E Hedman
K Ringberg
P Gabre

Oral health education for schoolchildren: a qualitative study of dental care professionals' view of knowledge and learning

Authors' affiliations:
Eva Hedman, *Pia Gabre*, Department of Preventive Dentistry, Public Dental Health, Uppsala County Council, Sweden
Kristina Ringberg, Department of Social and Cultural Studies in Education, the Stockholm Institute of Education, Stockholm, Sweden

Correspondence to:
Eva Hedman
Department of Preventive Dentistry
Ulleråkersvägen 21
SE-75017 Uppsala
Sweden
Tel.: + 46 18 611 64 35
Fax: + 46 18 611 61 20
E-mail: eva.hedman@lul.se

Dates:
Accepted 26 August 2008

To cite this article:
Int J Dent Hygiene **7**, 2009; 204–211
DOI: 10.1111/j.1601-5037.2009.00391.x
Hedman E, Ringberg K, Gabre P. Oral health education for schoolchildren: a qualitative study of dental care professionals' view of knowledge and learning.

Abstract: *Aim:* The aim of the study was to describe and interpret dental professionals' view of knowledge, learning, health promotion and their expectations of and attitudes to the response from schoolchildren. *Methods:* A qualitative study design was used with discourse method. Nine dental hygienists and dental nurses, who have practised oral health education among schoolchildren, described their work in tape-recorded, semi-structured interviews. The discourse method stresses the variation and distinctions in the statements, and to understand the content of the text, its contextual dependence must be taken into account. *Results:* The preventive discourse could be found in all interviews, but it was concentrated on disease prevention and less on maintaining health. The biomedical view of knowledge dominated. Children's and parent's own responsibility for healthy habits was stressed, but no reflection of ethical considerations associated with influencing people's life-style was found. The text revealed discrepancy between the informants, and even within the same individual, showing ambivalence towards oral health education. Some individuals suggested lessons guided by communication with the children, while others wanted to maintain methods based on information about oral diseases to a greater extent. *Conclusions:* Different perspectives were found. The expression 'oral health promotion' was frequently used and supported by all the interviewed informants, but the statements did not reveal the informant's definition of the concept. Several educators focused on signs of diseases and less on the individual's view of their own health. In the future, oral health education programme needs to focus on

quality of life, behavioural variables and indicators of empowerment rather than just disease outcomes.

Key words: adolescents; knowledge; oral health; primary prevention; qualitative design

Introduction

In 1948, the World Health Organisation recognized a wide nature of health by defining it as a 'complete state of physical, mental and social well-being and not merely the absence of infirmity' (1). The definition of the concept of health is based on philosophical presumptions of what it means to be a human being and is of vital importance for the content and delivery of the health message. The Ottawa charter defines health promotion as the process of enabling people to increase control over the determinants of health (2). Health promotion programmes should prove effectiveness measured as efficient interventions and best use of resources (3). At the same time, health strategies should be characterized by quality; interventions should recognize empowering, participatory, holistic and equality as criteria of health promotion programmes (4).

Oral health has improved in the western world during the last few decades, especially among children and adolescents (5). Good oral health makes it possible for people to eat and enjoy food, to communicate, relate to others and is important in overall quality of life, self-esteem and social confidence (6). In two systematic reviews by Kay and Locker (7, 8), the effectiveness of oral health promotion and oral health education was analysed. The results of these reviews suggest that individual's level of knowledge can be relatively easily improved by oral health education, but no clear evidence on the impact on behaviour is reported. However, the studies are mainly evaluated by clinical outcomes and less on the impact of oral health education programs on attitudes and beliefs attitudes and beliefs. Petersen and Kwan (3) stress the need of distinguishing between disease prevention and health promotion and to evaluate both clinical outcomes and oral health-related quality of life.

Oral health education aims to transmit knowledge to people and, in the next step, influence the choice of life-style. The traditional perspective of knowledge is that it is measurable with a characteristic of quantitative growth. Knowledge can also be described as an interior process, which determines the individuals' view of and way of dealing with reality (9). Söderberg (10) considers that the concept of 'education' includes both factual knowledge and emotional, social aspects, while 'information' is a one-way communication without any consideration of the patients' emotional and social needs. The process of learning is dynamic and is based on the individual's previous knowledge and experiences. It can also be argued that learning is a social activity, something that takes place between people, in interaction, rather than something that is constructed solely in the individual mind (9).

In Sweden, primary prevention of oral diseases is strongly supported in the Dental Act (11). In recent decades, dental professionals have educated schoolchildren in oral health (12–14). The Dental Services in Uppsala carried out by dental nurses and dental hygienists offers all children between the ages of 6 and 16 years oral health education at four occasions during the compulsory school period. The content of the education is decided by the delegates in the County of Uppsala – information about dental diseases, diet, fluoride and dental hygiene (15). The Swedish public school consists of compulsory and non-compulsory divisions. Compulsory schooling includes 9-year regular compulsory school for children aged 7–16 years.

Non-compulsory schooling includes the preschool class for children aged 6 years and upper secondary school (16). In the curriculum, the aims of the compulsory school are described and concerning health, the aim reads: the pupils should develop a positive self-image and knowledge about health promotion (17).

The aim of this study was to describe and interpret dental professional's view of knowledge, learning, health promotion and their expectations of and attitudes to the response from school children. The questions at issue in the study were as follows: How do people talk about oral health education? What essential concepts are they focusing on and what are they omitting? What thoughts, expectations and view of knowledge appear in the interview text?

Material and methods

The Ethics Committee, Faculty of Medicine, Uppsala University, Sweden approved the study. Informed consent was obtained from all participating persons before the start of the study. The knowledge of and attitude to oral health among adolescents in the County of Uppsala, Sweden was studied in a questionnaire and has been published (18). Our interest in

this study is focused on dental professional's thoughts and to gain a rich and diverse description of the area; hence, a qualitative study design was used.

Study population

The study population consisted of dental hygienists and dental nurses who were working on educating schoolchildren, aged 6–16 years of age, in the County of Uppsala, Sweden. They were informed of the aim of the study and the voluntary nature. Inquiries about taking part in the study were made by letter or telephone. All dental staff involved in school education (14 dental hygienists and nurses) were offered to take part in the study and 9 agreed to participate. Thus, the inclusion criteria for participating were:

- Agree to participate (voluntaries).
- Have practised oral health education among school children (experience).
- Examination from a dental hygienist or dental nurse educational programme (dental education).

The distribution of professional education and years in profession are shown in Table 1. The education of dental nurses takes place in upper secondary school. Since 1992, the education of dental hygienists comprises 2 years at the university level. Earlier, the education of dental hygienists consisted of a supplementary course of 1 year in addition to the education of dental nurses. To provide a broad range of different views related to the study aim, the study sample consisted of dental hygienists and dental nurses with different education level, in different educational level, in different ages and with different time of experience in and oral health education.

Interviews

All the interviews were conducted by a dental hygienist (EH) trained in qualitative interviewing. The interviews were conducted locally at the office of the Department of Preventive Dentistry or, in some cases, at the subject's place of work. Data were collected in semi-structured and open-ended interviews, which lasted approximately for 1 h. The content was partly settled in advance, because the interviews consisted of question areas about why and how dental professionals work with oral health education and their conception of health promotion (19). Focus was on the informant's own description of education and their thoughts, feelings and actions in the situation described. The interview began with the questions: This handles your opinion of health promotion and health education. Can you tell me about your own experiences? Further questions were based on the informant's response. The interviews were tape-recorded and transcribed verbatim by a secretary who was otherwise not associated with the study.

Table 1. **The distribution of professional education and years in profession among the informants**

Informant	Professional education	Years in profession
1	Dental nurse/hygienist	22
2	Dental nurse/hygienist	21
3	Dental nurse/hygienist	22
4	Dental nurse/hygienist	23
5	Dental nurse	30
6	Dental hygienist	3
7	Dental hygienist	8
8	Dental hygienist	7
9	Dental hygienist	6

Analyses

Data from the interviews were analysed using the content analyses in accordance of the principles of the discourse method. The concept of discourse is the regulated practice that guides the public dialogue in a certain context (20). The purpose is to find pattern in already existing circumstances instead of interpreting an underlying meaning (21). Predicted knowledge is often regarded as an authorized carrier of the truth and other perspectives are rejected. The analysis of discourse stresses the variation and distinctions in the statements and it is the speech that connects attitudes, knowledge, power and resistance (20). The question: 'What are the people talking about?' led to a concentration of content and structure, but also the question: 'What are they not talking about? served in the same way. Cherryholms (22) states that the purpose of reading a text is to find all the possible meanings carried in a text rather than finding the meaning. The ability to look at a statement from its contextual dependence is crucial for an understanding of the statement. To avoid unessential or overly extensive elements in the discourse, the framing of the questions and their relationship to the interview text formed a structural instrument for analysis (22).

The analysis started with the investigator (EH), familiarizing herself with the material by carefully reading the transcribed interviews several times. The repeated reading of the text aimed to search for questions related to the discourse of the study, i.e. why and how dental professional's work with oral health education and their conception of health promotion. Through direction from the interview text, the statements were comprised in four content areas: aim of oral

health promotion, contents of lessons, view of knowledge and attitudes to the response from the school children. The contextual dependence of statements was analysed and the way of expression, choice of words, address, descriptions, explanations and choice of theme were taken into account when the statements' orientation to the discourse was investigated. In addition, from the view of discourse of the study, the omitted statements were identified and analysed. The statements were compared to find similarities and discrepancies (20). The content areas, and the conceptions and opinions of the informants, were grounded in the data by a selection of explorative text citations. To evaluate the quality of the study methods, critical appraisal of qualitative research was used (23, 24). The process of establishing quality in the area dependability, credibility and transferability was composed of several issues. In Fig. 1, the sampling, analysing and quality assurance procedure is summarized. The interviews were performed in Swedish and transcribed into Swedish. A professional translator translated the citations from Swedish to English.

Results

Four content areas were identified in the interviews: aim of oral health promotion in school, contents of the lessons, views of knowledge, learning and attitudes.

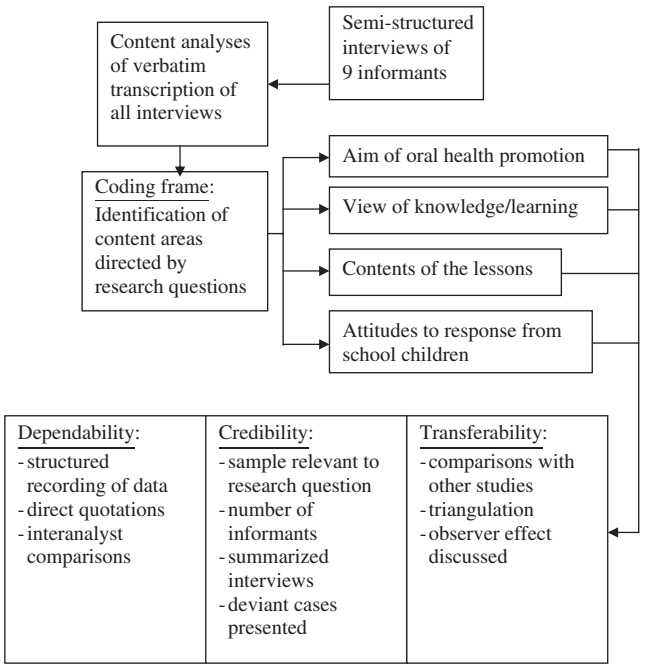

Fig. 1. Flow diagram of sampling, analysing and quality assurance processes.

Aim of oral health promotion in school

Most of the informants stated that the aim of the oral health promotion was not only to provide biomedical facts, but also to create an active and participating individual who is responsible for his/her own oral health: 'to get them to think about the fact that is not normal to have mouth diseases and that they can do something about it themselves' and 'to make the children aware of why they have such healthy teeth'. They described the education of schoolchildren as very important, but the effects are long-term and difficult to measure.

The wish to reach people with health promotion appeared to be strong. The quotations expressed an optimistic view of the opportunity to achieve improvements through health promotion. The base for the activities varied in the description from prevention of caries to being seen in the schools, but most of the statements stressed the importance of conveying knowledge about disease prevention: 'Being present in schools and society and giving the information children and parents ask for on their own terms'. The opinion was that if correct knowledge and measures are aimed in the right way, it is possible at least to reduce the caries disease, resulting in benefits in economy and health of individuals and society.

The quotations show that the aspect of communication was essential in several of the statements. It was important to arouse interest and make the lessons enjoyable. The informants expressed a sensitivity to the children combined with a biomedical view of knowledge and that the knowledge and attitudes of individuals and groups would be influenced by the information that was given with the aim of changing behaviour towards healthier habits. It was not obvious that people ask for health, their desire has to be awakened so that they can understand their needs. 'It should be fun when I come and I think I succeed with this. Sometimes I am fussy and offer things. It could be sugar-free candy, light soft drinks and if they get a present they are very happy. Something new happens and everybody listen, even the trouble-makers' and 'Reaching the children, giving them such good information that they understand what teeth and oral health are all about and stimulate changes'.

Contents of the lessons

There was a clear opinion about the facts that should be included in the oral health lessons – information about oral diseases, dietary habits, fluorides and oral hygiene. Information about dental caries and methods to prevent this disease dominated. The informants described that in recent years, the

working methods had changed and in addition to information, teamwork, practical tasks and tests of values were used. They suggested that variation, recognition and being private prevented the lessons becoming boring. Some of the informants stated that there was a need for even more extensive changes to the oral health message as most of the children was very healthy*:* 'Dental care talks about things that the children have heard hundred of times and focuses on diseases. We should focus more attention on asking what the children want to know, ask for questions in advance and start a discussion. We stand in front of the blackboard and preach instead of sitting in a ring and just talking to the children'. Dietary habits were prominent in the statements. The feeling was that, when economy in society improves, dietary habits deteriorate. However, the advice that was given still be pragmatic: 'The best tip I could give is that if you have good dietary habits on weekdays you can do as you like at the weekends'. In two statements, knowledge of and practising tooth brushing were regarded as important. The informants felt that the school is a suitable arena for health promotion because the information could be more general, as the informants visit the children's familiar environment and thereby avoid the risk of looking at the children as patients.

The cooperation with the teacher and the teacher's attitude and response were regarded as a prerequisite for a good lesson. The informant said that it is often difficult to obtain permission to come into the school. Most of the oral health education took place on the initiative of the dental staff and not by the teacher. Lack of finances and dental care staff appeared to be a threat to the quality and quantity of oral health promotion in school: 'Sometimes I feel that the oral health promotion for the children is pushed in the background, there isn't enough time. It is all about the money, we have to generate so much money for the clinic and the children are not profitable'.

Views of knowledge and learning

Two different views of knowledge and learning could be seen in the statements. The dental staff passed on information according to traditional oral health programmes, based on information about biomedical facts, where children were categorized by age and previous knowledge. In other statements, the communication was essential, and it was the children who should be given an opportunity to communicate their thoughts, questions and experience. The child should not be seen as an object for dental care. This difference in view of knowledge and learning was illustrated by the following two quotations describing good lessons:

'The children were very understanding, they sat still and were quiet and answered my questions about caries, dietary habits and tooth brushing. Then I felt that I had got the children on my side. I had a feeling that they were listening' and 'We are sitting in a ring and talking. I try to find out what the children want to know and then I put some facts between the lines. I try to find out whom I have in front of me because it is difficult to give information that suits everybody. Then I have to wait for the response and base my lesson on that. The children often tell stories and you can see that they have really been thinking. The questions are often clever'.

Even though the importance of communication was expressed in all the statements, it appeared that the informants preferred to work in accordance with traditional, adapted oral health programmes. Two of the informants commented the method that was guided by communication and testing the children's individual's values. The method was described as stimulating, but doubts were still raised about its usefulness in health promotion: 'It was great fun to use the tests of values, the children know a lot and you can't find this out without the test. The lesson can take an unforeseen turn depending on the questions and opinions that are brought up. Tests of values deal with thinking, what is my opinion? From their opinion you can then summarize how to keep the teeth healthy, but this is not primary prevention'.

Attitudes

Statements expressed people's right to obtain knowledge and at the same time, the dental care has both duties and rights to pass on knowledge. One person described this as a mission, 'Primary prevention should bee mission and it should be repeated more frequently than recommended in our oral health programme'. The statements also stressed people's equal rights when it comes to health promotion independent of social, economic, cultural or geographic circumstances: 'Immigrants often have insufficient knowledge of oral diseases and prevention, information can change this'.

The statements also stressed the individual's responsibility for oral health, the parent's responsibility when the child is young, and the children's self-determination was also recognized. On the other hand, several of the informants said that children are ignorant with wrong values resulting in undesirable behaviour, 'Children are badly informed about teeth and oral diseases and most of them can't brush their teeth properly. Teenagers need more health promotion because nobody checks them anymore their parents have stopped doing this'. Other statements expressed a belief that the healthy thoughts and attitudes are present in the individuals, but they may be

latent and are waiting to be awakened, 'Most people want to learn, there is a longing for knowledge, the children appreciate it when I come, they have lots of questions about teeth and oral health, they are so interested'.

One informant said that oral health promotion could be understood as controlling and directing, perhaps even be regarded as authoritarian. 'I stress and underline, maybe frighten a little, but it's all right, it's important that they understand their responsibility' and 'It's as if a dentist is higher and people then absorb more information. It seems that if the dentist tells them off, people listen and are more obedient'. When the children showed disinterested attitude and did not follow the advice they are given, one member of the staff expressed resignation and frustration: 'Teenagers are tiresome because they don't listen'. They say 'yes, yes'. I have one with dreadlock and he has a little beret and a ring in his nose and 10–15 rings in his ear and all he says is I'm too tired, I'm too tired. But I am also too tired and instead we do fluoride treatment at the clinic, it's the only thing that works'. The quotation provided no idea of how to improve the relation; instead, the alternatives were to supervise and to reduce the teenager's participation in the health promotion. Failure and resistance to health promotion were also regarded as positive experiences, which could lead to new understandings and could even improve the lesson: 'I look upon it as a challenge, I always learn something, you have to think in new ways and adopt a new approach'. The importance of giving information in a flexible way and to be a judge of character was stressed: 'On these occasions I usually tell them something about myself so that I reach the same level as they are. Explain that I am not perfectly well-behaved but I have also had cavities in my teeth and long for candy now and then, but I have to control my desire for candy'.

Discussion

The preventive discourse could be found in all the interviews indicating that the study sample is relevant to the research question. The informants stated that oral health promotion requires a positive basic tone, intelligibility, objectivity and reliability to be successful. Oral health promotion focused largely on disease and health is defined as the absence of the diseases of caries and periodontitis. The notion of risk of disease permeated the preventive discourse and the focus on health was regarded as unclear and difficult. The informants said that people suffer from oral diseases because of life-style factors and their expectations when it comes to the effect of rational, structured health promotion were high. The motive for health promotion varies, but a suspicion of people's insufficient knowledge was often a force. Their understanding would increase and their behaviour changes, mainly as a result of stimulation and motivation. The text stressed on the individual's responsibility and participation and was in line with the Dental Act (11) and Government offices of Sweden (25).

Several informants point out that education for teenagers can be hard and provocative. 'Teenagers don't care if the message is too simple and uneager. How can I justify a teenager who feels healthy not to eat so much candy? They feel good today but can suffer from sickness in the future, it's not easy'. The biomedical view of knowledge dominated and there was a clear-cut opinion about the content of the knowledge that was passed on. The knowledge of oral health and oral diseases is high among teenagers in Uppsala County (18). The adolescents' knowledge about dental caries exceeded the knowledge about periodontal conditions (18), a result in line with statements in this study where the informants focused on dental caries during the lessons. Although several of the informants stressed that children nowadays are healthy, none of them suggested that their school lesson should be reduced. This would have been a logical conclusion because the effectiveness of dental education remains unclear (7).

In several areas, however, the text revealed discrepancy in opinions between the informants. It was also possible to find diverging opinions within the same individual, demonstrating ambivalence to oral health education [Table 2]. In some of the statements, a need to develop the educational dimension in oral health promotion was expressed, especially among dental hygienists whose education was more recent. An interesting observation is that all the hygienists suggested a dynamic process in line with the description of Lave (9), who claim that learning is closely related to an interaction between people and the world around them. However, in spite of the desire for new educational views, a traditional method was often used. One explanation could be that patterns of action can be so strong that, despite a conviction about the best educational

Table 2. **Contrary or ambivalent statements expressed by the informants**

One-way communication	Interaction
Absence of disease	Oral health
Odontological, biomedical	Behavioural science
Control, supervision	Own responsibilities
Guided lessons	On the children's terms
Strict oral health programmes	Lessons guided by the children
Direct towards healthy behaviour	Change through own choice
Threaten, frighten	Positive basic tone
Scepticism	Optimism

method, the person reverts to existing, well-known behaviour (26).

The importance of communication was made clear in the statements and a democratic language was used with central conceptions such as equality, responsibilities, flexibility, quality and an overall view. In spite of this, the reflection relating to existential matters, reliance and the interaction between the educator and the listener were missing in the statements. Freire (27) stresses that all dialogue and communication must be based on reliance. It is necessary for the children to show self-reliance and courage to defend their own opinions. Reflections about the child and thoughts relating to the child were not clearly expressed in the statements. Work on oral health promotion deals with the basis of evaluation, and it is finally a question about the view of human dignity. The expression 'oral health promotion' was often used and all the interviewed informants supported the wording, but the statements did not elucidate the informant's definition of the concept. When it came to acting, the consensus appeared to disappear and several educators focused on signs of diseases and less on the individuals' view of and responsibility for their own health.

Ethical considerations associated with the teaching situation were not discussed at all in the statements. Oral health promotion involves a desire on the part of the educator to ensure that knowledge, attitudes and behaviour are exchanged with the listener, and this influence could force the child to make changes against his/hers will. The question of how mentally to direct people and how persuasion influences personal integrity was not discussed in the statements. The concept of 'empowerment' means that an individual is the master of his/her own life (28). If the individual is helped to develop the self-esteem, motivation and ability to solve problems, he/she can be responsible for his/her own health (29, 30). Among Swedish adolescents, positive oral health attitudes are of great importance if oral health is to be perceived as good (31). To achieve successful oral health education, adolescents need to perceive credibility and confidence in the health message (32). Children are exposed to processes of power during oral health education and it would have been interesting to find reflections about dental care professional's right to use these processes and their effect.

The present study showed the desire of the dental staff to influence the oral health of young people. Different perspectives of the view of health promotion in school and the response from the schoolchildren among dental staff were found. The text revealed discrepancy between the informants, and even within the same individual, showing ambivalence towards oral health education. Some individuals suggested school lessons guided by communication and interaction with the children, while others to a greater extent wanted to maintain more traditional methods based on information and one-way communication about oral diseases. The study does not describe on how the schoolchildren experience the lessons. An earlier study has shown that oral health facts can be transferred through lessons in school (19), but it remains unknown whether the effect of the dental staff teaching in school influence a healthier behaviour or a desire for a healthier life.

Several educators focused on signs of diseases and less on the individual's view of their own health. Maybe oral health promotion programmes must focus on quality of life, behavioural variables and indicators of empowerment rather than just disease outcomes. Therefore, future research needs to focus on the interaction between the educator and the schoolchildren to identify successful methods and approaches.

Acknowledgements

We would like to thank the County of Uppsala for financial support and Jeanette Kliger for revising the English text.

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