

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 (CPQ₁₁₋₁₄) 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 (CPQ₁₁₋₁₄) 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 (CPQ₁₁₋₁₄) 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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