

Self-reported satisfaction with teeth and associated factors in 12-year-olds

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Objectives: To explore self-reported satisfaction with teeth in 12-year-old children, and to study whether satisfaction was associated with child characteristics, oral health behaviours and previous experiences with teeth and dental treatment. **Methods:** Data were retrieved from dental records of 4725 children and questionnaires including information on satisfaction with teeth, gender, parents' origin, parents' education, dental anxiety, tooth brushing frequency, use of dental floss, toothache, pain at last dental visit and caries. Informed consent was obtained from all participants. Data were crosstabulated and tested using Chi-square statistics and multivariable logistic regression. The study was ethically approved.

Results: Most children (68%) were satisfied with their teeth. Children who were dissatisfied with teeth were more likely to have negative experiences with their teeth and dental treatment with higher probability of having experienced toothache (OR 1.6, CI 1.4-1.8), pain at last dental visit (OR 1.4, CI 1.2-1.6) or dental anxiety (OR 1.2, CI 1.1-1.4) than other children. In addition, children with caries in their primary (OR 1.4, CI 1.2-1.7) and permanent teeth (OR 1.2, CI 1.0-1.4) were more likely to be dissatisfied than those without caries.

Conclusions: Most 12-year-olds were satisfied with their teeth. The strongest indicator for being dissatisfied was experiences with toothache, pain at last dental visit or caries while parents' origin and education were less important.

Keywords: Caries, children, dental anxiety, pain, self-reported satisfaction

Introduction

Oral health is part of general health and well-being and contributes to the development of healthy children and adolescents (Sheiham, 2005). Up to the age of 12 years, most parents take care of their children's oral health (Christensen, 2004). After this age, children enter adolescence and gradually become responsible for own oral health and well-being (Broberg and Klingberg, 2017).

Adolescence is a sensitive developmental period in which puberty and rapid brain maturation lead to new behaviours (Viner *et al.*, 2012). Consciousness of body image and oral health increase during childhood, and early adolescence is a relevant age for studying satisfaction with teeth and oral health.

The term satisfaction with teeth and oral health includes several components. Satisfaction is a subjective term that includes all positive and negative experiences with teeth or oral health. Being satisfied with one's teeth includes for instance no pain, cavities, tooth discoloration and other issues related to oral health. Subjective well-being is usually measured with self-reports that evaluate teeth and oral health and one's own level of satisfaction (Diener 2000). In one study, two-thirds of adults reported satisfaction with their teeth. Satisfaction was related to various factors, such as education and economy, oral health-related factors, oral symptoms and functional problems caused by poor oral health (Ekbäck *et al.*, 2010). Another study including adolescents found that a quarter were dissatisfied with oral health. Satisfaction was linked to gender and ethnicity, perceived treatment needs, oral health impact on daily activities and clinical aspects, such as toothache, malocclusion and caries (Rebouças *et al.*, 2018). Studies of children's satisfaction with their teeth and

oral health have been conducted using parents' reports, but parental satisfaction is not necessarily valid as it may differ from children's opinions (Woodward *et al.*, 1996). During early life children have their own experiences with dental health and dental care that may influence their satisfaction with their teeth.

The use of single-item global indicators is one method to evaluate oral health (Locker and Gibson, 2005). While studies about satisfaction with teeth exist among adults, there is a paucity of studies on satisfaction with teeth in children and early adolescence.

The aim of this study was to explore self-reported satisfaction with teeth in 12-year-old children, and to study whether satisfaction was associated with child characteristic, oral health behaviours and previous experiences with teeth and dental treatment.

Material and methods

In Norway, all children and adolescents below 19 years of age are entitled to dental treatment free of charge and nearly all children are enrolled. All 12-year-olds in one county, 7595 children, were invited and 4779 participated. Fifty-four children were excluded because of lack of data. The sample therefore included 4725 children.

Data were retrieved from dental records and questionnaires completed by the children in connection with routine examination. All examinations were performed in dental clinics in the dental services when the children were 12-years of age. The questionnaire included information about children's satisfaction with their teeth, child characteristics, oral health behaviours and previous experiences with teeth and dental treatment.