

Craniodentofacial characteristics, dental esthetics–related quality of life, and self-esteem

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Introduction: Self-esteem is a psychological trait that may develop in interaction with craniodentofacial esthetics. The aim of this study was to explore the relationship among craniodentofacial characteristics, dental esthetics–related quality of life, and self-esteem in adolescents and young adults. **Methods:** The study was cross-sectional; the sample included 200 pupils and university students (58% female) aged 13 to 33 years. The Rosenberg Self-Esteem Scale and the Psychosocial Impact of Dental Aesthetics Questionnaire were used. Craniodentofacial features were estimated by the method of Martin and Saller, the Index of Orthodontic Treatment Need, and the Index of Complexity, Outcome and Need. **Results:** When malocclusion severity increases, dental esthetics–related quality of life decreases. The multiple linear regression showed that with the control of all other predictors in the model, the social impact of dental esthetics, borderline dental self-confidence, and facial type contribute the most to explain the variability of self-esteem, accounting for 3.2%, 1.3%, and 1.4%, respectively, of the variability values. The whole model accounts for 24.2% of the variability of self-esteem. **Conclusions:** In adolescents and young adults, self-esteem appears to be more influenced by the self-perceived psychosocial impacts of dental esthetics than the normative level of malocclusion, craniofacial typology, sex, or age. (Am J Orthod Dentofacial Orthop 2015;147:711-8)

Physical appearance seems to be an important factor in establishing social interactions, especially for adolescents and young adults.¹ Several researchers have proven that physical appearance has an influence on the psychosocial state of a person; when evaluating facial esthetics, the eyes and the mouth seem to be the most important features.^{2,3} Because the smile is an important part of the esthetic impression of the face, and the teeth are its foremost part, it is reasonable to expect that dental appearance can affect a person's psychosocial state. In the psychosocial well-being context, the term quality of life (QOL) is often used. QOL is the feeling of well-being or lack of

well-being that results in satisfaction or dissatisfaction, respectively, with the domains of life that are important to the person.⁴ Oral health surely does contribute to the QOL; that is why oral health–related quality of life (OHR-QOL) is estimated in dental medicine. The relationship between QOL and malocclusion is considered controversial, with some studies confirming and others denying the relationship.⁵⁻⁸ QOL related to dental esthetics and malocclusion can be assessed by the Psychological Impact of Dental Aesthetics Questionnaire (PIDAQ), which has been validated in several languages since its development in 2006, with demonstrations of good validity and reliability.⁹⁻¹¹

Malocclusion is not a disease but an aggregate of natural variations from skeletal and dental characteristics that are defined as ideal. A malocclusion does not necessarily require orthodontic treatment because most malocclusions do not have a significant effect on oral health.⁶ If malocclusions do not really affect one's health status, the question is why do patients choose to undergo orthodontic treatment that requires much patience, discipline, and compliance? Although orthodontists think about occlusion, mastication, and phonation when defining orthodontic treatment need, patients seek orthodontic treatment because of their desire for a better physical appearance.⁹

When talking about QOL and psychosocial well-being, the self-esteem issue is imposed. How do

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teenagers with malocclusions perceive themselves? The evaluative component of self represents self-esteem. Psychologists differentiate 3 usages of the term: the so-called global self-esteem, which refers to the way people feel about themselves; self-esteem related to self-evaluation, which includes an evaluation of one's abilities and attributes; and self-esteem related to feelings of self-worth, which describes momentary emotional states.¹² In our study, we focused on global self-esteem. The Rosenberg Self-Esteem Scale (RSES) is widely used for measuring self-esteem; it has been administered in at least 53 nations and translated into at least 28 languages.¹³ Self-esteem is often mistaken for similar terms: self-concept, self-consciousness, self-awareness, and self-confidence. Self-concept is the sum of a person's beliefs about himself or herself. It represents the descriptive part of one's self.¹⁴ Self-consciousness is an intense sense of self-awareness. Being self-conscious means being excessively conscious of one's manner or appearance. It is a fixation with oneself, whereas self-awareness is knowing that one exists as a particular person.¹⁵ It was shown that orthodontic treatment need affects self-consciousness in young adults.¹⁶ Self-confidence is another psychological construct that means the awareness and belief in one's own abilities.¹⁷

People with higher self-esteem are more satisfied with their lives; they are estimated to be happier, less depressed, and more competent at work or school, and they are mentally and physically healthier.¹⁸ If adolescents with malocclusion really have lower self-esteem than their peers without malocclusion, we can estimate the possible positive influences of orthodontic treatment on the self-esteem level and psychosocial development of young people. Certain malocclusions and orthodontic treatment needs are related to QOL and they can affect the psychological development and social skills of adolescents and young adults, who are the most common orthodontic patients.^{17,19} Still, we lack evidence that orthodontic treatment can improve QOL to a measurable degree in later life.²⁰ Moreover, when the self-esteem of a teenage patient before orthodontic treatment is taken into account, it appears that treatment has little positive influence on mental health and QOL in adulthood.²¹

The aims of this study were to investigate the relationships among malocclusion, dental esthetics-related QOL, and self-esteem, and to evaluate the predictive value of craniodentofacial characteristics and dental esthetics-related QOL on the level of self-esteem in adolescents and young adults while controlling for the effects of sex and age.

It was hypothesized that with increased malocclusion severity, dental esthetics-related QOL and

self-esteem would decrease. Also, it was expected that craniodentofacial characteristics would be significant predictors of self-esteem but that self-esteem would be more influenced by self-perceived dental esthetics and the psychosocial impacts of dental esthetics.

MATERIAL AND METHODS

The study was cross-sectional, and the sample included 200 white subjects (58% female) aged 14 to 33 years (median, 22 years; interquartile range, 20-23 years). They were high school and university students and were approached and asked to participate in their dormitory, at classes, or at the university dental clinic. Participation was voluntary. According to several statistical guidelines, a sample size of 200 was considered large enough for sufficient power to detect associations between 1 outcome and 10 predictors in multiple regression.²² The exclusion criteria were mental retardation, craniofacial syndromes (except for surgically treated clefts), and ongoing orthodontic treatment. The subjects were examined by 4 examiners (A.G., M.J., D.M., and A.P.) from July 2012 to November 2013. The questionnaire was self-administrated and included the validated Croatian version of the RSES¹³ and the validated Croatian version of the PIDAQ.¹⁰

The RSES is a unidimensional 10-item instrument based on a 5-point Likert-type scale (1, strongly disagree, to 5, strongly agree). Five items have positively and 5 have negatively worded statements. The score scale ranges from 10 to 50, with a higher score meaning higher self-esteem. The RSES is practical for scientific purposes because it is brief and has high internal consistency, with a Cronbach alpha factor of 0.77 to 0.88.²³ The test-retest reliability of the original RSES ranges from 0.82 to 0.85.²³

The PIDAQ is an OHRQOL instrument composed of 23 items that uses negatively and positively worded items scored by a 5-point Likert scale, ranging from 0, strongly disagree, to 4, strongly agree. The explanatory and confirmatory factor analysis to validate the Croatian version stated that the 4-factor structure of the questionnaire with the same groupings of items into domains was the same as the original version: social impact (8 items; score range, 0-32), psychological impact (6 items; score range, 0-24), dental self-confidence (6 items; score range, 0-24), and esthetic concern (3 items; score range, 0-12).¹⁰ The Croatian version has a Cronbach alpha consistency of 0.79 to 0.98, and test-retest reliability over 0.85.¹⁰

Craniofacial typology was estimated by the method of Martin and Saller²⁴; it characterizes subjects as

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