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ORIGINAL ARTICLE

Relationship of oral health quality of life of school children with malocclusion

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ABSTRACT
Aesthetic smile plays a vital character in community interactions and psychological well-being. A Cross-sectional study was carried out to assess the Impact of Malocclusion on children's oral health-related quality of life and Self-reported happiness among 12-14-year-old School going Children. There were 200 (57.7%) males and 150 (42.9%) females in the study population. Among males, the prevalence of decayed teeth was 23 (11.5%), among females, the decayed teeth were 26 (17.3%). The mean DAI score of the study population was 2.87±5.265 and was higher among 12 years of age group though it was found to be higher among 12 year and female schoolchildren. This study showed that there is no association of malocclusion with the oral health-related quality of life and subjective happiness scale of 12-14-year-old schoolchildren.
***Keywords**: Aesthetic smile; Oral health; Cross-sectional study; Quality of life; School going Children.*

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INTRODUCTION

An aesthetic smile plays a vital character in community interactions and psychological well-being [1]. An individual beautiful appearance can be a great important factor on which they feel about themselves, which in return plays a vital role on their quality of lifestyle [2]. The main conception of oral health-related quality of life (OHRQoL) always indicates communal and sentimental issues, as well as any symptoms or functional defects from the parental view [3]. Locker et al in the year 2007,define OHRQoLas 'the impact of oral disease on the viewpoint of day to day lifestyle that is a prime concern to all patients and all parents, with those impacts being of sufficient magnitude, whether in terms of severity, frequency or duration, to affect an individual's perception of their life overall [4].

The main aspiration for any kind of orthodontic treatment fixed or removal is usually linked with good aesthetic or for good looking. Dento-facial aesthetics and any kind of class 1, class 2 class 3 malocclusion affect oral function are very less but it has a great impact on a person's self-regarded, emotional development, and social communication globally [5-8]. Malocclusions and any kind of orthodontic disorder affect aesthetics and individual oral function in everyday life. Studies say that presence of malocclusion increase the prevalence of dental caries and chronic generalised gingivitis (CGG) [9]. So it is very vital to recognise various types of malocclusion class I,II,III and their impact on the oral health quality of life of every child.

To find out the influence of various Malocclusion on children's oral health-related quality of life and Self-reported happiness among 12-14-year-old School going Children.

MATERIAL AND METHOD

A Cross-sectional study was carried out to assess the Impact of Malocclusion on children's oral health-related quality of life and Self-reported happiness among 12-14-year-old School going Children. The study population was selected from various public schools. Ethical clearance was approved.

Study setting, study design

The sample size was procured using a two-stage cluster sampling technique with schools as the sampling unit. In the first stage, districts were selected and in the second stage, schools were selected. Cluster size was pre-decided as 50 students from each school and wherever more than fifty (50) students were present in the school satisfying the inclusion criteria, randomly fifty (50) students were selected.

Now to achieve the sample size of 350 students, seven (7) schools (350/50=7) were required. To substitute for the refusal to participate and for incompletely filled proforma, one (1) extra school was chosen at random to act as a reserve for low response. Thus, 8 schools were required to achieve the desired sample size.

Inclusion criteria

- 12-14-year-old healthy school children attending schools
- School children having all permanent teeth
- Those who were present and willing to participate in the study
- who gave the informed consent

Exclusion criteria

- children's with craniofacial anomalies (clefts and syndrome)
- who had or undergoing orthodontic treatment
- who were having mixed dentition

Socio-demographic variables, oral hygiene practices and 16 items of the Short Form Child Perception Questionnaire (CPQ11-14)used. The collected data entered into Excel in Microsoft Software and Statistics Package for Social Sciences (SPSS) version 21 used to get the result.

RESULTS

Table 1. Distribution of participants according to age and gender

Age group		Gender		Total
		male	female	
12 year	n	78	44	122
	%	63.9%	36.1%	100.0%
13 year	n	50	55	105
	%	47.6%	52.4%	100.0%
14 year	n	72	51	123
	%	58.5%	41.5%	100.0%
Total	n	200	150	350
	%	57.1%	42.9%	100.0%

Table 2. Gender wise comparison of Mean number of decayed, filled, missing teeth and DMFT Scores of the study population

Gender		**Decayed teeth**	**Missing teeth**	**Filled teeth**	**DMFT score**
Male	**Mean**	0.21	0.00	0.00	0.21
	SD	0.699	0.000	0.000	0.699
female	**Mean**	0.37	0.01	0.01	0.38
	SD	0.979	0.082	0.082	1.008
Total	**Mean**	0.28	0.00	0.00	0.28
	SD	0.833	0.053	0.053	0.848
p-value		0.024*	0.397#	0.397#	0.015*

Table3. Mean Dental Aesthetic Index score among different age groups

Age Group	**DAI Score**	
	Mean	**SD**
12 Year	23.17	5.484
13 Year	22.60	5.055
14 Year	22.80	5.246
Total	22.87	5.265
p-value	0.684#	

Table 4. Age-wise distribution of subjects according to the severity of malocclusion

Age Group		DAICATEGORY				Total
		NONE/MINOR	DEFINITE	SEVERE	HANDICAPPING	
12 Year	N	89	21	7	5	122
	%	73.0%	17.2%	5.7%	4.1%	100.0%
13 Year	n	82	14	7	2	105
	%	78.1%	13.3%	6.7%	1.9%	100.0%
14 Year	n	91	21	7	4	123
	%	74.0%	17.1%	5.7%	3.3%	100.0%
Total	n	262	56	21	11	350
	%	74.9%	16.0%	6.0%	3.1%	100.0%
p-value		0.931#				

Table 5. Comparison of mean CPQ and SHS score between different categories of malocclusion

DAI CATEGORY		Oral symptoms	Functional limitation	Emotional wellbeing	Social wellbeing	Global rating	CPQ SCORE	SHS SCORE
NONE/MINOR	Mean	4.96	4.22	3.77	3.31	3.58	16.29	19.12
	SD	2.40	2.36	2.20	2.54	2.03	7.16	3.22
DEFINITE	Mean	4.48	4.21	3.34	3.54	3.79	15.57	19.68
	SD	2.62	2.65	2.31	2.60	2.08	8.08	3.16
SEVERE	Mean	5.14	3.52	3.43	3.76	4.10	15.86	17.71
	SD	2.94	2.34	2.52	3.48	2.07	9.05	3.73
HANDICAPPING	Mean	4.18	4.73	4.09	5.09	3.18	18.09	18.82
	SD	1.78	2.97	1.97	2.74	1.78	7.09	2.86
Total	Mean	4.87	4.19	3.69	3.43	3.63	16.20	19.12
	SD	2.45	2.42	2.23	2.63	2.02	7.41	3.25
p-value		0.298#	0.581#	0.552#	0.167#	0.525#	0.639#	0.188#

There were 200 (57.7%) males and 150 (42.9%) females in the study population. Among males, the prevalence of decayed teeth was 23 (11.5%), among females, the decayed teeth were 26 (17.3%). A Chi-square test was used to compare the prevalence of decayed teeth among males and females. There was no significant difference in the Decayed teeth among males and females, though the prevalence of Decayed teeth among female school children was higher than males. The Overall mean DAI score of the study population was 22.87±5.265.The mean DAI among 12-year-old was 23.17±5.484, 13 years old was 22.60±5.055 and 14-year-old schoolchildren were 22.80±5.246. The Mean DAI score among various age groups was compared using the Kruskal Wallis test and the difference was found to be non-significant (p-value≤0.05). The age-wise comparison of the study population with the severity of malocclusion showed that among 12-year-old schoolchildren, 89 (73.0%) subjects were found in the minor/ no malocclusion group, 21 (17.2%) subjects in the definite malocclusion group, 7 (5.7%) subjects in severe malocclusion group and 5 (4.1%) subjects in handicapping type of malocclusion group. Among 13-year-old school children, 82 (78.1%) subjects were found in the minor/ no malocclusion group, 14 (13.3%) subjects in the definite malocclusion group, 7 (6.7%) subjects in the severe malocclusion group and 2 (1.9%) subjects in handicapping type of malocclusion group. Among 14-year-old school children, 91 (74.0%) subjects were found in the minor/ no malocclusion group, 21 (17.1%) subjects in the definite malocclusion group, 7 (5.7%) subjects in the severe malocclusion group and 4 (3.3%) subjects in handicapping type of malocclusion group. The difference in the distribution of the study population according to the severity of malocclusion was compared using the Chi-square test**.** This difference was not found to be statistically significant (p-value>0.5), The overall mean oral symptom score among the study population was 4.87±2.45. The mean oral symptom score among none/minor type of malocclusion was 4.96±2.40, among Definite type of malocclusion was 4.48±2.62, among the severe type of malocclusion was 5.14±2.94 and among Handicapping type of malocclusion was 4.18±1.78. The mean oral symptom score among different type of malocclusion was compared using the Kruskal Wallis test. No statistically significant difference was found though the mean oral symptom score was higher among the severe type of malocclusion.

This study provided valuable information regarding the oral health-related quality of life of 12-14-year-old School going Children which can be summarized as follows. In the present study, the prevalence of decayed teeth was 14.0%, Filled teeth and Missing teeth were 0.3% each respectively. The mean DMFT

score among school children was found to be 0.28±0.85. The Mean DMFT score was significantly higher among 14 years old as compared with 12 year and 13 years old school children.

Dental Aesthetic Index: The mean DAI score of the study population was 2.87±5.265 and was higher among 12 years of age group though it was found to be higher among 12 year and female schoolchildren. Maximum subjects (74.9%) were found with scores less than or equal to 25 (minor/ no malocclusion and no or slight treatment), followed by 16.0% of subjects who were found to have a score of 26-30 (definite malocclusion and elective treatment need), then 6.0% subjects were found to have a score of 31-35 (severe malocclusion and highly desirable treatment need) and the minimum subjects (3.1%) were found to have a score of ≥ 36 (very severe/handicapping malocclusion and mandatory treatment need). It was seen that the "very severe malocclusion" cases were found to be higher among males as compared to females.

CONCLUSION

In conclusion, this study showed that there is no association of malocclusion with the oral health-related quality of life and subjective happiness scale of 12-14-year-old schoolchildren. This may be due to the lack of awareness about the impact of malocclusion on oral health-related quality of life of school children studying in public schools in the age group of 12-14-year-old school children.

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