

# Impact of Dental Malocclusions on Pakistani Young Adults' Oral Health-Related Quality of Life

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## Abstract

**Introduction:** There is found to be a significant link of orthodontic conditions and malocclusions on oral health related quality of life of an individual.

**Objective:** To find out the oral health related quality of life score in young adults with orthodontically mal-aligned teeth in a Pakistani population.

**Methodology:** The total of 100 orthodontic patients were selected for the current study according to the selection criteria. The study was conducted at orthodontic center of de'Mont/Punjab Dental Hospital, Lahore. The study was conducted after obtaining informed consent from the patients and the ethical approval from the institute. Self-administered questionnaire (CPQ) was implemented to find out the Oral Health Related Quality Of Life score (OHRQoL) in young adults with orthodontically mal-aligned teeth in a Pakistani population.

**Results:** The mean age of orthodontic patients was 14.25±2.01 years. The overall mean oral health related quality of life score was 11.11±4.12. The OHRQoL score (total QOL score) was significantly affected in young adults with orthodontically mal-aligned teeth.

**Conclusion:** It was concluded that OHRQoL score was significantly affected in young adults with orthodontically mal-aligned teeth in Pakistani population.

**Keywords:** Orthodontic, Quality of Life, Adolescent's.

## Introduction

Malocclusion, or mal-aligned teeth and jaws, has a notable effect on the oral health-related quality of life (OHRQoL) of young adults.<sup>1</sup> During adolescence, a time marked by heightened self-awareness and social interactions, the appearance and functionality of teeth play a crucial role in confidence and self-esteem. Mal-alignment can cause young adults to feel self-conscious

about their smiles, leading to embarrassment, avoidance of social interactions, and even bullying in severe cases.<sup>2,3</sup> These psychological effects can influence their emotional well-being and overall quality of life, making malocclusion more than just a dental issue—it becomes a deeply personal and social challenge.<sup>4</sup>

Beyond the emotional impact, malocclusion can also interfere with basic oral functions such as chewing, speaking, and maintaining oral hygiene.<sup>4,5</sup> Poorly aligned teeth create spaces or overlaps that are difficult to clean, increasing the risk of plaque buildup, tooth decay, and gum disease.<sup>6</sup> Young adults with malocclusion may also experience discomfort or pain while eating, further diminishing their quality of life.<sup>6</sup> Over time, these functional impairments can lead to frustration and reluctance to maintain proper oral care, creating a cycle of worsening oral health.<sup>7</sup>

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The social and functional impacts of malocclusion highlight the importance of early intervention and treatment. Orthodontic care, though often perceived as cosmetic, plays a vital role in improving OHRQoL for young adults.<sup>8-10</sup> Addressing malocclusion not only enhances aesthetics but also ensures better oral health, preventing long-term complications.<sup>11</sup> By improving the alignment of teeth and jaws, orthodontic treatment can help adolescents regain confidence, improve oral functionality, and foster a sense of well-being that carries into adulthood. This holistic approach to care underscores the interconnectedness of dental health and overall quality of life.<sup>12-14</sup>

There is found to be a significant link of orthodontic conditions and malocclusions on OHRQoL of an individual.<sup>15-16</sup> The study was aimed to find out the OHRQoL score in young adults with orthodontically mal-aligned teeth in Pakistani population.

## Methodology

A Questionnaire based study was conducted on a sample of 100 orthodontic patients calculated through Raosoft sample size calculator and in line with the selection criteria. The study was conducted at orthodontic center of de'Montmorency / Punjab Dental Hospital, Lahore. The inclusion criteria included patients with full permanent dentition clinically excluding third molars. Patients with No history of previous orthodontic treatment. Based on DAI score we included subjects ranging from mild, moderate to severe malocclusion.

The study was conducted after obtaining informed consent from the patients and after obtaining ethical approval from the institute. Self-administered questionnaire (CPQ)<sup>13,16</sup> was implemented to find out the OHRQoL score in young adults with orthodontically mal-aligned teeth in Pakistani population.

The data was collected and analyzed using SPSS version 21.0. The mean values of oral scores along with SD was calculated for

various domains of OHRQoL. Independent sample t- test was used for comparison of Mean Quality of Life score among the malocclusion groups and "p" value of  $\leq 0.05$  was found to be statistically significant.

## Result

The average age of orthodontic patients was  $14.25 \pm 2.01$  years. Total selected patients were 100 cases from the orthodontic department.

The overall mean oral score was  $11.18 \pm 4.23$ , the functionality score was  $2.11 \pm 2.01$ , emotional balance score was  $3.43 \pm 2.98$ , social wellbeing score was  $3.13 \pm 1.48$ . The Mean total QOL score was  $11.11 \pm 4.12$  and mean DAI score was  $24.53 \pm 7.22$ .

The overall mean OHRQoL score was  $11.11 \pm 4.12$ . The oral health related quality of life score (total QOL score) was significantly affected in adolescents with orthodontic malocclusion severity levels in a Pakistani population i.e. p-value=0.000 respectively (Table I).

Malocclusion levels		Mean Difference (I-J)	Sig.
Mild	Mod	-9.00	0.000
	Severe	-12.11	0.000
	Extreme	-21.18	0.000
Mod	Minor	11.00	0.000
	Severe	-5.20	0.000
	Extreme	-12.38	0.000
Severe	Minor	12.33	0.000
	Mod	3.66	0.000
	Extreme	-8.69	0.000
Extreme	Minor	23.09	0.000
	Mod	13.15	0.000
	Severe	9.55	0.000

**Table I: DAI scores & malocclusion severity**

## Discussion

There has been a great focus on the impact of severity of mal-alignment with OHRQoL.<sup>13</sup> The malocclusion not only affects oral cavity but also impact facial and dental esthetics, physical social functional and psychological wellbeing.<sup>15</sup> It also got an impact on other

areas of life such as financial, emotional, spiritual, social and psychological consequences.<sup>16-18</sup>

There is found to be a significant link of orthodontic conditions and malocclusions on OHRQoL of an individual. The research was aimed to evaluate the OHRQoL score in young adults with orthodontically mal-aligned teeth in Pakistani population.

The total of 100 orthodontic patients were selected for the current study according to the selection criteria. The study was conducted at orthodontic center of de'Mont/Punjab Dental Hospital, Lahore. Informed consent was taken from patients. Ethical clearance was obtained from the institutional review board. Self-administered questionnaire (CPQ) was implemented to find out the OHRQoL score in young adults with orthodontically mal-aligned teeth in Pakistani population.

The result of the current study showed that the mean age of orthodontic patients was  $14.25 \pm 2.01$  years. The total selected patients were 100 cases from the orthodontic department. The overall mean oral score was  $11.18 \pm 4.23$ , the functionality score was  $2.11 \pm 2.01$ , emotional balance score was  $3.43 \pm 2.98$ , social well-being score was  $3.13 \pm 1.48$ . The Mean total QOL score was  $11.11 \pm 4.12$  and mean DAI score was  $24.53 \pm 7.22$ . The overall mean OHRQoL score was  $11.11 \pm 4.12$ . The oral health related quality of life score (total QOL score) was significantly affected in young adults with orthodontic mal-Alignment severity levels in a Pakistani population i.e.  $p\text{-value} = 0.000$  respectively. Results of this study are comparable with that of other studies published on the same topic but with different methodologies.<sup>16-20</sup>

There are several short comings of this study such as small sample size, single centric center and cross-sectional nature of the study, however within these limitations the results showed that related OHRQoL score was significantly affected in young adults with

orthodontically mal-aligned teeth in Pakistani population.

## Conclusion

The results indicated that OHRQoL score was significantly affected in young adults with orthodontically mal-aligned teeth in Pakistani population.

## Ethical Approval

The study was approved by the Institutional Ethical Review committee of de'Montmorency College of Dentistry, Lahore, Pakistan.

## Disclaimer

No external funding.

## Conflict of Interest

It is declared that the authors don't have any conflict of interest.

## Authors' Contribution

**MA:** written the manuscript, and interpretation of data

**SM:** Main supervisor, critically reviewed the manuscript & final editing

**SQ:** critically reviewed the manuscript & final editing

**SA:** written the manuscript, and interpretation of data

**SB:** written the manuscript, and interpretation of data

**HA:** critically reviewed the manuscript

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