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Dental hygienists' work environment: motivating, facilitating, but also trying

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Abstract: The aim of the present study was to describe dental hygienists' experiences of their physical and psychosocial work environment. The study was descriptive in design and used a qualitative approach. Eleven dental hygienists participated in the study and data were collected during spring 2008 using semi-structured interviews. The material was analysed using qualitative content analysis. The results showed that the dental hygienists experienced their work environment as motivating and facilitating, but at the same time as trying. The three categories revealed a theme: *Being controlled in a modern environment characterized by good relationships*. Motivating factors were the good relationship with co-workers, managers and patients, seeing the results of your work, having your own responsibility and making your own decisions. The new, pleasant and modern clinics, good cooperation between co-workers and varying duties were described as facilitating factors. The trying factors, as described by the dental hygienists, were above all being controlled by time limits or by some elements of the work, such as teamwork. The dental hygienists also felt stress because appointments were too-short. To conclude, the participants described their work environment as trying in several ways, despite the modern clinics and good relationships.

Key words: dental hygienist; physical work environment; psychosocial work environment; qualitative content analysis

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Introduction

The work environment comprises technical, physical, organizational and psychosocial factors, but the content of work is also part of the work environment (1). Employees' job satisfaction is

an important prerequisite for a good work environment. Other significant factors are good relationships with co-workers, opportunities to influence work tasks and that others think the work you do is important (2–5). Furthermore, variation in work tasks is essential (2, 4), as is a fair distribution of job assignments (4). An additional factor of importance to a good work environment is when managers encourage employees to use and improve their competence (2–4, 6).

Herzberg's (7) motivation-hygiene theory of job attitudes describes job satisfaction and job dissatisfaction. His first set of factors, the motivating factors, includes primarily achievement, recognition, the work itself, responsibility and advancement. Motivating factors are intrinsic to the job and related to the job itself (job content). If workers are to be motivated, these factors must come into play. The other dissatisfactory components, which Herzberg calls hygiene factors, include primarily the company's policies, relationships between people, working conditions, status, job security and salary. Private life also belongs to the group of hygiene factors. These factors are extrinsic to the job, related to the job situation or environment, and can influence workers temporarily, but not motivate them. Herzberg considers that when the hygiene factors are positive, the motivating factors can lead to work satisfaction, which can in turn promote production (7).

Another commonly mentioned model in relation to staff work environments is the demand-control model. The balance between an individual's ability to control his/her work and the demands at work has been studied thoroughly by Karasek and Theorell (8). They have developed the demand-control model, which describes four prospective work situations: high demand – high control, low demand – low control, low demand – high control and high demand – low control. The model has been further developed and an additional factor has been added, namely social support. Highly demanding work with good ability to control the work is not harmful, but instead creates positive stress. According to the model, the main cause of stress at work is high demands connected with low control and lack of social support (8).

What has been most frequently studied in professional dental hygienists are musculoskeletal problems and carpal tunnel syndrome. Studies (9–15) have shown that pain from the neck, shoulders, hands and wrists is common for many dental hygienists, and that carpal tunnel syndrome is a frequent health problem (9–15). A study by Lalumandier and McPhee (15) showed that dental hygienists who were dissatisfied with their work had more problems with their hands and wrists than did those who were satisfied with their work.

Studies describing dental hygienists' experiences of their physical and psychosocial work environment are few, and many of them were carried out in the US and Sweden during the 1990s. A study by Lang *et al.* (16) showed that dental hygienists in the US felt that scheduling and time management were particularly stressful aspects of the hygienist's job. Stressors described in an English study (17) were that dentists undervalued prevention and that patient appointments were scheduled too closely together. A study (18) from Sweden showed that the size of the working site is of importance. Dental hygienists who worked at small clinics assessed their working environment as better and felt greater job satisfaction than did dental hygienists who worked at large clinics. Another Swedish study has shown (19) that dental hygienists working at small clinics have fewer sick days than do dental hygienists working at large clinics. In another study (20) from Sweden, predictors of work satisfaction were skills development, supportive work climate and work stimulation. Providing comprehensive patient care services, working in a supportive work environment, with a variety of tasks, and participating in decision-making have been shown to be related to job satisfaction in studies from the US (21, 22). Only one qualitative study (17) has been found and it revealed that dental hygienists in England felt satisfaction with their encounters with people and with helping patients achieve better oral health, while they felt dissatisfaction with the few opportunities for promotion.

The dental hygienist profession has undergone major changes since it was established in the late 1960s in Sweden (23, 24). The shortage of dentists, high workloads and long delays in dentistry has resulted in major changes in the duties of dental hygienists. Today, for example, children and adults with low treatment needs are usually attended by a dental hygienist (23–25). Studies on dental hygienists' experiences of their physical and psychosocial work environment are few, relatively outdated and only one qualitative study has been found. Therefore, the present study was conducted to fill a gap in the research in this area. Furthermore, we need a more detailed description of the area using both quantitative and qualitative studies. Thus, the aim of the present study was to describe and deepen our understanding of dental hygienists' experiences of their physical and psychosocial work environment.

Methods

The study was descriptive in design and used a qualitative approach; it took place during spring 2008.

Study population

A purposive sample of 11 dental hygienists from four clinics in central Sweden participated in the study. The maximum variation sampling method was used (26). In the present study, dental hygienists of varying age and active years within the trade were asked to participate. The aim of participant selection was to get a rich and varied description of dental hygienists' experiences of their work environment. Participants' age varied between 32 and 65 years with a median age of 46 years. Active years as a dental hygienist varied between 2 and 36 years, with a median of 10 years. Six of the participants had prior work experience as a dental nurse, one as an apprentice and four had no previous job experience within dental care. Five of the dental hygienists worked full-time and six worked part-time. Five of the dental hygienists had 1 year of academic training, six had 2 years and three of the participants had taken continuation courses. One year of academic training was the policy in Sweden until 1988, and this was a supplementary education programme for dental nurses. In 1988, the system changed to 2 years of academic education, which became permanent in 1992. Dental hygienists became a registered professional group in 1991 (27).

Data collection

A semi-structured interview guide was used to collect the data, i.e. a set of questions was used, but the order of the questions could be changed to adapt to each specific interview situation. The interview guide covered questions such as 'Can you describe what you experience as good and less good in your physical work environment?' 'Can you describe what you experience as good and less good in your psychosocial work environment?' 'Can you describe what gives you work satisfaction and dissatisfaction?' To obtain a deeper description, questions were asked about how they experienced their role, influence over their work and responsibility at the clinic. The interview was completed with the question: 'Is there anything else you would like to add about your work or your working situation that hasn't been brought to attention?' The interview took place in a narrative form, and the interviewer's task was to deepen the participants' descriptions by asking probing questions such as 'What do you mean?' 'Go on'. 'Could you please explain that?' The first author performed all interviews during April 2008 at the participants' clinics in an undisturbed environment. The interviews lasted between 45 and 60 min, and were tape recorded and transcribed verbatim.

Approval for the study was obtained from the director of operations at each clinic. All participants received written and oral information about the study aim and procedure. Participation was strictly voluntary and participants were told that they could terminate their participation at any time. The procedure followed the ethical recommendations for Humanistic Social Science Research in Sweden (28).

Data analysis

The data were analysed using qualitative content analysis according to Graneheim and Lundman (29). The analysis began by listening to the tapes, and the transcribed text was read several times to become familiar with it. The analysis then continued systematically and in various steps. Words, sentences or paragraphs related to the dental hygienists' experiences of their physical and psychosocial work environment were identified and divided into meaning units. The meaning units were condensed (shortening the text while still preserving the core meaning) and thereafter each was formulated as a code. The codes were compared on the basis of their similarities and differences and then sorted into sub-categories and categories. The analysis has entailed a back and forth process, alternating between the entire text, codes, sub-categories and categories. An interpretation of the meaning of the categories emerged during the latter part of the analysis and is presented as a theme (29).

Findings

The analysis resulted in three categories: motivating, facilitating and trying, which together revealed a theme: *Being controlled in a modern environment characterized by good relationships*. The dental hygienists felt they were controlled by different kinds of time-related stress and structures in their work, even if their clinics were new, modern and comfortable. The good relationships with their co-workers, directors and patients were motivating factors. The findings are presented below category-by-category, and under the respective headings, the content of each category is presented by sub-categories, which are supported by quotations from the interviews. The theme, categories and sub-categories are displayed in Fig. 1.

Motivating

Relationships

The majority of the dental hygienists experienced that they had very good relationships with their co-workers and that

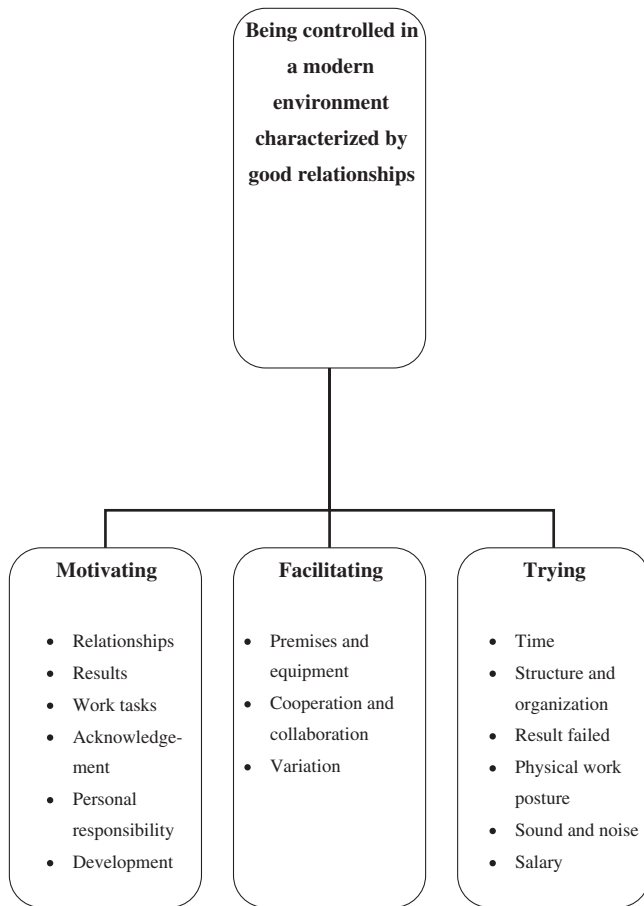


Fig. 1. Theme, categories and sub-categories based on dental hygienists' experience of their work environment.

these relationships were the most stimulating factor in their work environment. The dental hygienists reported having fun together, the atmosphere was good and they often laughed together. Expressions such as 'feeling of togetherness', 'open, you can say what you want' were often used by the dental hygienists during the interviews.

It's this kind of atmosphere that makes it rather easy-going, it's open, you can say what you want, that's how it is now, really.

The dental hygienists described working with people as stimulating. Encounters with many different kinds of patients and the possibility to help them stimulated the dental hygienists in their work. Furthermore, many dental hygienists considered that they had an open and good relationship with the director and that they could always speak to him/her. The director gave them confidence in their work performance and they felt that they participated in decision-making.

It's good, I get along very well with my boss... feel I can say what I think and if there's something I'm wondering about or want arranged, there's never any problem.

Results

Almost all participants considered good results in their work with patients to be a strong motivating factor. The dental hygienists expressed this as 'feeling joy in succeeding' and 'stimulating to see the good results of your work'. Giving patients good treatment and performing work well were of importance. The dental hygienists even talked about doing their work perfectly. However, they also felt it was important to have control over the situation and to be well prepared prior to the treatment.

When somebody comes back and when you see improvement. That's what's satisfying. That's the joy of it.

Work tasks

Work tasks were another motivating factor for the dental hygienists. Many were pleased and enjoyed the job because they felt it varied a great deal: '*...it's great to have different duties.*' Some dental hygienists thought it was fun to do fillings, while others liked other delegated work tasks. Some were more interested in treating patients with periodontitis. Several participants described liking the more external work. Some of the dental hygienists liked working in a team together with a dentist; others felt satisfied when treating their own patients and some thought that working both ways was perfect.

...working in a dental team is hard... so it's nice if you can have your own examinations the next day... it's more relaxed when you work by yourself, but being able to work both ways is perfect.

Recognition

Several dental hygienists felt empowered when patients showed their appreciation after successful treatments and wanted to come back to them. Some dental hygienists felt pride when patients said that they felt clean and well following a treatment. The increasing demand for dental hygienists among patients was also experienced as satisfying. Furthermore, dental hygienists also got affirmation when they participated in external events and informed people about oral health:

...well, we weren't so popular before... so it's fun to see how they ask for us now, this development has really been fantastic.

...well it's when they tell you directly that they thought it was good or when patients say they thought it went well and that they'd like to come back to you next time.

Own responsibility

The dental hygienists felt a great responsibility for making sure that work with the patient was good, and this responsibility provided stimulation in their work. The freedom to decide the length of treatments and to themselves assume responsibility for booking new appointments was perceived as extremely important for motivation. Assuming responsibility was considered by several dental hygienists to be the most fun and best part of their work.

... that's what's most fun assuming the responsibility, that I, well... that's been the best thing about being a dental hygienist, all this responsibility, making your own decisions.

Development

The dental hygienists reported that challenges in work were stimulating. Furthermore, they described how new work tasks gave them an opportunity to develop, and that this also felt exciting. Improving and updating your knowledge by learning about new findings and by taking courses was described as challenging and as something they wanted to do. Many of the dental hygienists were aware of the importance of developing and learning new things, and discussing with each other. It was also rewarding when specialists came to the clinic and held seminars. Being a mentor for dental hygiene students was also stimulating, as new knowledge and experiences were exchanged. Finally, the dental hygienists felt that the organization continuously updated the care and that opportunities for development were always available.

We're always getting newfangled things, everything's up to date, specialists visit and the like, we take courses and I think that's great fun.

Facilitating

Premises and equipment

Several dental hygienists expressed that their new, modern and comfortable clinics made the work easier. Some considered that they had good material, good lighting and dental equipment, which helped them in their work. Furthermore, many of the dental hygienists regularly sent their scaling instruments for sharpening, which also made it easier to work. The small treatment rooms meant that everything was close by, yet there was still room to move around and work from both sides of the patient. A couple of the dental hygienists had their computer correctly positioned, which was an additional facilitating factor.

Some participants also described premade trays as a facilitating factor. Finally, one of the dental hygienists sat on a saddle chair while working because it felt better for her back.

...then we have such good, pleasant facilities here and that's also an advantage that you feel good there, it's light, I think that makes things much easier.

Cooperation and Collaboration

All participants felt that all staff worked together, tried to help each other, and no one tried to dominate. They also thought it was a forgiving work environment and that the dentists stood up for them. Furthermore, they considered that they worked together in a professional manner, and that no one shirked their responsibility. One dental hygienist felt it was each person's responsibility to try to make the day pleasant and enjoyable for everyone, and that having an open dialogue was of great importance. Things that made cooperation easier were caring about fellow workers and having discussions at clinic meetings about both the positive and the less positive aspects of work.

... try to help each other. If you see that somebody has a lot to do, then you try, if you're not busy, to help each other.

Variation

Many dental hygienists experienced that task variation made their work easier. Different patients' treatments and the various tasks undertaken made work less static. To achieve variation, they tried to schedule a mixture of patient treatments on any one day or they varied their posture by sitting and standing during work. Some dental hygienists described how they always tried to think about ergonomics and to work using the right body posture. One reported being somewhat strict about patients' placement in the treatment chair to ensure that she sat correctly. A couple participants thought it would be good to include tray prep (where sterilization work is performed), because this gave them an opportunity to make different movements.

...but since I schedule the appointments... I can choose, if this patient is going to see me instead of the dentist, then I try to do a lot of fillings and a little orthodontics and such... Then you know there'll be variation.

Trying

Time

All dental hygienists experienced some form of time-related stress, and many used the term 'stressful environment'. The

clock felt like a considerable stress factor, and some dental hygienists felt they were often running behind because of the short scheduled treatment times or because too many patients had been scheduled. As a result, they came late, and patients had to wait and sometimes became irritated, which the participants found very stressful. The fact that everything was expected to go so quickly and all the talks about money and revenue were sources of stress for some of the dental hygienists. Furthermore, work tasks such as teamwork and examination shifts were considered by some to be stressful when they were forced to work at full speed in order to keep to the schedule. Several participants felt it was both time and energy consuming to fetch materials and instruments in the Tray Prep (where sterilization work is performed). A few dental hygienists found it troublesome that work took a little longer now than it had previously, owing to their age.

Stress from racing against the clock and all that, I think. That can add some stress, for sure, we're definitely controlled by the clock.

... they can't say that everybody should work in high gear all the time because that just breaks you down...

Structure

All dental hygienists experienced some aspect of the work structure as trying. Some felt frustration over being fully booked or the opposite, that it was frustrating when dental appointments were cancelled. They were also irritated about the fact that on some days they only saw periodontitis patients and on other days they only carried out examinations. One participant thought she had too few of her own patients. Some participants thought that all the external activities, such as preventive dentistry at child health services, schools and residential living homes, were an extra strain and made their work feel disharmonious. Some of the dental hygienists who assigned external activities to others thought it was exhausting when no one wanted to carry them out.

...that's the drawback with this, that on some days it's just periodontitis patients and on others just examinations, I wish there was more variation.

...there's too much of this kind of stress, when you assign people to go to places they don't want to go to, but they do it anyway out of loyalty...

Almost all participants had some feelings about working in a team. Some dental hygienists described doing delegated work as burdensome, while others thought the same about assistance

work. A couple of participants experienced great frustration when they had to wait for the dentist, especially when they were late themselves. Several participants felt that assisting did not take advantage of their competence, and one felt it was unfair that the dentist decided how teamwork should be carried out. Some of the dental hygienists felt irritation over the fact that they worked alone on the same tasks the dentist demanded help with.

Well the only time I get frustrated is when the dentist doesn't come at once and I'm late, you know, you have to stand around and wait for them to come and do the drilling...

Teamwork, then it's how the dentist wants it. I think everybody in the team should discuss what they want. How many rooms should you work in, how many patients should be scheduled, and so on.

Failed results

Some dental hygienists felt disappointment when patients did not cooperate. When results failed or stagnated, the dental hygienists felt frustration and were uncertain about what they should do. Some participants experienced that they had to stop themselves from assuming responsibility for the patients' oral health.

Well when you get these patients and you try and try and try and they don't give anything back, then you think, why am I sitting here with you, you don't listen and you don't want to, and then I maybe get a bit disappointed.

Ergonomics

Over half of the participants described experiencing pain from the neck, shoulders, back or fingers to varying degrees. Symptoms worsened for some of the dental hygienists when they worked in a high-torque posture and did static work. When the computer was positioned incorrectly and torque was unavoidable or they had to work too long with periodontitis patients, the pain was experienced as more trying. Long assistance periods also affected the symptoms negatively. Some dental hygienists felt that the problems became worse towards the end of the week. If the dental hygienists were careless about the placement of their own chair or the treatment chair, their physical symptoms were experienced as more trying.

...and then you twist your body when, when you have to write a status report on the computer, that's the worst. I have problems with one shoulder, and it really hurts sometimes when I write status reports about their pockets.

Sound and Noise

Some of the dental hygienists found all loud sounds and noise from technical appliances, mainly from the Tray Prep, disturbing. But even the ultrasonic suction system and the drills were trying for the participants:

When there's a lot going on you can't concentrate on what people are saying so you do notice that. And there's a lot of noise and that ultrasound machine, oh, I shudder when I think about it.

Salary

A couple of participants were frustrated over their poor salary. The dental hygienists with many years of professional experience also talked about how unfair it was that they received the same salary as newly trained dental hygienists coming directly from upper secondary school. Some thought it was irritating that they had a lower salary than some of the dental nurses, because the hygienists had greater responsibility.

... the fact that I get the same entrance salary as people coming directly from upper secondary school even though I have 15 years of professional experience that I've gathered and tons of other experiences and knowledge about people and working life, but you don't get any credit for that, so I think that's a big drawback.

Discussion

The results show that the dental hygienists experienced their work as motivating, facilitating and trying. These three categories formed the theme: *'Being controlled in a modern environment characterized by good relationships'*.

One of the motivating factors was the good relationship with co-workers. This result is supported by other studies (2–5), where good friendships and good social relations are factors that promote high job satisfaction. Furthermore, many of the dental hygienists in the present study reported having a good relationship with the director, who gave them confidence in their work and their performance. They also felt they participated in decision-making, which has also been shown to be of importance to job satisfaction (21, 22, 30). However, according to Herzberg's theory, relationships with supervisors, peers and subordinates are among the hygiene factors and not the motivating factors (7). Interestingly, relationships to co-workers were also mentioned as a facilitating factor in the present study, here expressed as cooperation and collaboration. Almost all participants in our study considered the work itself, with its many different work tasks, to be motivating, as well as seeing

the results of their work, having their own responsibility and making decisions themselves [cf. Herzberg's motivating factors (7)]. Several studies (4, 20–22) have shown that work tasks and variation in work are associated with job satisfaction. No one in the present study mentioned advancement as a motivating factor, although it is part of Herzberg's model (7). The explanation for this is likely that it is very difficult to advance in the profession. However, the dental hygienists in the present study did feel that development was a motivating factor [cf. Herzberg's growth (31)]. Herzberg's theory is based on two categories: motivating factors and hygiene factors (7), while the present study resulted in three categories: motivating, facilitating and trying factors.

In the present study, many dental hygienists experienced that variation in both working tasks and patient treatments facilitated their work and made it less burdensome and static. Despite this, more than half of the participants had physical complaints concerning their neck, shoulders, back and fingers to varying degrees. The physical complaints that have received most attention in research on the dental hygienist profession are musculoskeletal problems and carpal tunnel syndrome, which have affected many dental hygienists, often owing to the monotonous tasks they perform (9–15). Therefore, it is positive development that the work tasks have changed in recent years and have become more varied (23, 24).

The majority of the dental hygienists experienced some form of time-related stress, and many used the term *stressful environment*. Time was considered a great stress factor, and participants expressed this either as being controlled by time or as some elements of the work controlling others. According to Karasek's and Theorell's demands-control model, the main cause of stress at work is high demands coupled with low control (8). A study by Lang *et al.* (16) showed that dental hygienists felt stress in relation to scheduling and time management. Another study (17) showed that short scheduled treatment times were a source of stress for dental hygienists. In the present study, almost all participants had some feelings about teamwork. Some had negative attitudes towards teamwork because the dentists decided how it should be carried out and because assistance work failed to take advantage of the hygienists' skills. Others had negative attitudes towards working alone with the same tasks, where dentists demanded assistance, and still others enjoyed teamwork and described it as motivating. One explanation may be the differing views on dental hygienists' role in teamwork. A study from England (32) on dental hygiene students showed that they saw themselves as having a shared role

with the dentists in several tasks and as more of a partner in the teamwork. Dental students, however, described their role as the dominant one in the team (32). We consider it important for managers to be aware that such different views may exist within a profession and between different professions, and we encourage managers to bring up discussions on teamwork.

Methodological considerations

Eleven dental hygienists from four clinics in a county council in central Sweden were interviewed, which entails limitations related to both number of participants and geographical area. Interviews with other dental hygienists in a different area of the country or from private practices might have led to different findings. However, to achieve a rich and varied description of the dental hygienists' experiences of their physical and psychosocial work environment, participants of different ages, with a varying number of years in the profession and working in different clinics, were selected. To reduce the risk that data collection would change over time, the interviews were conducted during a period of a few weeks. An open dialogue took place with the second author (ME) during the analysis process to reach agreement and to avoid any changes in the process (29).

Conclusions

Good relationships with patients, co-workers and directors seemed to serve as motivating factors for dental hygienists, while cooperation and collaboration served as facilitating factor. However, regarding teamwork, there were diverse views: Some found it trying and others found it motivating. Other motivating factors were: seeing the results of one's work and having varying work tasks, satisfied patients, personal responsibility and opportunities to develop. Facilitating factors were the new modern clinics, helping/supporting each other, and variation in work tasks that made work less static. Trying factors were different kinds of time-related stress, certain work structure, uncooperative patients, static work and loud sounds.

Dental hygienists work in a profession that is considered new in comparison with the professions of dentists and dental nurses. More qualitative studies, conducted in different parts of the world, could provide a more comprehensive picture of dental hygienists' physical and psychosocial work environment. Furthermore, the present findings on teamwork need to be explored in more detail.

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