



ORIGINAL ARTICLE

*I Arpalahti*  
*M Järvinen*  
*J Suni*  
*K Pienihäkkinen*

## Acceptance of oral health promotion programmes by dental hygienists and dental nurses in public dental service

**Authors' affiliations:**

*I Arpalahti, M Järvinen, J Suni*, City of Vantaa, Health and Social Welfare Affairs, Vantaa, Finland

*I Arpalahti, M Järvinen, K Pienihäkkinen*, Institute of Dentistry, University of Turku, Turku, Finland

**Correspondence to:**

*Irma Arpalahti*  
Karsikkokuja 15  
FI 01360 Vantaa  
Finland  
Tel.: +35840 570 9402  
Fax: +3589 8392 5406  
E-mail: [irma.arpalahti@vantaa.fi](mailto:irma.arpalahti@vantaa.fi)

**Abstract:** *Objectives:* The aim of this study was to analyse how dental hygienists and in-service trained dental nurses accepted new health promotion programmes, how did they experience them in practice, and how did these programmes affect their attitudes to work. *Methods:* The subjects were all the dental hygienists and in-service trained dental nurses ( $n = 28$ ) involved in health promotion of small children. Education and written instructions on two new programmes had been given to the professionals in two areas of Vantaa and those in the third area used the routine programme. The transtheoretical model (TTM) was selected as the theoretical framework for counselling. A structured questionnaire of 31–35 items was sent to all subjects. Independent samples Mann–Whitney *U* and Fisher's exact tests were used as statistical methods. *Results:* The response rate was 89%. All respondents felt that the work they had carried out had always been important during their working career. Twenty-one of 25 respondents reported that the instructions and education were suitable for oral health promotion. The respondents within the new programmes felt they had advanced more as health professionals ( $P = 0.020$ ) and acquired more confidence from the education ( $P = 0.018$ ) compared with the routine programme. *Conclusions:* The new programmes for small children were well accepted by the dental hygienists and the in-service trained dental nurses, and the majority of them gained some new practices for their work.

**Key words:** attitude to work; confidence to work; dental hygiene counselling; motivation to work; oral health promotion; transtheoretical model

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## Introduction

Oral health promotion for children includes several elements – regular oral hygiene, including tooth brushing and use of a fluoride-containing toothpaste twice a day, healthy eating habits with proper timing and composition of meals and water as a thirst quencher. For instance, the Scottish Intercollegiate Guidelines Network (1) recommend that programmes of oral health promotion should be available for parents during pregnancy to reduce early childhood caries and that the education to parents and their preschool children should start before the age of three (1). Multifaceted counselling may increase the knowledge of parents and decrease the incidence of early childhood caries (2).

The use of xylitol-containing products has been increasingly recommended for high-risk children since the 1980s (3, 4). The European Food Safety Authority has given a favourable report on possible beneficial effects of xylitol chewing gum. It reduces the risk of caries in children consuming chewing gum sweetened with 100% xylitol at least three times per day (5). In addition, parents' regular use of xylitol products helps to reduce the colonization of *mutans streptococci* in small children (6).

It is difficult to influence the attitudes and behaviours of people. First, it is essential to increase both knowledge and skills concerning oral health and to reinforce these during dental visits. In addition, how health education is provided is important; there is a need to be client specific. Some patients may avoid talking and thinking about their health behaviours, some are ready to step forward and take action while some have made changes in their lifestyles and are working to prevent relapse. (7). In a survey of dental patient education from the perspective of dental hygienists, the content of the education provided often focused on the professional, while the standpoint of patient empowerment was disregarded (8). So-called in-service-training may include demonstrations, discussions, analyses, applications and evaluations, which are given in close connection with the trainee's work. This can improve the quality of health care (9). A similar type of programme including coaching and mini-lectures about strategies specially designed for preventive health care has been suggested to produce improvement in preventive care (10).

In Finland, the first dental visit is usually at the age of 6–12 months, and it includes oral health counselling for the family. Motivated and educated personnel are important for the success of prevention programmes. In the Vantaa public dental service, oral health promotion and check-ups for small children have been delegated to dental hygienists and in-service trained dental nurses. A public dental hygienist usually works independently and treats children and young people, and the most commonly reported treatment is oral hygiene instruction (11). A dental nurse usually assists a dentist (similar to a dental assistant in other countries). Some dental nurses interested in oral health counselling may be trained, however, to work independently in this field.

The aim of this study was to analyse how two new oral health promotion programmes were accepted by professionals in a public dental service; to note how the dental hygienists, dental nurses and their superiors experienced the health promotion programmes in practice and how the programmes affected their attitudes to work.

## Study population and methodology

This study is one part of the prevention study, which was started in Vantaa public dental service to compare the effect of two new health promotion programmes with the routine programme on oral health in small children. The presence of *mutans streptococci* in dental plaque at the age of 2 years and the presence of clinical signs of dental caries at the age of

5 years are the main outcome measures of the prevention study. A team of dental professionals made detailed plans for the programmes. The main elements in the first programme were to use fluoride and clean the teeth. The second programme emphasized proper nutrition and the use of xylitol. The routine programme was the programme given prior the study and consisted of all the above elements, but on a more universal level. The area for each programme was selected in a randomized procedure. Children born in 2008 were selected to a cohort that will be followed until the children are 5 years old. The first dental check-ups for the children in the study cohort started in July 2008, and they were mostly performed in July 2009.

The dental hygienists and the in-service trained dental nurses were trained for the oral health promotion programmes through lectures, discussions in small groups and written instructions. Each professional using the new programmes got training for about 19 h in nine separate occasions and those in the area of the routine programme missed one occasion, i.e. one 2-h lecture. The education consisted of how to implement the process of each programme; what were the main practical procedures to take into consideration in each age group. The procedures were taken into discussions to understand them better. Training how to perform and interpret the results of mutans streptococcus plaque testing was also included in the education. The transtheoretical model (TTM) was selected as a theoretical framework for preventive counselling (7), because professional-orientated methods may not in practice produce favourable results (12). The model helps to select the individual level of decisional balance and to focus on personal conversation and goal setting in the counselling. In TTM, people move through the stages of precontemplation, contemplation, determination, action and maintenance or relapse (7). Because these stages can be understood as people's thoughts, feelings and attitudes, the professionals were advised to determine the stage and give individuals counselling that was suitable for their stage. In the training, it was emphasized that behavioural change is a process and relapsing is common. Training in how to use the TTM in patient education was given prior to the prevention study for all professionals, and the training was repeated for those who used the new programmes. The professionals received also demonstration materials for use in the dental office. The first material included figures demonstrating cleaning between the teeth, and the other showed the sugar content of several food and drinks and examples of xylitol products. In addition, they received brochures and samples of toothbrushes, toothpaste and xylitol products to be given for the families.

## Sample and data collection

The subjects of the present study included all the dental hygienists ( $n = 21$ ) and in-service trained dental nurses ( $n = 7$ ) involved in oral health promotion of small children in Vantaa public dental service. In two areas using the new programmes, there were 14 dental hygienists and five in-service trained

dental nurses, and in the area of the routine programme, the numbers were 7 and 2, respectively. The study was performed using a structured questionnaire with 31–35 items. In the new programmes, the subjects received 35 questions, and in the routine programme, 31 questions. Two dental hygienists who were not involved in the study pretested the questionnaire and the structure of the interview. Few amendments were made in the light of their feedback.

The questioning was timed so that most of the first examinations of the children born in 2008 had been carried out. The questionnaire was sent attached to an email at the end of May 2009. The subjects printed it, responded anonymously and returned it by post. In addition, one of the authors (IA) interviewed all the dental nursing chiefs in Vantaa ( $n = 6$ ), presenting 21 questions, at the end of May and the beginning of June. Four of them were interviewed face to face and two by phone.

### Instrument

The first section of the questionnaire requested demographic information (age, education) and dental care experience in children's dental care, including whether the education had been provided for a dental hygienist or an in-service trained dental nurse. The respondent's age and the length of experience were reported in years or months. The second section concerned appointments for the visits, and in the third section, the subjects were asked for their opinions on the instructions given and the materials made available for the study. Details of the visits were requested in the fourth section. They concerned the reception room, escorting of the child, and the attitudes of the parents to whom the health education was given. In the fifth section, there were questions about the recording of the information on the visits.

In the last section of the questionnaire, the respondents were asked about their attitudes to their work during their career and during the prevention study. This section concerned the benefits of the education, attitudes, effectiveness, motivation and coping with work. The respondents were also asked how much extra effort was needed for the new programmes and whether they gained anything new for their work. In addition to the influences on respondents themselves, the influence on their workmates was examined.

The dental nursing chiefs were interviewed about their knowledge and experiences of the study and about the feedback from the dental hygienists and in-service trained nurses. In addition, they were asked questions about their perception of the personal experiences of the respondents. They were questioned about the oral health care of children: what should be added and what was unnecessary.

Acceptance of the oral health promotion programmes was measured by questions about the experiences of the respondents and how the programmes affected their attitudes to work. The experiences were measured by examining the suitability of the written instructions of the programmes and how the respondents were able to apply them. Additionally,

satisfaction with appointments, the presentation material, the brochures given to the families, and improvement in knowledge and skills from the education provided described the experiences of the respondents. Experiences concerning the attitudes of the parents to preventive counselling, the demand for extra efforts when using the programmes and experiences of the TTM were also asked about. The attitudes of the respondents were measured by questions about whether the study made them feel their work more meaningful, whether they had advanced as health professionals, whether they had developed confidence or gained some new practices in their work and whether there had been any change in their opinions, effectiveness or motivation for working. The answers, with the exception of those about personal information, were given using a 5-point Likert Scale.

### Data analysis

The answers on experiences and attitudes were cross-tabulated by group, education, age and experience in children's health care. The differences were tested in relation to answering activity, experiences and attitudes between the new programmes and the routine programme, between the dental hygienists and the in-service trained dental nurses, and between the respondents with less experience and those with more experience in children's dental care. The differences between groups were analysed for statistical significance using the Fisher's exact test in relation to demographic data and between the programmes using the Mann–Whitney  $U$ -tests in relation to experiences and attitudes. The statistical software used was PASW statistics 18.0 (IBM Corporation, Somers, NY, USA), and the level of statistical significance was set at  $P < 0.05$ .

## Results

### Demographic data

The response rate was 89% ( $n = 25$ ) for dental hygienist and nurses. The mean age of participants was 42 years (range: dental hygienists 26–60, nurses 44–54). Four participants either did not report their age or did not answer this question. All of the dental nursing chiefs participated in the interview ( $n = 6$ ).

The mean experience for health education of small children was 9 years (range 1–30 years). The experience of the respondents did not differ between the programmes ( $P = 0.62$ ). Most of the respondents, 76%, had performed 11–50 examination on children born in 2008, and three of them (one in each programme) had performed more than 71 examinations. In the areas that used the new programmes, 37% of the respondents had performed fewer than 30 check-ups, while the proportion in the routine programme was 67% ( $P = 0.35$ ) (not shown on table).

### Experiences

In the areas with new programmes, 17 of 19 respondents reported that the time reserved for the appointments was

40 min or more, and all six respondents in the routine programme reported 30 min ( $P < 0.001$ ). Twenty-two of 25 respondents were always or most often satisfied with the length of the time reserved. Twenty of 25 respondents reported that both parents joined the dental visits of their children at least sometimes, and five of 25 said this was seldom the case; the proportions did not differ between the programmes. In the areas that used new programmes, 18 of 19 respondents reported that the parents were given health education always or in most cases during the dental visits, and 15 of them reported that the parents considered the health education positive (not shown on table).

Twenty-one of 25 (84%) respondents reported that the previously written instructions were at least quite suitable for the oral health promotion of children, and they were able to follow the instructions very well or well. In the new programmes, the material used in the dental office had worked well for 13 of the 19 respondents, and the brochures and other materials for the families suited at least well in practice in the opinion of 15 of 19 respondents (not shown on table).

Sixteen of 25 (64%) respondents answered that the education related to the prevention study had increased their knowledge or skills at least in some degree. Twelve of 23 (52%) respondents felt that the TTM was useful or quite useful. The respondents in the new programmes had used TTM more ( $P = 0.004$ ) and more often ( $P = 0.019$ ) than the respondents in the routine programme (Table 1).

### Attitudes

All of the respondents felt that the work they had performed had been important during their working career (Table 2). Fourteen of 25 (60%) respondents did not feel any change in the importance of their work compared with the time before the prevention study. Six of the 19 (31%) hygienists compared with four of the six (67%) in the in-service trained dental nurses felt that their work was now more meaningful than before the prevention study ( $P = 0.047$ ) (Table 2). In addition, seven of 14 respondents with <10 years of experience and three of 10 respondents with more experience shared this opinion (not shown on table).

Altogether, 15 of 25 (60%) respondents felt that they had advanced at least to some degree as a health professional; 10 of them were hygienists and five of them were in-service trained dental nurses ( $P = 0.049$ ). The respondents in the new programmes felt that they had advanced more compared with those in the routine programme ( $P = 0.020$ ). The respondents with less experience felt they had advanced more compared with those with more experience (not shown on table).

The respondents in the new programmes compared with those in the routine programme had acquired more confidence from the education related to the prevention study ( $P = 0.018$ ). Ten of 19 (53%) respondents in the new programmes and one of six (17%) in the routine programme commented that their opinions about their work were at least slightly more positive than before the prevention study. Compared with those with

more experience, a greater proportion of respondents with less experience considered that their opinions about their work had become more positive (not shown on table). Although respondents with less experience reported that at least some improvement in the effectiveness of their work had occurred (not shown on table), most of the respondents did not consider there had been any change in their effectiveness (76%) or motivation (84%) for working. The motivation for working had increased more for in-service trained dental nurses compared with dental hygienists (not shown on table).

Altogether, 13 of 24 (54%) respondents, 11 in the new programmes and two in the routine programme, felt that they had gained at least something new they could use in their work. Nine of 18 (50%) hygienists and 4 (67%) of the in-service trained dental nurses answered that they had gained at least some new practices for their work. In addition, those with less experience gained more for their work during the prevention study (not shown on table).

### The dental nursing chiefs

The dental nursing chiefs considered that their knowledge of the study and of the health promotion programmes was good. They thought that they were well aware of the programme in their own area and knew the other programmes in some respect. All of the dental nursing chiefs agreed that the dental hygienists and in-service trained dental nurses had advanced at least to some degree and that they had increased their knowledge and skills because of the education given. In addition, they considered the TTM useful or quite useful. The opinion of the dental nursing chiefs was that the dental hygienists and in-service trained dental nurses always or most often felt their work important, their work was now more or slightly more meaningful than before the prevention study, and that they had acquired much or quite much confidence from the education. They reported that they consider the health promotion of children important and wanted to have more in-service trained dental nurses to start working with the health promotion of small children. In addition, they wanted to raise the feeling of responsibility of the parents concerning the oral health of their children.

### Discussion

According to this study, the dental hygienists and in-service trained dental nurses in Vantaa public health care had felt that their work was important during their working career, and they accepted the studied new oral health promotion programmes for 6–12-month-olds well. The participants with <10 years of experience felt that they had advanced as a health professional, gained the most in terms of new practices from the programmes, and that their opinions towards their work had become more positive compared to those with more experience. The findings of this study agree with those of an empirical study of practice nurses and clinical guidelines in a changing primary care context (13). In that study, it was found

Table 1. The frequency distributions (%) of the answers to the questions of the experiences by the dental personnel

Question	All ( <i>n</i> = 25) %	New programmes ( <i>n</i> = 19) %	Routine programme ( <i>n</i> = 6) %	Hygienists ( <i>n</i> = 19) %	Nurses ( <i>n</i> = 6) %
Are the written instructions suitable for oral health promotion of small children?		<i>P</i> = 0.528		<i>P</i> = 0.293	
Very suitable	52	47	67	47	67
Quite suitable	32	37	17	32	33
Fairly good	16	16	17	21	0
Poorly or not at all suitable	0	0	0	0	0
How well were you able to follow the written instructions?		<i>P</i> = 0.033		<i>P</i> = 0.576	
Very well	20	11	50	21	17
Well	64	68	50	58	83
Fairly well	4	21	0	21	0
Badly or very badly	0	0	0	0	0
Has there been need for extra efforts when using the programmes?		<i>P</i> = 0.150		<i>P</i> = 0.503	
Yes	12	16	0	16	0
Some extra efforts	36	42	17	32	50
Slightly extra efforts	36	26	67	42	17
Very slightly or not extra efforts at all	16	16	17	11	33
Has the education related to the prevention study increased your knowledge or skills?		<i>P</i> = 0.467		<i>P</i> = 0.808	
Yes	12	16	0	5	33
In some degree	52	53	50	63	17
Slightly	24	16	50	26	17
Very slightly or not at all	12	16	0	5	33
How useful have you felt the transtheoretical model (TTM) in counselling?		<i>P</i> = 0.056		<i>P</i> = 0.690	
	( <i>n</i> = 23)	( <i>n</i> = 17)		( <i>n</i> = 18)	( <i>n</i> = 5)
Useful	9	12	0	6	20
Quite useful	43	47	33	44	40
Slightly useful	35	41	17	39	20
Very slightly	13	0	50	11	20
How wide (variable) have you used the TTM in health education?		<i>P</i> = 0.004		<i>P</i> = 0.234	
	( <i>n</i> = 24)	( <i>n</i> = 18)			
It in all respects	8	12	0	5	20
In almost all respects	21	29	0	16	40
In some respects	50	59	33	58	20
Very little or not at all	21	6	67	21	20
If you have used the TTM, how often?		<i>P</i> = 0.019		<i>P</i> = 1.000	
	( <i>n</i> = 23)	( <i>n</i> = 17)		( <i>n</i> = 18)	( <i>n</i> = 5)
To every child	4	6	0	6	0
To almost every child	35	41	17	33	40
To some children	39	47	17	39	40
To few or very few children	22	6	67	22	20

that nurses have supportive attitudes towards guidelines that may enhance the professional status of the lower paid groups. Compared with those in the routine programme, the participants in the new programmes felt that they had advanced as health professionals and acquired more confidence to their work, which might be due to the extra support and attention provided for them. Those who used the new programmes got slightly more education and support in using them. This is in line with the study of primary nurses' performance, which emphasizes the role of supportive management (14): if the support of supervisors was high, the performance of the nurses was higher compared to those receiving a lower level of

support. Interestingly, the dental hygienists and in-service trained dental nurses in the new programmes did not report any more demand of extra effort than the respondents in the routine programme, even though the programmes in question might have been more difficult and using them took more time.

All of the hygienists and in-service trained dental nurses that used the new programmes joined the study; the participation of those in the routine programme was less, most probably due to the fact that the prevention study did not affect them as much as the respondents in the new programmes. In all areas, the in-service trained dental nurses reported that their work

Table 2. The frequency distributions (%) of the answers to the questions of the attitudes by the dental personnel

Question	All (n = 25) %	New programmes (n = 19) %	Routine programme (n = 6) %	Hygienists (n = 19) %	Nurses (n = 6) %
During your working career, have you felt your work important?		$P = 0.574$		$P = 0.574$	
Always	40	37	50	37	50
Mostly often	60	63	50	63	50
Sometimes, seldom or never	0	0	0	0	0
Compared to the time before the prevention study, have you felt your work to be more meaningful now?		$P = 0.056$		$P = 0.047$	
More meaningful	16	21	0	5	50
Slightly more meaningful	24	32	0	26	17
No change	56	42	100	63	33
Less or not meaningful at all	4	5	0	5	0
During the prevention study, have you felt having matured as a health professional?		$P = 0.020$		$P = 0.049$	
Yes	20	26	0	11	50
In some degree	40	47	17	42	33
Slightly	24	16	50	26	17
Very slightly or not at all	16	11	33	21	0
Have you got any confidence to your work from the education related to the study?		$P = 0.018$		$P = 0.258$	
Yes much	4	5	0	5	0
Quite much	28	37	0	32	17
In some respect	48	47	50	47	50
Very slightly or not at all	20	10	50	16	33
How has the prevention study changed your opinions of your work?		$P = 0.109$		$P = 0.155$	
More positive	16	21	0	11	33
Slightly more positive	28	32	17	26	33
Not positive at all	56	47	83	63	33
Negative	0	0	0	0	0
Have you improved the effectiveness of your work during the prevention study?		$P = 0.124$		$P = 0.608$	
Improvement	4	5	0	5	0
Some improvement	20	26	0	16	33
Not any change	76	58	100	79	67
Reduced	0	0	0	0	0
During the prevention study, has there been any change in your motivation for working?		$P = 0.231$		$P = 0.009$	
Increased	4	5	0	0	17
Some increase	12	16	0	5	33
Not any change	84	79	100	95	50
Reduced	0	0	0	0	0
During the prevention study, have you gained something new for your work?		$P = 0.071$		$P = 0.331$	
	(n = 24)	(n = 18)		(n = 18)	
Yes	25	33	0	17	50
Some	29	28	33	33	17
Little	33	33	33	39	17
Very little or not at all	13	6	17	11	17

became more meaningful than before and they advanced more as health professionals during the prevention study compared with the dental hygienists. This might be because contemporary with the prevention study, the in-service trained dental nurses were given new responsibilities in preventive counselling and dental check-ups of small children. The dental hygienists' work is already multi-faceted from the beginning, but the young dental nurses start their career assisting dentists. After several years, some of them are eager to do something new; those interested in health education were given a chance

to do independent work in the field of the health promotion of small children. These findings are in line with the survey of Swedish dental hygienists' preferences for workplace improvement and continuing professional development (15). That study found that committed people, those in age group of 41–52 and working in the public sector, seemed to be most closely associated with workplace improvements (15).

The acceptance of the new oral health promotion programmes by the professionals was good, and according to the participants' own reports, the programmes were used with



most of the patients and their parents. The reports were in line with the statistics from the local electronic patient database (16): the new programmes had been carried out in 81% of the check-ups of children. It took about 50% more time in the new programmes than in the routine programme because of the guidance and/or prevention aimed at the parents. Prior to the prevention study, the length of visit had been discussed and individually determined; therefore, the dental hygienists and the in-service trained dental nurses were most often satisfied with it. Half of the dental hygienists but none of the in-service trained dental nurses reported that the reserved time was sufficient for the check-up and recording. The dental hygienists are more used to recording information in the electronic patient database; they have provided patient care as long as they have been working. For most of the in-service trained dental nurses, it was quite new to have their own patients, work independently and record the information on the visits.

The parents of small children were not used to getting any guidance or prevention aimed at them, but the dental professionals within the new programmes thought that the parents were satisfied with the counselling. The practice brought out, however, some problems. If the mother or father of the patient was alone with the child, there was nobody to take care of the child during the guidance or prevention aimed at the parent. The parent was not able to concentrate to health education, and some adjustments were made to the programme concerning the safety of children. According to the feedback from this study, the content of this programme aimed at the 2-year-olds has been modified. In this way, the study enabled the development of oral health promotion in the public health care.

Education in the TTM as a theoretical framework in preventive counselling was given to all dental hygienists and in-service trained nurses starting in 2006 (7). There are several different kinds of health behaviour change models to explain, predict and change health behaviour. For instance, the health belief model is most useful when applied to health behaviours as screening but less useful in guiding to address long-term behaviours of individuals (17). The TTM, in turn, is based on interaction, which helps to select individual goal setting in the counselling. Therefore, TTM may help the professionals and reduce their frustration when an individual does not take the advice or change health behaviour. Transtheoretical model also recognizes that relapsing is a common task to tackle in any health programme (10). Transtheoretical model has been criticized that the stages are difficult to apply and that the effectiveness of TTM is limited (18), which might be the reason why behavioural theories are not systemically used in oral health care (19).

In the new programmes, the use of interactive counselling with the families was a major alteration when compared with routine prevention given. The education on how to use the TTM was repeated before the prevention study was started and linked to the new oral health promotion programmes. The professionals in the routine programme did not get this additional education, which was clearly apparent in the practical application of the model by them. It may not be sufficient to

present training in a complex theoretical framework like TTM and TTM-based counselling in a 1-day workshop; more intensive training might be needed, perhaps integrated with basic education (20). During the course of the prevention study, the topic (TTM) was further repeated to increase the emphasis on reciprocal communication, giving and receiving feedback in health counselling.

This study was cross-sectional, and it was based only on self-reported data. There were a rather small number of respondents in the control group, and that number was decreased by the lower response rate. The present two oral health promotion programmes were considered an entity, although some distinctions were found between the new health promotion programmes. The relatively small number of respondents reduced the possibilities to use multifactorial analyses. Therefore, the present results on subgroups are considered indicative and must be interpreted with care. The overall results, however, give a good, reliable description of the acceptance. To measure the acceptance of and attitudes towards the oral health promotion programmes, questions were designed to inquire about the basic practical and personal experiences of the respondents. The researchers familiarized themselves with the methods properly and pretested the questionnaire prior to the study to raise the reliability of the study. The uniformity of the answers and the timing of the questioning prior to the summer vacation so that the respondents had not forgot any of their experiences supported the reliability of the study. In the interviews with the dental nursing chiefs, the validity was probably inferior to that with their employees; the answers may have been slightly polite, because they had to represent themselves face to face. In an anonymous questionnaire, the answers might have been more critical.

## Conclusions

The acceptance of the new oral health promotion programmes by the dental professionals was good. Dental hygienists and in-service trained dental nurses in Vantaa public health care used extra efforts to implement them, and they reported that the education related to the prevention study had increased their knowledge and skills. The majority of the respondents gained some new practices for their work. The respondents with <10 years of experience had advanced as health professionals, changed their opinions to work and gained more new practices for their work than those with longer experience. All of the dental nursing chiefs agreed with that the respondents had advanced at least to some degree and that they had increased their knowledge and skills because of the education given. The findings suggest that education and new responsibilities enhance professional performance in every-day work. This most probably contributes to improvement in the quality of care provided to the families.

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