occlusion and rest of them were malocclusion.

Table 9 overall malocclusion

		Frequency	Percent	
Normal occlusion		93	21.58	
Malocclusion	Class I Malocclusion	263	61.02	78.42
	Class II malocclusion	52	12.06	
	Class III malocclusion	23	05.34	
Total		431	100	

Table 9 Shows about 78% respodent had Malocclusion and ony 22% had normal occlusion.

DISCUSSION

The present study was carried out to evaluate the pattern of malocclusion. The responded of the study were 17 to 25 years.86% of them are urban . Male 33%and female 77%. In them 86% are muslims, 12% hindu and 2% others. 98% use tooth paste and brush . The different malocclusion group according to Angle's classification in our study 83% respondent had Class I molar relation (Class I normal occlusion 22% and Class I malocclusion 61%), 12% class II and 6 % class III malocclusion . Proclination 12.6% crowding 46.2% spacing 25.2% and openbite 4.2%. Family history of malocclusion is 6.3%. 96.5% brush their tooth two times and 3.5% once regularly.12% of the respondent never visit dentist in their life time.98% use tooth paste and brush.

Prevention, especially malocclusion, adoption of preventive measure and proper oral health education, incidence of malocclusion can be reduced significantly and we can do much about avoiding costly orthodontic treatment by interceptive and preventive treatment.

CONCLUSION

Most common malocclusion was class I followed by class II and class III.The survey which was done, gave us a great insight. The whole process, from planning a study to implementation to data collection to writing a report was such an experience that will help us doing such kind of study in further. The systemic implementation of preventive oral care and community oriented health programs are needed for the continuous promotion of oral health care of Bangladesh.

RECOMMENDATION

1. Results may provide a baseline data for planning orthodontic services, specially among 15-25 age group.
2. A strong need of epidemiological survey to find out the prevalence.

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Correspondence

Dr. Shamim Jubayer BDS, MPH,
Asst. Professor, Dept. of Public Health
University Dental College and Hospital
Mob: 01711002102
E-mail: Jubayer74@gmail.com

11

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