

ORIGINAL ARTICLE

## A qualitative study of the influence of poor dental aesthetics on the lives of young adults

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### Abstract

**Objective.** Although many countries offer some publicly funded orthodontic treatment for children, not all conditions receive treatment and some adolescents enter adulthood with persisting poor dental aesthetics or malocclusions. The aim of this study was to generate a theory highlighting the main concerns of young adults, either native-born or of immigrant background, with poor dental aesthetics and the measures they adopt to manage their condition in everyday life. **Material and methods.** A qualitative method, classic grounded theory, was applied in order to generate a substantive theory highlighting the main concerns and managing mechanisms of 13 strategically selected 19- and 20-year-olds with poor dental aesthetics. Open interviews were conducted with each participant, the topics covering different aspects of social and dental conditions. **Results.** A core category and three conceptual categories were generated. The core category was labelled “Being under the pressure of social norms” and was related to categories explaining three different ways in which these young adults handle their main concern: (1) avoiding showing their teeth; (2) minimizing the importance of appearance; and (3) seeking orthodontic treatment. The theory offers the potential for improved understanding of young adults who, despite poor dental aesthetics, are managing well with life, and also of those who have not adjusted well. **Conclusions.** In early adolescence it may be problematic to make decisions about orthodontic treatment. Undisclosed dental fear can be an important barrier. Some of the young adults in the present study would probably benefit from treatment.

**Key Words:** *Dental aesthetics, importance of appearance, orthodontic therapy in adolescence, social norms*

### Introduction

In Sweden, orthodontic treatment is provided free of charge through the National Dental Health Service until the age of 19 years. Priority is based on greatest need, and priority is given when a malocclusion is associated with risk of tissue damage, functional disturbances or psychological problems. Various indices may be applied to aid selection of cases [1–5]. These indices are based on professional assessment of severity of malocclusion. The indices also include assessment of aesthetics. For example, cleft-lip patients are given highest priority. Indices are used to select patients for treatment, but also to exclude patients with minor orthodontic conditions from being eligible for treatment.

When 19-year-olds leave the free School Dental Service in Sweden, some have persisting functional

malocclusions or poor dental aesthetics [1,2]. One reason may be that the condition was assessed as a mild deviation from normal, for which no treatment was offered. Another reason may be that at the time treatment was offered, in early adolescence, the individual was not concerned about the appearance and function of their dentition and declined the offer of orthodontic treatment. A third reason may be relapse of earlier treatment.

Adolescence is a period of transition from childhood to adulthood and from parental influence to peer influence. The peer group is very important to young people, and the rigid norms in group cultures represent stability in the turbulent years of adolescence [6]. Of particular importance are social norms, i.e. unexpressed rules and expectations of values, beliefs, attitudes and behaviour within this social

group [7]. One such social norm of great importance to the adolescent is attractiveness.

The face, smile and teeth comprise the first impression of another person and this first impression seems to be more and more significant for further acquaintance. People usually agree about who is physically attractive and who is not, and the phrase “beauty is in the eye of the beholder” is not supported by studies of attractiveness [8]. Research has shown that physically attractive people tend to achieve higher grades in school [9], and that children’s physical attractiveness influences teachers’ expectations [10].

The impact of a malocclusion on a child’s self-perception may be considerable [11] and have a negative influence on an individual’s oral health-related quality of life [12]. In a 20-year evaluation of the psychological benefits of orthodontic treatment, Kenealy et al. [13] showed that, from a phenomenological perspective, during adolescence the dentition is important to the individual’s perception of self, whereas in adulthood other psychological and social factors are of greater significance for the maintenance of general health and psychosocial well-being. In a study of 15- and 16-year-olds, Bernabé et al. [14] found that those with a history of orthodontic treatment were less likely to report physical, psychological or social impacts on their everyday achievements than those without treatment.

A study design applying qualitative research methods offers the potential to explore social and cultural attitudes to orthodontic treatment, and to aid in understanding how young people, without direct influence of their parents, interpret the importance of dental appearance in their daily lives. Grounded theories (GTs), based on empirical data, are likely to offer insight, enhance understanding and provide a meaningful guide to action [15]. Different versions have developed over time and the GT has thereby been modified by the era within which it exists [16].

Some young adults have declined orthodontic treatment offered during adolescence and some have not been assessed as eligible for treatment. Are these young school-leavers likely to be successful contented adults despite poor dental aesthetics? Why do some young adults actively seek orthodontic treatment while others appear unconcerned or able to accept their poor dental aesthetics? How do young people perceive the influence of persisting poor dental aesthetics on their personalities and facial appearance and what measures do they adopt in order to mitigate the impact of this condition? Little is known about these important aspects of orthodontic intervention. Although patient cooperation during orthodontic treatment is important for a successful outcome and the psychosocial impact of undergoing orthodontic treatment during adolescence is considerable, there are very few qualitative studies in this field. Greater understanding of these phenomena from

the patient’s perspective would aid the clinical orthodontist in decision making about the timing of treatment and also in assessing the potential psychosocial impact of excluding some children from treatment for objectively determined minor deviations. The aim of the present study, based on a GT approach, was to generate a theory highlighting the main concerns of young adults, either native-born or of immigrant background, with poor dental aesthetics, and the measures they adopt to manage their condition in everyday life.

## Material and methods

### *GT*

The investigation was based on guidelines for the classic GT method [17], by which a model or substantive theory was inductively derived from systematically collected and analysed empirical data. Collection and analysis of data were done as part of a simultaneous process (i.e. each interview was analysed as soon as transcribed) and closely related to the theory generation. In line with GT guidelines, we did not begin the project with a hypothesis or preconceived theory. Rather, we began with an area of interest and allowed the problems and theory to emerge from the empirical data. In the analysis, we gradually strived to raise the informants’ descriptions to a more abstract level of conceptualization. By this, we strived to highlight the general pattern underlying the participants’ collective words. The aim of classic GT is to generate a set of conceptual assumptions or hypotheses forming a substantive theory. Theory that emerges from collected in-depth interview data may be more likely to approximate “reality” than theory derived by putting together a series of concepts based on experience, or solely based on speculation, i.e. how the researcher assumes that things ought to work.

### *Study group*

The 13 participants in the study, seven females and six males aged 19–20 years, were strategically selected from participants included in a longitudinal study of prevalence of malocclusions [18,19] conducted in two towns in southern Sweden. The selection was based on gender, family origin (native-born or immigrant) and persisting poor dental aesthetics. The purpose of strategically selecting the participants was to form a heterogeneous group and thereby maximize the variation of experiences among the participants. Seven of the participants in the study sample had parents who were both born in Sweden and six participants had parents who were both born in Asia or the former Yugoslavia. The following inclusion criteria were

applied. Persisting poor dental aesthetics, defined as overjet  $\geq 6$  mm, overjet  $< -1$  mm or contact point displacement  $> 4$  mm or contact point displacement 2–4 mm in combination with strained lip closure.

These deviations from normal alignment and occlusion are thus defined by the orthodontist and classified as “moderate”, “need” or “great need” for treatment according to the Index of Orthodontic Treatment Need [20].

#### *Data collection*

An open interview was conducted with each participant by the first author (E. J.) in a quiet room at the Orthodontic Department. The taped interviews, of 30–50-min duration, were conducted in open and conversational style. An interview guide was used which included some introductory themes. The interviews covered such topics as family situation, geographic origin, history of earlier orthodontic consultation and treatment, factors influencing the decision to undergo or not to undergo treatment, consequences of the decision, dental appearance, body image, interpersonal relationships and future aspirations. These topics could be raised by the informants and/or the interviewer. The interviewer also asked probing and follow-up questions when relevant.

#### *Data analysis*

Each interview was transcribed and analysed line-by-line as soon as it was finished. Initial codes, catching the meaning of data, were identified and labelled concretely. Codes with similar meaning were clustered to form more comprehensive categories, which were given labels on a more abstract level. The categories were then compared and further analysed by identifying their properties or dimensions, i.e. subcategories were formed. Thus by constantly comparing codes with each other and by clustering codes with similar meaning into categories, which were also constantly compared for similarities and differences, conceptualization of data was done. During the analysis process, questions were asked about the data, such as What is this all about? How can we define it? What is the main concern? How do the informants manage this concern? In the analysis process a core category emerged, which was central to the data and highlighted the participants' main concern. This core category was labelled “Being under the pressure of social norms” and could be related to all other categories and subcategories. Then theoretical sampling was performed, where we strived to “saturate” each category with additional information from new or existing data. Saturation is a somewhat “elastic”

concept, but means that new data do not add new information or that new data fit into existing categories. During the entire analytical process, memos were made. The memos included pictures, short reflections and assumptions based on the data. Memos were also a help in remembering the feeling and sense of the interviews.

#### *Ethical considerations*

The research design was approved by the Research Ethics Committee, Faculty of Health Sciences, Linköping University, Sweden (Dnr M5-07, T118-07). Requirements concerning informed consent and confidentiality were fulfilled.

### **Results**

In the analysis a core category and three conceptual categories were generated and formed a substantive theory explaining the main concerns of young adults with poor dental aesthetics and how they deal with this condition. The core category was labelled “Being under the pressure of social norms”. This includes concerns that young people did not want to be “culturally unacceptable” or perceive themselves as being “undesirably different”. Nor did they want to be regarded as outsiders by friends or significant others. The core category is related to categories explaining three different ways in which these young people accommodate the main concern related to their malocclusion, i.e. “Avoiding showing the teeth”, “Minimizing the importance of one’s appearance” and “Seeking orthodontic treatment” (Figure 1). The core category and the three explanatory categories are further described below.

#### *Being under the pressure of social norms*

The social norms are produced by “stereotyping” of attractiveness on television, in magazine advertising and on the internet. In fact, the young people did not want to be influenced by media and the beauty culture. However, most of them were affected, consciously as well as unconsciously, by these often subtle signals about behaviour and demeanour that make a person attractive. Even if they thought that the models on television were extremely unnatural, stereotyped and had a negative influence, the beauty culture had an inevitable influence. A major issue for these young people was the opinion of those around them. It was important to have friends, and therefore friends and their opinions were the most important factors influencing these young people.

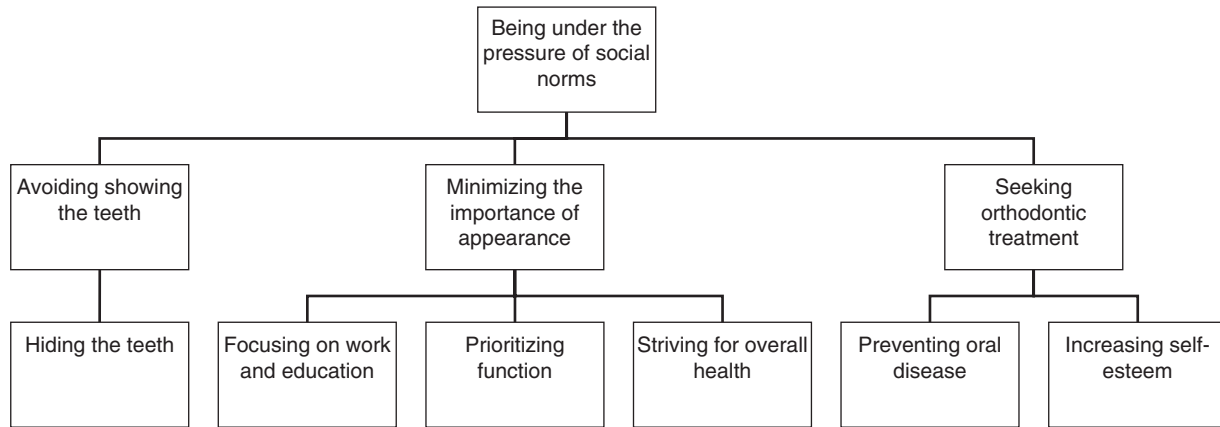


Figure 1. A substantive theory explaining the main concern of adolescents with poor dental aesthetics, i.e. “Being under the pressure of social norms”, and their ways of coping with this (“Avoiding showing the teeth”, “Minimizing the importance of one’s appearance” and “Seeking orthodontic treatment”).

Even if you had good self-esteem, a question or a negative comment from a friend would hurt. One quote from the interviews illustrates this:

... if somebody remarked that my teeth were different, that would tip the balance between treatment and no treatment.

In fact, one should keep in mind that friends, who accordingly influenced these young peoples’ attitudes and preferences, were also probably influenced by media stereotypes and the beauty culture and the “ideal people” portrayed in advertising and on television. Other important factors were the attitudes of the professionals, i.e. the dental staff and orthodontists. Actually, these professionals were also influenced by the same advertising but regarded oral status from a health perspective. According to the data, at the same time as these young adults are striving to conform with social norms, they also consider it very important to express their own individual “style” or look. The boundaries between acceptable and unacceptable appearance were quite narrow. You should be tall and slim but not too tall and not too slim. Also, your teeth should be white but not too white, because it is unnatural. Some of the informants in the present study were embarrassed to admit that they really wanted orthodontic treatment now. They thought it would be interpreted as vanity.

The informants considered that dental aesthetics were important for self-esteem but not for a successful career. However, they thought that a pleasant appearance was important for career prospects. This study did not disclose any gender differences.

#### *Avoiding showing the teeth*

This category, together with the subcategory “Hiding the teeth”, was related to the core category. The

interviews showed that almost half the participants were not really satisfied with their dental appearance. One way of dealing with this was to avoid showing their teeth. The participants using this strategy were very conscious of their poor dental aesthetics: for them, it was very important not to be considered different from the norm.

*Hiding the teeth.* Hiding or not showing too much of their teeth was mentioned as a means of dealing with the issue of poor dental aesthetics. The most common reaction was “never smiling for a photo”. This was not usually a problem, because the young adults had not smiled for photos since they were children. Those who perceived their problem to be more severe stated that in order to avoid showing their teeth they seldom smiled or laughed and did not talk much. The interviews disclosed that another way of dealing with the problem was to put a hand in front of their mouth when laughing or speaking. Two quotes from the interviews will illustrate this strategy:

...you know, you feel ashamed if there is a guy around. I can’t bear it if someone looks at me side-on when I am laughing. They might see my teeth, and they look so strange.

...actually, if I am going to look for a job I will not open my mouth, that is what I think.

This problem, not showing the teeth, was strongly associated with the type and severity of the participant’s malocclusion. The condition that bothered the informants most was increased overjet or crowded incisors, with an associated incomplete lip closure. The greatest problem seemed to be incomplete lip closure. A mild reverse overjet did not seem to bother them. A trait that the interview participants considered unattractive in other people was a smile line giving a disproportionate display of gingiva in the maxilla.

Actually, the participants who avoided showing their teeth seemed dissatisfied with their dental aesthetics, but they had handled the problem in their own way. They would not have accepted orthodontic treatment even if it had been offered. The main reasons for refusal were anxiety about pain and the feeling that fixed appliances were ugly. The informants tried to console themselves that they were contented and happy, and focused on other things. All informants using this strategy were of immigrant background.

#### *Minimizing the importance of one's appearance*

The second category, "Minimizing the importance of one's appearance", contains the subcategories "Focusing on work and education", "Prioritizing function" and "Striving for overall health". The category describes how the participants arrived at a decision to refuse or abandon orthodontic treatment and accept the appearance of their teeth. While poor dental aesthetics had previously been a problem, this was no longer a concern. However, the participants were well aware of the existing beauty culture and the influence of individuals.

*Focusing on work and education.* The informants considered that they had matured and found their own personal style. Ongoing education or seeking entry into a course of education was very important and took a lot of time and commitment. The values of their work colleagues were different from those of their schoolmates and they assumed that their dental appearance would not negatively influence their career prospects. They considered that it was too late to start orthodontic treatment. Having accepted this, they were no longer as concerned about their dental aesthetics and their physical appearance. Two quotes from the interviews illustrate this strategy:

I am more mature, I don't think about it any more, I have more important things to think about. I regret that I did not accept treatment when it was offered earlier, but not now that I am so old. Now it is too late. I do not want it any longer.

*Prioritizing function.* The main meaning of the strategy "Minimizing the importance of appearance" was that the role of the dentition is primarily functional. Adequate function was considered much more important than perfect aesthetics. However, toothache or strong deviation from normal appearance, with negative social consequences, could be reasons for seeking treatment. Otherwise, the informants said "you should just be happy with things as they are". Some informants sometimes felt anxiety about the long-term health and function of their teeth. They

thought it was very important to have regular dental examinations.

*Striving for overall health.* The informants considered that teeth were important for general somatic health. Teeth should look natural, clean and fresh. A fresh-looking mouth made the whole person look fresh. Teeth should be bright, but not too white. They considered it important to take good care of oneself and one's body. That nice-looking teeth were also very important for self-esteem was acknowledged by the participants as sad, but true. However, other factors were also important for high self-esteem, such as having good friends, a caring family and colleagues and acceptable physical appearance. The informants thought that having good teeth was important for their future, but not for their career prospects.

In this study, those participants who had accepted their poor dental aesthetics considered the following to be the most important personal qualities: personality, self-esteem, self-confidence and individual style. The main reason that these participants had not undergone orthodontic treatment in their early teens was their perception at the time that it was not necessary. This strategy was most often used by informants of Swedish background.

#### *Seeking orthodontic treatment*

A third way of dealing with the problem of poor dental aesthetics was to seek orthodontic treatment. The participants using this strategy gave various reasons for not undergoing orthodontic treatment earlier. For some the normative need was assessed as minor and did not fall into a category eligible for treatment by the School Dental Health Service. Some participants had had an unexpressed dental fear and had refused treatment during childhood and adolescence, but were now ready to undergo orthodontic treatment. Although the cost of such treatment is relatively high, these informants thought it would be worth it. Two subcategories were included in this category, "Preventing oral disease" and "Increasing self-esteem".

*Preventing oral disease.* The informants considered healthy teeth to be important and they therefore sought treatment to prevent oral problems in the future. They stressed the importance of having healthy teeth throughout life: "the dentist told me about the risk of trauma to my anterior teeth, and I want to avoid that".

*Improving self-esteem.* These participants were unable to accept their poor dental aesthetics and were therefore prepared to pay for the treatment themselves. Their perception was that perfect teeth were important

for their self-image and well-being. They wanted to set a good example for their future children. The interviews disclosed that these informants had extremely high standards in every respect: "I would be much happier if my teeth were straightened".

### *Discussion*

This study is based on in-depth interviews of strategically selected participants in late adolescence with well-documented orthodontic histories. The information collected was subsequently analysed, in order to evaluate the influence of poor dental aesthetics on the lives of young adults.

Qualitative research can be used to explore substantive areas to gain deeper insight and new perspectives. Qualitative methods may also be used to disclose intricate details about such phenomena as feelings, thought processes and emotions that are difficult to extract or learn about through more conventional research methods. This was the approach of the present study.

A possible weakness of this study was that the interviewer was an orthodontist, since professional attitudes and preconceptions may influence the interviews and the generation of the theory. Another possible weakness is the number of informants. However, the saturation was considered sufficient.

In a study of teenagers' decisions about whether or not to undergo orthodontic treatment, Trulsson et al. [21] reported that teenage boys had difficulty expressing themselves in in-depth interviews. In the present study, with somewhat older informants, no such problems arose: the participants were able to express their opinions on, for example, appearance and the culture of beauty.

The GT method applied in this study generated a substantive theory identifying the main concern of young adults with poor dental aesthetics as the pressure of social norms. The theory discloses three different mechanisms adopted by the participants to cope with their main concern about their poor dental aesthetics, namely avoiding showing their teeth, minimizing the importance of appearance and seeking orthodontic treatment. The core category includes the power of external factors such as being like everyone else, not being different or deviating from the ideal. The interviews disclosed that one of the external factors that supported the core category, "Being under the pressure of social norms", was actually group pressure. It is important for young people to feel that they can identify with and fit in with their peers.

In the study, the informants perceived that they were conscious of most of the existing norms and felt ashamed that they felt compelled to adhere to them, even against their better judgement. Similar findings are reported by Foucault [7]: if somebody broke the

norms, it was very obvious. Stress theory highlights pressure from peers and society to follow the conventions. It can be very stressful to individuals to follow social conventions, especially if they conflict with one's own aims and values [22]. In the present study, while some informants felt stressful pressure from those around them, some did not seem unduly concerned.

In this study, the informants agreed with the concept that nice-looking people were more successful and that a pleasant appearance was important for career prospects. They also agreed that television had a great influence and even though they thought that this was not always for the good, they could not fully ignore it.

With respect to the gravity of poor dental aesthetics, a mild reverse overjet did not seem to bother these young persons. The informants considered that disproportional gingival display in the upper anterior region was ugly and their own main concerns were increased overjet or crowded upper incisors with an associated incomplete lip closure. These findings support those from other studies in different cultures. Abu Alhaija & Al-Khateeb [23] reported that a mild reverse overjet is aesthetically acceptable to young people. Van der Geld et al. [24] reported that critical factors for an aesthetically acceptable smile were tooth colour and gingival display. In a study of 18-year-old males, Traebert & Peres [25] showed that incisor crowding and anterior maxillary irregularity > 2 mm had an impact on smiling, laughing and showing teeth without embarrassment.

A study by Brown et al. [26] disclosed that, compared to adults ( $\geq 18$  years), adolescents (14–17 years) are more vulnerable to undesirable psychological effects of orthodontic treatment. During adolescence, a person is very sensitive to the responses of significant others, especially concerning appearance. A decision about treatment involving appearance is better delayed until the individual has passed through adolescence and is more confident of his/her identity [21,27]. The findings of the present study support this approach to the timing of orthodontic treatment in adolescents, who are sensitive to social pressure.

The results of the study make it clear that it is not always easy for a teenager to have an overview of consequences and alternatives and to make a balanced decision about orthodontic treatment. Many young people are concerned about pain and therefore say that they do not want any treatment. In this study, we found that dental fear seemed to be a major problem for the participants, and especially for adolescents with an immigrant background. One reason for this may be a different experience of dental care for immigrant children compared to the Swedish participants. In general, dental fear is a common problem and will probably be found in many different groups of children, irrespective of geographic background.

Some informants wanted treatment for their poor dental aesthetics in order to improve their self-esteem. At the time of the interview, the self-esteem of these informants was probably quite low. Young people with less stable identities may find it difficult to resist the perceived pressure of professionals, the media and reference groups [21].

#### *Cross-cultural variability*

Although there are obvious differences in standards of beauty across cultures, there are also cross-cultural similarities [28]. In the present study, although it was based on a limited sample, there was a tendency for the informants of immigrant background to be more concerned about dental aesthetics than those of Swedish background. The former were more likely to want to avoid showing their teeth, or intended to seek orthodontic treatment. One reason may be that these young adults are more critically aware of their appearance. In an earlier study of orthodontic treatment needs in 12- and 13-year olds of different geographic origins, Swedish adolescents had a slightly higher frequency of malocclusion than those of immigrant background [19]. A realistic scenario is that young people who do not feel comfortable about themselves are also tired of school, and therefore also often less successful at school work. They want to do well but they cannot. Instead, they concentrate on their appearance, which is something they can control. This may explain why some of the young people in our study were more concerned about dental aesthetics than others. Therefore, it is important to improve self-esteem in adolescents, in order to help them to resist the pressure of social norms.

The present findings add to our understanding of the emotional and psychosocial status of adolescents with persisting poor dental aesthetics.

- (1) Having to make a final decision about orthodontic treatment at an early age is problematic for some individuals. In early adolescence, undisclosed dental fear is an important barrier to acceptance of orthodontic treatment. Funding systems with a cut-off age for treatment should be extended to an age beyond that of the participants in this study.
- (2) The theory generated by this study can be applied to improve our understanding of young adults who have adjusted to living with poor dental aesthetics and also to identify those who are not as well-adjusted and would probably benefit from treatment.

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