



The impact of malocclusion on the oral health related quality of life of 11-14-year-old children

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INTRODUCTION

- Malocclusion is a developmental condition where there is a deflection from the normal relation [1].
- Malocclusion is one of the most common oral conditions, with a prevalence ranging from 20% to 100% [2].
- Due to the high prevalence of malocclusion, the World Health Organization considers malocclusion to be a significant public health problem [3].
- A previous study from Saudi Arabia reported a malocclusion prevalence of about 68% [4].
- AIM:** This study aims to determine the association between malocclusion and OHRQoL of 11-14-year-old children.

METHODS

- Study Design:** Cross-sectional study
- Sampling:** Convenient sample selected from patients coming to the orthodontic department at King Abdulaziz Medical City, Riyadh, Saudi Arabia.
- Sample Size:** 250 participants would be required to obtain a power of 80% with a 95% confidence interval.
- Data Collection:**
 - Sociodemographic information was collected using a structured questionnaire from the parents who consented to participate in this study.
 - The children completed the CPQ11–14 in the dental clinic waiting room just prior to the dental examination.
- Data Analysis:**
 - Analysis of variance (ANOVA) or Student's t-test: to compare CPQ11–14 scores and demographic variables.
 - Multivariate analysis of variance (MANOVA): to compare DAI and CPQ11–14 scores
 - Bonferroni test Post hoc comparisons: between pairs of malocclusion groups

RESULTS

Table 1 Total Scores on the Child Perception Questionnaire (CPQ_{11–14}) for the socio-demographic variables

Variables		N (%)	CPQ _{11–14} Mean (SD)	p value ^b
Age	11 years	106 (42.4)	20.14 (9.90)	0.20
	12 years	55 (22.0)	18.65 (9.01)	
	13 years	49 (19.6)	22.04 (10.75)	
	14 years	40 (16.0)	18.02 (9.26)	
Gender	Male	64 (25.6)	19.45 (10.88)	0.68
	Female	186 (74.4)	19.97 (9.44)	
Mother's educational level ^a	Less than high school	84 (33.6)	20.68 (10.16)	0.49
	High school or diploma	73 (29.2)	19.57 (8.43)	
	Bachelor	77 (30.8)	19.86 (9.39)	
	Master and above	11 (3.2)	18.75 (21.78)	
Father's educational level ^a	Less than high school	47 (18.8)	20.91 (11.09)	0.26
	High school or diploma	97 (38.8)	20.11 (9.10)	
	Bachelor	83 (33.2)	18.79 (8.85)	
	Master and above	17 (5.2)	24.00 (17.45)	
Family monthly income ^a	Less than 5000 SAR	42 (16.8)	22.09 (12.36)	0.40
	5000–15,000 SAR	88 (35.2)	20.10 (9.02)	
	15,000–20,000 SAR	72 (28.8)	18.94 (8.12)	
	More than 20,000 SAR	38 (15.2)	19.44 (11.89)	

Table 2 Domain and Total Scores on the Child Perception Questionnaire (CPQ_{11–14}) for 11- to 14-year-old children in the sample

Items	No. of Items	Possible Range	Observed Range	Mean (SD)
Oral symptoms	4	0–16	0–16	5.26 (3.22)
Functional limitation	4	0–16	0–16	3.67 (3.58)
Emotional well-being	4	0–16	0–16	3.98 (3.89)
Social well-being	4	0–16	0–16	2.08 (2.98)
Total CPQ _{11–14} score	16	0–64	2–62	19.89 (9.80)

Table 3 Domain and Total Scores on the Child Perception Questionnaire for 11- to 14-year-old Children (CPQ_{11–14}) by Dental Aesthetic Index (DAI) Malocclusion Severity

Severity of Malocclusion	N (%)	Oral health related quality of life (OHRQoL)				
		Oral symptoms Mean(SD)	Functional limitation Mean(SD)	Emotional well-being Mean(SD)	Social well-being Mean(SD)	Total CPQ _{11–14} score Mean(SD)
Normal/Minor	94 (37.6)	5.28 (3.17)	3.55 (3.60)	3.92 (3.97)	1.51 (2.33) ^a	19.62 (9.83)
Definite	56 (22.4)	4.80 (2.85)	3.53 (3.25)	3.43 (3.54)	1.75 (2.54)	18.59 (8.14)
Severe	38 (15.2)	5.71 (3.86)	3.57 (4.38)	3.68 (4.26)	2.65 (4.08)	20.42 (13.05)
Very severe	62 (24.8)	5.40 (3.22)	3.87 (3.38)	4.80 (3.76)	2.88 (3.20) ^a	21.16 (8.83)
Total Mean Score	250 (100.0)	5.26 (3.22)	3.67 (3.58)	3.98 (3.89)	2.08 (2.98)	19.89 (9.80)

KEY FINDINGS

- The mean CPQ11–14 score was 19.89±9.8.
- Mean scores for the oral symptoms, functional limitations, emotional well-being, and social well-being domains were 5.26±3.22, 3.67±3.58, 3.98±3.89 and 2.08±2.98, respectively.
- Normal or slight malocclusion was seen in 37.6%, definite malocclusion was seen in 22.4%, severe malocclusion in 15.2% and handicapping malocclusion in 24.8% of the subjects.
- Children with handicapping malocclusion had significantly ($p<0.05$) higher scores for the social well-being domain as compared with children having normal/minor malocclusion, indicating a poorer quality of life.

CONCLUSION

- Handicapping malocclusion had a significant negative impact on the social well-being domain of OHRQoL among 11-14-year-old children in this population.

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