Impact of bullying due to dentofacial features on oral health–related quality of life

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Introduction: The aim of this study was to investigate whether there is a relationship between self-reported bullying because of dentofacial features and oral health–related quality of life among a representative sample of Jordanian schoolchildren. **Methods:** This was a cross-sectional study in which a representative sample of sixth-grade students (age, 11-12 years) from randomly selected schools in Amman, Jordan, were asked to complete questionnaires distributed in the classroom in the presence of the researchers. The questionnaire used for this purpose was the short form of the Child Perceptions Questionnaire for 11- to 14-year-old children. The final sample size was 920 children (470 girls, 450 boys). **Results:** There were significant differences between the sexes for the total Child Perceptions Questionnaire score and for the oral symptoms and the social well-being subscales, with boys reporting higher scores and thus more negative effects on their oral health–related quality of life. Comparison of the total scores and subscales scores for boys and girls subdivided into those who reported being bullied and not being bullied about their teeth showed that bullied boys had significantly greater effects on overall oral health–related quality of life and on all subscales than did not-bullied boys ($P < 0.001$ for all comparisons). Bullied girls also had significantly greater effects on the overall oral health–related quality of life and all subscales than did not-bullied girls ($P < 0.001$ for all comparisons). However, bullied boys and girls reported similar scores for the different subscales of the Child Perceptions Questionnaire; there were no significant differences. **Conclusions:** This study demonstrated a significant relationship between bullying because of dentofacial features and negative effects on oral health–related quality of life. The results highlight the importance of addressing the bullying problem among schoolchildren and provide important data for educational authorities to create antibullying programs to help students receive education in a safe and healthy environment. (Am J Orthod Dentofacial Orthop 2014;146:734-9)

Enhanced dental esthetics and psychological well-being are frequently stated as reasons for seeking orthodontic treatment during childhood and adolescence.[1]

Bullying has been described as a situation in which a person is exposed repeatedly and over time to negative actions by at least 1 other person.[2] Negative actions can be classified as direct (hitting, kicking, insults, and threats) or indirect (gossip, spreading of rumors, and social exclusion) forms of aggression that cause harm to the victim.[3] Bullying among schoolchildren is endemic, with a reported prevalence ranging from 5% to 58% worldwide.[4,5] In children who are bullied about dentofacial features, orthodontic treatment can have a major impact on their oral health–related quality of life (OHRQoL).

A review of the literature showed 2 studies that have investigated the prevalence of bullying in Jordan.[6,7] Al-Bitar et al[7] looked at the prevalence of bullying, its effects on school attendance and perception of academic performance, and the contribution of general physical and dentofacial features. The prevalence of bullying among 11- to 12-year-old schoolchildren was 47%, and significantly more boys reported being bullied than girls. Teeth were the feature most frequently targeted for bullying, followed by strength and weight. The 3 most commonly reported dentofacial features

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targeted by bullies were spacing between the teeth or missing teeth, shape or color of the teeth, and prominent maxillary anterior teeth.[7]

OHRQoL is defined as the absence of negative effects of oral conditions on social life and a positive sense of dentofacial self-confidence.[8] Recently, the effects of oral health and disease, dental appearance, malocclusion, and treatment for these conditions on psychological and functional well-being have drawn increasing attention from clinicians and researchers.[9] Several studies have examined how malocclusion and orthodontic treatment affect OHRQoL by investigating variables such as ethnicity, sex, age, and orthodontic treatment experience.[10-14] These studies have also shown that improved esthetics appears to be a major motivation for young patients to undergo orthodontic treatment.

The socio-emotional domain of quality of life (smiling, showing teeth without embarrassment, and being teased about appearance), however, received less attention, with limited published data regarding the relationship between bullying because of dentofacial features and OHRQoL. Seehra et al[15] showed that adolescents who were bullied because of a malocclusion experienced a general impact on their OHRQoL, including greater oral symptoms, functional limitations, emotional and social effects, and an overall negative impact on OHRQoL. This study focused on the impact of bullying on quality of life in an orthodontic population, but there is little information in the literature regarding the impact of this problem in the general population.

The aim of this study was to investigate whether there is a relationship between self-reported bullying because of dentofacial features and OHRQoL among a representative sample of Jordanian schoolchildren.

In Arabic, there is only 1 word to describe the concepts of bullying and teasing. The term "bullying" is used in this article, but both meanings should be borne in mind when interpreting the results.

MATERIAL AND METHODS

Ethical approval for the study was obtained from the Jordanian Ministry of Education and the Deanship of Scientific Research of the University of Jordan.

This was a cross-sectional study with a representative sample of students from 1 school year in Amman, the largest city and capital of Jordan, with a population over 2 million. All students were from the sixth grade and were 11 to 12 years of age.

This study involved the same cohort of patients reported in the study by Al-Bitar et al.[7] Anonymous, self-reporting questionnaires were distributed to students in 12 randomly selected schools in the 6 educational districts in Amman to assess the impact of oral and dentofacial problems on quality of life and to relate them to self-reported bullying. A history of bullying due to dentofacial features was ascertained using a questionnaire modified from Shaw et al,[16] and OHRQoL was assessed with the short form of the Child Perceptions Questionnaire (CPQ) for 11- to 14-year-old children (CPQ11-14),[17] which is derived from the original longer version of the questionnaire.[18] It is divided into 4 health domains: oral symptoms, functional limitations, emotional well-being, and social well-being.

The cohort consisted of sixth-grade Jordanian school children in Amman (ages, 11-12 years) with no orthodontic appliances in situ. Children were excluded if they had a diagnosed congenital anomaly or syndrome. The total number of sixth-grade students in Amman during the academic year 2011-2012 was 29,157 (15,072 girls, 14,085 boys). It was decided that it was feasible to randomly select and survey approximately 1000 of these students, and a sample size calculation was undertaken using the CPQ11-14 data from a pilot study to ensure that this would provide adequate power. Based on a difference in means for the total CPQ11-14 of 5 points, a standard deviation of 10, and a significance level of 0.05, a 2-sample t test calculated that 172 students would be required in each of the bullied and not-bullied groups. Since the remaining results were unlikely to be normally distributed, a correction factor was applied, resulting in a recommended sample size of 198 per group.[19] Because we intended to analyze the data of boys and girls separately, this would apply to both groups. The anticipated recruitment of about 1000 participants therefore ensured adequate power.

Before the study, school principals sent passive consent letters to parents informing them of the study goals and allowing them to refuse their child's participation. The questionnaires were distributed in the classroom in the presence of teachers, but the children completed the questionnaires with no assistance. One researcher (I.K.A.) was available to clarify any items in the questionnaire that were not clear to participants. Any questionnaire that was not completed correctly was excluded from further analysis.

Before conducting the research, a pilot study was undertaken to test the clarity of the CPQ11-14 when translated into Arabic. In the small number of instances when a word was beyond the sixth-grade reading level, 1 or 2 simple synonyms were added for clarity.

Statistical analysis

Analysis of data was conducted using SPSS software (version 16.0; SPSS, Chicago, Ill). Descriptive statistics