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Adolescents' views of oral health education. A qualitative study

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Abstract
The objective of this study was to investigate adolescents' perceptions and desires with respect to oral health education. A series of focus group sessions was conducted with adolescents in schools. The groups comprised an average of 6 individuals, with a total of 34 participants. The main themes of the discussions were the informants' perceptions of the oral health education in different settings and under varying circumstances. The discussions were transcribed verbatim and analyzed according to the basic principles of Grounded Theory. One of the most important issues appeared to be the dental personnel considering the individual as a subject and not as an object. The adolescents in the study were uncertain about their knowledge of oral health. Often, the participants expressed a wish to be taught more at the dental visit. Information in schools was sparse. The support of parents was acknowledged but little discussed. The methods used in advertisements to describe dental products were met with skepticism. These should not be imitated in oral health education as this might undermine the credibility of the dental services. Girls were perceived to be more interested in health than boys were. Two core categories labeled "credibility" and "confidence", which interacted continually, emerged from the data in the analysis. The results indicate that the credibility of the intermediary of the health messages is essential, as is their ability to create confidence. Thus, oral health education among adolescents is more likely to be successful when credibility and confidence are perceived.

Key Words: *Adolescence, focus groups, health promotion, oral health*

Introduction

In Sweden, today, most children and adolescents have good oral health, as registered by the dental services [1]. Although oral health has improved steadily during recent decades, there are signs that it is leveling out both in Sweden and in the other Nordic countries [2–5]. Diminishing resources for social and health services during the downturn in the economy in the 1990s brought about increasing demands for efficiency in dental care, resulting in new treatment strategies such as individualized recall periods [6]. At the same time, indications suggest that it is difficult to reach young people with oral health education [7].

Health promotion has been defined as "the process of enabling people to increase control over and to improve their health" [8]. An important part of health promotion is health education, including information, motivation, and training skills [9,10]. Health education is a prerequisite for healthy choices and behavior, and for enabling self-care [11]. In Western countries, dental services have traditionally targeted children and adolescents for oral health education in clinics or in extramural settings, such as schools.

As early as 1970, the World Health Organization (WHO) formally recognized that dental health education should take into account both individual and external factors [12]. However, the planning of oral health education has often begun from a professional perspective. In latter years, individuals' aspects have been increasingly acknowledged [13–15]. However, because traditional quantitative methods have a limited ability to capture subjective perspectives, the qualitative approach is often a vital complement to the quantitative [16].

In health education, the perceptions of the individual are important, both in planning and evaluating applied measures [17,18]. The importance of a patient-centered oral health education has been emphasized [19]. This is particularly significant for young people, as their perceptions of health and health risks can differ from those of adults [17,20]. Adolescence is a period of

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life when many behaviors and attitudes are molded. It is therefore important that health-care messages be adapted to the developmental stages of adolescence [21,22]. However, adolescents' own perceptions of oral health have been little studied [20,23].

Gender has been recognized as an important health factor [24–28]. Two main types of explanatory models for gender differences in health and illness can be recognized within medical research: biological/genetic models and sociocultural models [29]. Biological/genetic models focus on differences in physiology, genes, and hormones, whereas sociocultural models emphasize socially determined factors. In dentistry, motives for dental hygiene have been found to differ between girls and boys [20,30,31]. Macgregor & Balding (1991), for instance, found that girls more often gave cleanliness or cosmetic reasons for mouth care [32].

The aim of the present study was to investigate how adolescents perceive oral health education and what they expect from it. A second aim was to apply a gender perspective to the investigation.

Material and methods

Participants

A purposive sampling of adolescents was made in collaboration with school nurses in Skaraborg County, Sweden. Skaraborg County is a rural area with a few medium-sized towns and small municipalities. The choice of informants was related to age (senior level schools, 14 to 15-year-olds; upper secondary level, 18 to 19-year-olds) and gender [33]. In purposive sampling, informants are recruited according to the aim of the study in order to generate as rich and varied a material as possible [34]. The school nurses gave the same information to all the classes and were instructed, based on their knowledge of the students, to recruit participants who represented a broad range of personal characteristics. All potential informants were also given a written invitation with information about the study. Letters were sent to the parents of those under 18 years of age. Written consent was collected from the informants and, for the younger informants, from their parents. A total of 34 adolescents participated.

The Medical Faculty Ethics Committee of Göteborg University approved the study.

Data collection

The study was carried out in a series of focus group discussions during 2003–2004. Two gender-specific and one mixed group were created for each school level, six groups in all. The sessions were held in small rooms at the schools. The groups constituted four to nine persons sitting around a table—one group with four, three with five, one with six, and one with nine participants. Group size was intended to be four to six persons. In one class, however, all boys (nine 15-year-olds) wanted to join the group.

The discussions were moderated by the author (a dentist), who had been trained in the facilitation of focus groups, and lasted approximately 50–70 min. An observer with a non-dental profession sat to the side to assist in the note-taking of non-verbal communication. Before the tape-recorder was turned on, general information about the study, including confidentiality and the voluntary nature of the study, was repeated.

After each session, the observer was given the opportunity to ask the group additional questions. Moreover, when the participants had left the room, the moderator and the observer summarized and discussed each others' impressions of the session. When the last focus group session was completed, no new themes or data emerged. That is, the saturation point was considered to have been reached.

Focus groups

A focus group can be defined as a form of group interview that makes use of communication to generate data [35]. The interview is centered on a specific topic—the 'focus' of the research. The idea behind the method is that group processes that arise from the interaction between the participants can help them to explore and express their views more easily than in an individual interview. Such groups are particularly useful for exploring people's experiences and for investigating their thoughts and motivations [36]. In recent years, focus groups have been increasingly used for examining experiences of the health services and disease [37,38]. The method facilitates critical feedback and explorations of solutions, which is valuable when the aim of the research is to improve services [35].

The discussion outline

The areas of focus for the group discussions were the adolescents' perceptions of the oral health education that they had experienced in different settings and under varying circumstances. Typical entry points were as follows: "When you got this invitation and realized that the topic was dental care, what did you think?"; "When you last visited the dentist, what happened? What was it like?"; "Where do you find (health) information about your teeth and mouth?"

Data analysis

The discussions were tape-recorded and transcribed verbatim. The author listened to the tapes and added the observer's notes to the transcripts. The data were analyzed according to the basic principles of the constant comparative method [39]. Subsequently, the data were interpreted by the author and repeatedly discussed with a sociologist who had access to the entire data set.

The text was initially coded by underlining substantive words and phrases in participant statements. Related codes were grouped in categories. Codes and categories were continually compared with the interview protocols. The commonalities and contradictions reflected in the data were systematically analyzed. Attempts were made to represent all the voices in order to cater for the range in talkativeness and opinions in the groups. Two core categories—related to all categories and representing the central phenomena of the problem investigated—emerged from the data. The core category or categories emerging from the analysis of qualitative data represents the highest level of abstraction. Nevertheless, it is important that they are close to the raw data, i.e. the informants' own statements.

Results

Most informants were willing to help and to contribute to the study. A few were hesitant yet agreed to participate. After the analysis was completed, the observer was asked to confirm or reject the essentials of the interpretation. The author, the observer, and the sociologist reached overall agreement on the interpretation.

Because of the nature of qualitative research results presented in textual form, the exposition of results tends to be more extensive than would be seen from a quantitative study.

In the analysis of data, two core categories emerged, giving a deeper understanding of (successful) oral health education among adolescents: "credibility" (the quality, capability, or power to elicit belief) and "confidence" (trust or faith in a person or thing) [40]. These two central phenomena were related to each other and constantly interacted. The themes that emerged in the interviews concerning oral health education in different settings and outcomes of such activities were all related to the two core categories. Therefore, the following results are organized according to these themes.

Oral health education at the dental clinic

The amount of information given to the patients about how to take care of their teeth and mouth probably differed. Some considered the information they had received to be sufficient, but often the participants wished to be taught more at the dental visit. Although they can ask for information, the atmosphere is often perceived as strict and not confidential. There are obstacles to posing questions:

> *... They say that you have forgotten to brush the back teeth, for instance ... but you cannot ask ...' How should I brush them, then? You have to try, anyhow... you don't ask much when you are there.*" (Girl, 15 years)

One of the older boys said:

> "*I don't know what they are poking at.*" (Boy, 19 years)

The way information was given could be positively perceived, but was often considered strict and a little dull:

> "*They are not always so good at being cheerful.*" (Boy, 19 years)

Some related positive memories of receiving information at the dental services in childhood, in contrast to the present situation:

> "*... when I was little ... they showed me how to brush... and that was easy to understand ... like talking to a child ... that was good then. They can talk if they want to, but otherwise ...*" (Boy, 19 years)

Some informants spoke about occasionally being given oral health information. The messages from these occasions were vaguely remembered.

Experiences of instructions in oral hygiene were mostly positive, and their own responsibility was acknowledged:

> "*Anyhow, I think you get clear information ... then it is your own responsibility to find out ...*" (First girl, 19 years)
> "*... exactly ...*" (Second girl, 19 years)
> "*... if you want to know more.*" (First girl, 19 years)

However, there were clear indications that dental personnel often only attended to deficiencies in oral hygiene, whereas good hygiene rendered few or no comments. When they received no information, the adolescents could interpret this as a sign that there was nothing to worry about and no need to ask:

> "*I don't know if they need to give me information, because I didn't get any. I do not think I needed any.*" (Boy, 19 years)

Another boy said:

> "*... so perhaps you think that if the dentist doesn't say anything, then there's no problem.*" (Boy, 19 years)

Information on the use of floss was obviously confusing:

> "*... they keep telling you to floss, yes, you should do that ... but how, no...*" (First girl, 15 years)

And her friend added:

> "*You get the impression that it's not that important then ... you should brush every day, but floss ... that's something you can do now and then ...*" (Second girl, 15 years)

Dietary advice in the clinical setting was seldom discussed in any of the groups. In one group, information in earlier ages was remembered as "the usual old stuff", referring to restrictions in candy consumption.

The relationships at the dental services. The behavior of the dental personnel is important for creating a confidence-building setting, and most participants had perceived that treatment was properly carried out. However, some indicated that they did not feel they were "heard or seen". The dental personnel sometimes talked about, and not to, the patients, although they were present in the room. They were treated as objects and felt as if the personnel were "talking over their heads":

> "*. . . not nice to be discussed as a third person, when you sit there . . . Why not ask me? I know the things you're talking about* (she had had her premolars extracted for orthodontic reasons). *I am here! Instead, you are treated more like a patient, "We will take care of you, you shouldn't say anything". So, you just sit there . . .*" (First girl, 15 years)
> "*That's something that happens. . . you sit there, and they exchange words. . . OK, what should I do? Does it concern me, or should I listen at all?*"(Second girl, 15 years)
> "*Yes . . . and you don't want to say anything against . . . people you don't know, so you keep quiet . . . but you get a little irritated.*" (First girl, 15 years)

The quality of the clinical treatment, such as fillings, was not questioned in any group. However, the periods between dental checkups were discussed and were often perceived as too long. Some informants even thought that they had been forgotten by the dental services or lost in the recall system:

> "*They no longer had me in the computer or knew when I had last been there, because it was so long ago.*" (Girl, 15 years)

The main reason for individualized and extended recall periods in Swedish dental services today—that patients are placed in different risk categories and the length of the recall period depends on the risk category—was not discussed in any of the groups. In two of the groups (one with younger and one with older adolescents), distrust was expressed, and the dental services were suspected of postponing treatment until the patients had to pay themselves (in Sweden from the age of 20). A credibility gap was created:

> "*. . . some people say . . . that they save the cavities until you have to pay . . . then you panic a little. You feel that they charge you money, they do not think of a person's teeth . . .*" (First girl, 19 years)
> "*Yes, I was there some time ago . . . they said that I had a small cavity, but it was too small to fill and that I should come back next year . . . I was very angry and demanded that he fill it . . . so I'm going there again to have it done.*" (Second girl, 19 years)
> "*It is a little threatening to go around having cavities, you don't want that. It does affect you . . .*" (First girl, 19 years)

The second girl quoted was the only participant who reported a confrontation with dental personnel.

The pace of work at the dental offices is often high, and this was noted by the adolescents:

> "*You can see that they have a strict schedule. They have to try to be on time with their patients . . . but it is perhaps not always that good to go full steam ahead and hope that all will turn out well . . . And if you are there just once a year, it would perhaps be best to take the time to go through it (= the information) properly.*" (Girl, 15 years).

Oral health education at school

According to the participants in the focus groups, health information at school mostly dealt with general health. However, teaching in this subject seemed to be rare. Oral health education for younger age groups was often associated with the school context. This information was positively, but often vaguely, remembered and even related as "fairy tales". Furthermore, many of the informants could not recollect having received any oral health education at all at school. The reason for not being given information at school now, when the students were older, was speculated on in one group:

> "*. . . perhaps because they think we can manage it ourselves, now that we are older.*" (Boy, 19 years)

However, the discussions revealed an interest in learning "facts" about oral health in schools. And a "specialist" – a dental professional – would probably be the best for this task, according to the discussions. In most groups, the link between general and oral health was not recognized, and the credibility of the school personnel as mediators of oral health information was questioned. In most of the groups, the participants believed that the information should be given recurrently and adapted to age.

The school environment and how it affected the young people's behavior and choices were not discussed much in any of the groups. In one school, a "health week" had recently been held, but it made little impression on the informants.

Oral health education from other sources

Parents as models and support for healthy habits were spontaneously mentioned in all groups:

> "*. . . and then it's our parents, I suppose, who say what's good or bad . . .*" (Girl, 19 years)
> "*. . . they are probably important, even if it doesn't seem so.*" (Boy, 15 years)

However, this was not a topic that generated much discussion.

Advertisements about dental products in different media were met with skepticism, although advertising did make an impression. The messages are not congruent with those of dental care, which are

considered more credible. Advertisements were regarded as being focused more on products and profit than on promoting health:

> "*The adverts are just about the toothpaste, not about how you should take care of your teeth*." (First boy, 15 years)
> "*. . . it is how carefully you brush, and when, and that you get them really clean . . . the toothpaste doesn't brush for you*." (Second boy, 15 years)

The participants stated that they ignored advertisements if possible, but these were probably still having an impact as this subject caused lively discussions.

Outcomes of oral health education: knowledge and behavior

The participants were uncertain about their knowledge of oral health, both consciously and unconsciously. Although some considered their own knowledge to be sufficient in open statements, the subsequent discussions exposed uncertainty. There was a need to get feedback:

> "*. . . you don't know the standard, how much you should do or what you should do at all . . .*" (Girl, 15 years)

The causal relationship between insufficient approximal hygiene (flossing) and gingivitis was not understood by the informants in any of the groups. When flossing was practiced, it was often neglected after a short time:

> "*It's too tight, and then you force it too hard . . . then it starts to bleed . . . then it hurts . . . and then you skip it*." (Girl, 15 years)
> "*They keep telling me to floss . . . they (the teeth) sit so tight together, so it just bleeds . . . I think it's just tiresome*." (Girl, 19 years)

Thus, even if the informants did display knowledge of certain oral health topics, they did not always succeed in practicing healthy habits. Other activities were often given priority, especially under time constraints: *"If I am in a hurry in the morning"*.

The need for, and interest in, knowledge could be projected to other persons, who were considered to need it better:

> "*. . . more for those who have problems, they are probably more interested . . .*" (First boy, 19 years)
> "*Yes, more . . .*" (Second boy, 19 years)
> "*I don't often need to go to the dentist. I only go to the checkups*." (First boy, 19 years)

Gender

Regarding the second aim of the study, gender appeared to be significant for the participants' reasoning on oral health issues. The overall impression was that the conversation in the single-gender groups was easier. It was notable that in both the girls' and the boys' groups, girls were considered to be more interested in the issue.

> "*I don't think that the boys bother that much, don't know. . . if they do. . . but the girls probably think of it (= oral health) more*." (Girl, 15 years)
> "*Women, girls, in a way, they want to appear very good, doing the right thing all the time*." (Boy, 15 years)

However, both boys and girls were uncertain and seemed to know little about each other on this issue. The participants in the mixed groups did not consider that such gender differences existed.

In the girls' groups, the link between oral hygiene and body care tended to be discussed more in detail than in the boys' groups:

> "*You should be clean and tidy and smell good. Also in the mouth, that is important*." (Girl, 19 years)

Discussion

This study indicates the importance of the dental services meeting young people on a personal level and of seeing them as subjects, not merely as objects, of dental treatment. The school was a common setting for oral health education at a young age, according to the informants; however, this was not experienced by everyone. The families and media were other sources of information. Advertisements about dental products were met with skepticism. The adolescents in the study were uncertain about their knowledge of oral health, and they often expressed a desire for more information.

A quantitative approach, such as a survey, can only answer predetermined questions. When a phenomenon that is only partly understood is to be studied, a qualitative design is preferable [16,41]. The reason for choosing the method used in the present study was that adolescents' views of oral health education have been little studied. Focus groups are widely used for examining lay perspectives on clinical and health service issues partly because group discussions are noted to produce more critical comments than interviews do, as the participants reinforce the feelings and opinions vented by the others [35,42]. This was supported in the present study, where the informants were more critical than other Swedish adolescents had been in previous interviews about oral health [20]. The participants were selected by the school nurses, who knew them well. The aim was to select a variety of participants that was not controlled by the researcher. Pupils who were very negative to dental care or who had a dental phobia could be suspected of refusing to join the study. Yet, the discussions indicated that some participants in the focus groups were more, and others less, afraid of dentists. The groups could be considered representative of adolescents in the present context, but the findings should not be generalized to the entire

population. However, the qualitative information in the study gives a deeper understanding of oral health education among young people that could be of benefit in other settings.

The interaction was greater and the discussions livelier in groups where the participants knew each other well. Moreover, the general impression was that conversation was easier in single-gender groups. Studies performed in educational contexts confirm that a gendered communication often takes place [43]. Both boys and girls can experience a feeling of insecurity toward the other gender and therefore hesitate to express their opinions. That girls were perceived to have a greater interest in health was expressed by both genders in the study and should perhaps be seen in the light of different social and individual expectations of girls and boys [44].

The study indicates that what happens at the dental visit is essential. The dental setting is obviously not a permissive setting, and communication problems can arise. The patients must be properly informed and given the opportunity to ask questions so as to avoid the distrust shown by some informants in the study. The groups expressed the need for greater feedback about their own performance in respect of mouth care, presumably because it is easier to ask for such feedback in a confidential setting. The encounter between dental personnel and the individual is important and has been shown to have an impact on the outcome of the treatment [45]. The time for building interpersonal relationships is limited in the dental office, which was also noted by the adolescents.

Today, most young people in Sweden have good oral health, and the task of motivating good oral habits could be a challenge for dental personnel. Earlier studies have shown that knowledge alone does not bring about sustained behavioral change [46]. The findings in the present study indicate that information should be given recurrently. Although information had obviously been given, understanding was limited. Many of the young people wanted to learn more about how to manage their own oral health care. Assigning the need for information to other people, which was expressed by some participants, could in some cases be seen as a form of projection or denial, making the issue easier to handle [47].

Dietary issues were mentioned very little by the informants in the study. The consumption of soft drinks and other sugar-containing food is a growing problem, causing both dental caries and erosion [48]. Recently, this has gained considerable attention in the media and from health authorities, but mostly as being important for general health and as a cause of overweight and general diseases [49]. The findings in the present study indicate a need for dietary advice even in the dental setting. It is important to promote healthy choices as a whole.

Only during the lower grades had the participants been exposed to extramural activities by dental personnel who visited their schools. According to the findings in the present study, oral health education could be given at higher levels of school to teach facts about oral health care. These facts could then provide a basis for asking questions during the clinical visit. Uniform teaching in a neutral and less stressful surrounding than the dental office might be positive [50]. However, the messages must be close to the adolescents' own concerns [20]. The adolescents deemed dental personnel to be the most credible people for carrying out this task. In Sweden, as in many other Western countries, dental care and other health services are organized separately [6]. This may have influenced the participants on this issue.

The supporting role of the parents for healthy habits was acknowledged, although not much was discussed. Informants in a previous study based on individual interviews talked a lot about their parents [20]. These matters could be perceived to be sensitive, and adolescents could be unlikely to expose their own family in a peer group.

Commercials were another source of information, but their messages were met with suspicion. In a study among adolescents in New Zealand, advertising was found to have a considerable impact on adolescents' views of oral health and was not questioned by the youth [23]. Although acknowledging their influence, the adolescents in the present study talked in very negative terms about commercials. The methods used in advertisements should not be imitated in oral health education, as this might undermine the credibility of the dental services.

Better knowledge is an essential outcome of health education [9]. The qualitative design of the present study illustrated the participants' knowledge from a subjective perspective, but the discussions also revealed gaps in their knowledge of which they were unaware. The main focus of the dental services is often on the content in the health messages, and evidence-based, correct information is important [48]. However, these efforts will not achieve their purpose if they fail to reach their target audience.

This study indicates that the credibility of the people delivering the health messages is essential, as is their ability to create confidence during the encounter in the dental setting. When oral health education is perceived to be credible, it generates confidence. Likewise, when confidence is perceived, the oral health messages will be credible. Thus, oral health education among adolescents is more likely to be successful when credibility and confidence are perceived.

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