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Patient orientation and professional orientation of Dutch dentists

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Abstract – By providing dental health care, dentists dedicate themselves to the preservation and/or improvement of oral health in their patients. By adequately carrying out this care providers' role, dentists will gain recognition, esteem and respect from both patients and colleagues. This analysis aims to assess the patient and professional orientation of dentists and investigate which of their personal and practice characteristics can be regarded determining for these two aspects of their role as care providers. In the year 2000, data was collected via a written questionnaire sent to a random, stratified sample of 790 dentists, of whom 607 (77%) responded. Multivariate regression analysis shows that the preventive treatment concept, professional satisfaction and the number of hours per week that household tasks are performed are positive determinants for dentists' patient orientation. Also, the longer dentists are active in their profession, the more patient oriented they will be, and with more hours per week support from oral hygienists they are less patient oriented. As for professional orientation, dentists' preventive treatment concept and their professional satisfaction can also be considered positive determinants. Furthermore, dentists are more profession oriented when their partner works in the practice, with more hours per week support from oral hygienist(s) and with more collaboration contacts with other care providers. Compared to men, women are on average less profession oriented. Among Dutch dentists, there exist clear differences in the way they take on their role as care providers with regard to patient orientation and professional orientation.

Key words: dental practice; dentists; dentists–patient interaction; patient orientation; practices; professional attitudes; professional orientation

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By providing dental health care, dentists dedicate themselves to the preservation and/or improvement of oral health in their patients. Dentists distinguish themselves, however, in the ways in which they take on and perform this task. To learn more about this phenomenon, a theoretical model has been formulated based on the 'social production function (SPF) theory' (1–3). This model assumes that dentists act in an effective way when providing care and are also rational against the background of their knowledge and ideas about means and ends. It is also assumed that dentists, just like other people, generally strive to achieve two ultimate goals, namely 'social approval' and 'physical well-being'. People seek to achieve these high, general goals via lower objectives geared more to their direct actions ('instrumental goals'). It is assumed that esteem and recognition by patients and by colleagues are instrumental for dentists' striving to gain 'social approval' (4) and that the focus on the practice as a business and task distribution in the practice are instrumental for their strive towards 'physical well-being' (5, 6). Depending on a number of conditions that are encountered by them (related among other things to gender, age and practice situation), dentists differ in the way in which they try to maximize 'social approval' and 'physical well-being' in relation to each other. As a result, they also differ in the extent to which they seek to achieve the various (instrumental) goals.

This study focuses on dentists' striving towards 'social approval' by investigating to what degree they are oriented towards gaining recognition, esteem and respect from both patients (patient orientation) and colleagues (professional orientation). But how do dentists express this?

As for the patient orientation of dentists, it holds that it is not easy for dentists to convince their patients that they have provided 'good' care from a dental clinical point of view. Apart from the fact whether or not acute toothache was successfully treated, patients will mainly assess dentists on aspects other than their dental clinical actions. In particular, the way in which dentists approach patients (verbally) as regards the giving of information and consultation about the treatment to be provided is of importance (7). For instance, a study on satisfaction about dentists showed that patients form their opinion on the basis of not only the dentist's assumed competence but also information provided about keeping teeth healthy and the dentist's openness when asked questions and information on the cost of treatment (8). In addition, Redford & Gift (9) showed in a qualitative study that patients appreciate it when dentists inform them, among other things, about 'what needs to be done and why', 'what happens if no treatment is done' and 'what treatment is best and why', and according to Davis (10), giving no or insufficient information is a major source of dissatisfaction to patients about dentists. In short, the degree to which dentists respond to these wishes of patients is considered to be indicative in this study of their patient orientation.

With the esteem that dentists receive from colleagues and more so from the dental profession as a whole, it is of course of importance to have a reputation of being a 'good' dentist for patients. But, in addition, especially participation in specialist professional activities such as extra and refresher training courses, study groups, scientific meetings and reading specialist literature will render status and respect to a dentist (3). By regularly taking part in such activities, which is voluntary and not required by law, dentists distinguish themselves from their colleagues and implicitly show their knowledge and competence and their professional conviction of deeming it important to keep up-to-date and/or enhance this knowledge and competence. Participation in the aforementioned specialist professional activities is therefore regarded as an important indication for a dentists' professional orientation.

The aim of the analysis in this paper is to assess to what extent dentists in the Netherlands, in their striving towards recognition, esteem and respect when rendering dental care, inform patients and discuss with them the treatment to be given (patient orientation), to what extent they participate in various professional activities and how they assess certain professional tasks (professional orientation). Furthermore, it is investigated which personal and practice characteristics of dentists can be regarded as socially localizing and/or determining for these two aspects of their role as care providers.

Materials and methods

In the Netherlands, general dental care is mainly provided by approximately 5700 dentists in private practice. Besides these general practitioners, there are about 180 oral surgeons and 250 orthodontists active. Payment for dental care rendered takes place on the basis of a system of uniform fees for specific procedures. Dental care to youths (aged up to 17 years) is practically reimbursed to the full by means of national health and private insurances. For about 60% of adult patients whose annual income lies below a certain level, the cost of a regular check-up, oral hygiene instruction and tartar removal are also reimbursed, provided they visit the dentist at least once a year (11). Adults themselves will have to carry the cost of other dental treatment provided, but they can take out a private insurance against the majority of these costs.

Via the Data Stations Project, the Dutch Dental Association (NMT) periodically collects data about the factual care dentists render within this delivery system, about the way in which dentists run their practice and about views dentists have with regard to (current) issues within the dental profession (12, 13). For this study, in March 2000, a random group of 790 participating dentists was taken from the Data Stations Project. These dentists, all generalists and working in private practice, were proportionally stratified according to gender, age and geographical spread. The dentists concerned were requested to fill in a questionnaire about their work and practice situation, about the way in which they render dental care and about various other aspects of their profession. In addition, they were asked to provide data on a diskette about all treatment rendered to a random sample of a quarter of their patient population in 1998. This gathering of data on dental treatment was made possible by means of software modules espe-

cially designed to be used in the automated practice administration systems of the dentists concerned.

Out of the 790 dentists involved in this study, 679 (86%) answered the questionnaire, 607 (77%) of whom also provided treatment data over 1998 of a quarter of their patients. This article only focuses on the data collected through the questionnaire from this latter group of dentists. The mean age of the 607 dentists was 43.2 years in 1999, and 10% of them were females. Almost all (98%) received their education at a Dutch Dental School (Amsterdam, Groningen, Nijmegen or Utrecht): 2% were educated abroad. Furthermore, 76% worked in a solo practice with a mean number of 2360 patients and 24% in a group practice with a mean number of 3161 patients. With regard to these and other characteristics (qualification year, practice location), the 607 dentists prove to be a representative group of the Dutch population of dentists working in general practice (14, 15). Therefore, it was decided not to weigh the data for these characteristics.

Data collected

Patient orientation

With regard to their general patient orientation, dentists were asked to indicate through a percentage the extent as to which they recognize themselves personally in the ideal–typical description of a dentist who is distinctly patient oriented in practising his profession. In addition, they were asked how frequently (always, usually, sometimes or never) they really inform their patients about the diagnosis and the treatment possibilities and also how frequently (always, usually, sometimes or never) they check whether patients are au fait with the cost of treatment and, if not, inform them on this. To gain further insight into the extent as to which dentists really allow patients to jointly decide about their treatment, their communicative attitude was measured by means of a scale used in an earlier study (16). The Cronbach's alpha for this scale, consisting of seven items with a 5-point Likert scale, constitutes 0.67 in the study described here.

On theoretical grounds, a total score on the patient orientation of dentists was defined, based on data about the dentists' self-image as regards patient orientation, patient information and the communicative attitude. To this purpose, the above data was standardized (Z-transformed) and subsequently added. For this total score, it holds that the higher the score, the more patient oriented.

Professional orientation

As to what extent dentists believe that they themselves are geared towards the dental profession has been measured by asking them to indicate through a percentage to what extent they recognize themselves personally in an ideal–typical description of a dentist who is above all interested in the profession of dentistry. In addition, dentists were asked how many time blocks (morning, afternoon, evening) they spent in 1999 on attending extra and refresher training courses, taking part in structured peer review (study groups, clinical audits or an other form of intercollegiate auditing), profession-oriented meetings, congresses and seminars, and reading specialist literature. In accordance with a tried and tested measuring instrument used in the study by Lange et al. (17), dentists were also asked to assess as burdensome (negative), not interesting (negative), difficult (neutral), challenging (positive) or satisfying (positive) seven concrete professional activities (carrying out a diagnosis and treatment plan, rendering preventive treatment, restorative treatment, other dental treatment, discussing clinical–dental matters with colleagues, reading about clinical–dental affairs and attending extra and refresher training courses on clinical–dental subjects). Addition of these seven assessments, in which the negative assessments scored -1, the neutral scored 0 and the positive scored 1, gives a measure that is considered indicative of dentists' appraisal of particular dental tasks.

By adding in a standardized form (Z-transformed), the data on the dentists' self-image about his interest in the profession of dentistry, his/her participation in the aforementioned professional activities and his/her appraisal of dental tasks, a total score on theoretical grounds was also defined with regard to the dentists' professional orientation. Also, with this total score, it holds that an increased score points towards increased professional orientation.

General and profession-specific personal characteristics of dentists

Besides data on their gender, dental school and the number of years they have been active in the dental profession, further information was gathered from dentists about their concept of preventive treatment, their general professional satisfaction, the number of active chair-side hours per week, the work load they experience in the practice, the hours they themselves spend on household tasks and being the breadwinner or not. The concept of preventive treatment and

their professional satisfaction have been measured with the aid of additive scales. As for the first scale, 10 items were included with a 5-point Likert scale formerly used by Den Dekker (16). The level of a score in this scale forms an indication as to what extent a dentist has adopted a more curative (low score) or a more preventive (high score) treatment concept. The second scale is based on five items with a 5-point Likert scale derived from the empirical study by Gorter et al. (18) and also five items used earlier by Shugars et al. (6), whereby a high score indicates a high level of professional satisfaction. The scales for preventive treatment concept (Cronbach's alpha = 0.76) and for professional satisfaction (Cronbach's alpha = 0.91) prove to be reliable. The work load experienced in the practice is expressed in a score varying from 'not busy enough, can meet a higher demand for care' (score 1) to 'am too busy, am not able to meet the demand for care' (score 3).

Practice characteristics

With regard to the type of practice of a dentist, data was collected about the number of various collaboration contacts (with an other dentist, oral hygienist, dental assistant and/or dental technician) a dentist has when providing dental care. It was also investigated whether dentists when collaborating with other dentists in their practice do or do not treat each other's patients with some regularity. Furthermore, the number of hours per week in which oral hygienists are active in the dental practice was assessed and also whether or not the partner of the dentist works in the practice. As for the practice size, a (standardized) total score was calculated (Cronbach's alpha = 0.81) based on data strongly coherent with regard to the size of the practice population, the number of hours per week various employees (excluding dentists) work in the practice and the number of dental units. Here it goes: the higher the score, the larger the practice. In addition, the degree of urbanization of the practice location was determined with the aid of a code allocated by Dutch Statistics (CBS) to postal codes such as used in the Netherlands. These (recoded) codes vary from 1 (<500 local addresses per km^2) to 5 (>2500 local addresses per km^2) (19).

Statistical methods

In the analysis, attention was first focused on the distribution of patient orientation and professional orientation. In order to further identify more or lesser patient oriented and/or more or lesser task profession-oriented dentists, the ensuing total scores were analysed bivariately through regression analysis, based on the personal and practice characteristics of the dentists. To this purpose, the dental school was entered as a compound of several dummy variables (20, 21). Finally, the total scores for patient orientation and professional orientation were, each individually, used in a multivariate regression analysis with the aim to determine which personal and practice characteristics are valid as determinants for these total scores. Prior to this regression analysis, it was verified whether the various (independent) personal and practice characteristics were not (strongly) coherent (collinear absence check). In the regression analysis, the 'enter' procedure, as well as the 'forward', 'backward' and 'stepwise' procedures, was applied (22). Application of these different procedures generated strongly corresponding results, both with regard to the total score for patient orientation and the total score for professional orientation. After that, in a second round, multivariate analyses were repeated using only those personal and practice characteristics that proved to be of significant statistical influence in the first round across all four modes of entry ($P < 0.05$).

Results

Table 1 shows the distribution of the data of the patient orientation of dentists, and Table 2 reflects the data about their professional orientation. The bivariate and multivariate relations between the total scores such as defined for patient and professional orientation and the aforementioned personal and practice characteristics are shown in Tables 3 and 4, respectively. In addition, it appears that the patient orientation (mean 0.01; SD 2.36) and professional orientation of dentists (mean 0.02; SD 3.14) show some (weak) correlation (Pearson's (two-tailed) correlation = 0.09; $P < 0.05$).

Patient orientation

From Table 1, it appears that 80% of the dentists indicate that they recognize themselves reasonably to strongly in the description of 'a dentist who is distinctly patient oriented in practising his profession'. The others (20%) recognize themselves only somewhat, hardly or not at all. In addition, the vast majority (94%) of the dentists indicate that they inform their patients usually or always about the diagnosis and the possible treatment options, whereas 80% say they usually or always do so as

Table 1. Indicators for the patient orientation of dentists ($n = 603–605$)

Recognize themselves as a dentist 'who is distinctly patient oriented in practising his profession, who takes ample time to discuss with patients the diagnosis and treatment possibilities and decides together with the patient on the eventual treatment		
Not or hardly	(0–25%)	7%
Somewhat	(26–50%)	13%
Reasonably	(51–75%)	29%
Strongly	(76–100%)	51%
Inform patients about		
	Diagnosis and treatment possibilities	Cost of treatment
Never	0%	8%
Sometimes	6%	12%
Usually	54%	54%
Always	40%	26%
Communicative attitude[a]		
Noncommunicative	(Scale score 7 up to 17; mean score 13.0)	0%
Somewhat communicative	(Scale score 18 up to 24; mean score 22.7)	6%
Reasonably communicative	(Scale score 25 up to 31; mean score 28.5)	68%
Strongly communicative	(Scale score 32 up to 35; mean score 33.2)	26%

[a]Sum score of seven items with a 5-point (1–5) Likert scale (Cronbach's Alpha = 0.67).

regards the cost of treatment. As for their communicative attitude, reflected in the extent as to which they allow their patients to participate in deciding on the treatment, over a quarter (26%) of the dentists can be typified as strongly communicative, 68% as reasonably communicative and a minority of 6% as somewhat communicative. The dentists' assessment of their patient orientation is related to informing patients about the diagnosis and treatment possibilities (Spearman's (one-tailed) rank correlation = 0.28; $P < 0.00$), to informing them about the cost of treatment (Spearman's (one-tailed) rank correlation = 0.21; $P < 0.00$) and also to their communicative attitude (Spearman's (one tailed) rank correlation = 0.15; $P < 0.00$).

In the fourth column of Table 3, it is shown on the basis of the bivariate regression coefficients that dentists distinguish themselves in various ways as to which they are more or less patient oriented. It comes to the fore that the more preventively inclined

Table 2. Indicators for the professional orientation ($n = 601–604$)

Recognize themselves as a dentist 'who above all is interested in the profession of dentistry, to whom new dental challenges and the development of professional skills form the essence of the profession, whereby respect and esteem from peers are the driving forces'				
Not or hardly	(0–25%)			28%
Somewhat	(26–50%)			32%
Reasonably	(51–75%)			26%
Strongly	(76–100%)			14%
Total number of time blocks (morning, afternoon, evening) spent in 1999 on professional activities to improve knowledge and skills				
	Extra and refresher training	Peer review	Congresses, meetings	Reading of specialist literature
0 Time blocks	2%	46%	9%	0%
1–5 Time blocks	23%	15%	60%	2%
6–10 Time blocks	40%	26%	24%	20%
11–15 Time blocks	19%	9%	4%	33%
16–20 Time blocks	8%	3%	2%	11%
21 Or more time blocks	8%	1%	1%	34%
Orientation towards practising the profession of dentistry[a]				
Not	(Score −7 up to −5)			
Hardly	(Score −4 up to −2; mean score −3.0)			1%
Somewhat	(Score −1 up to 1; mean score 0.5)			3%
Reasonably	(Score 2 up to 4, mean score 3.3)			19%
Strongly	(Score 5 up to 7; mean score 6.0)			77%

[a]Sum score of seven items with possible scores −1, 0 or 1.

Table 3. Beta coefficients for the bivariate relations between patient orientation and dentist and practice characteristics and for the bivariate relations between professional orientation and dentist and practice characteristics ($n = 584$–607)

	Mean	SD	Prop.[a]	Beta coefficients	
				Patient orientation	Professional orientation
Dentist characteristics					
Female[b]			10%	0.07	−0.09[d]
Dental school[c]				0.06	0.04
Professional seniority (in years)	16.5	6.9		0.06	0.01
Preventive treatment concept (range 1–50)	34.5	5.7		0.25[e]	0.30[e]
Number of chair-side hours per week	34.0	6.0		−0.09[d]	0.08
Workload experienced (range 1–3)	1.5	0.8		−0.05	−0.01
Professional satisfaction (range 1–50)	36.9	7.7		0.17[e]	0.18[e]
Hours per week spent on household tasks	9.9	11.6		0.10[d]	−0.04
Sole breadwinner[b]			53%	−0.05	0.04
Practice characteristics					
Number of 'collaboration contacts'	2.5	1.2		0.01	0.14[e]
Treating each other's patients in the practice[b]			10%	−0.01	0.09[d]
Hours per week support from oral hygienist(s)	5.7	9.8		−0.02	0.23[e]
Partner working in the practice[b]			56%	−0.07	0.12[d]
Practice size	0.0	3.8		−0.03	0.12[d]
Degree of urbanization of practice location (range 1–5)	2.9	1.3		0.09[d]	0.06

[a]Proportion in sample.
[b]Dummy variable.
[c]Compound variable.
[d]$P < 0.05$.
[e]$P < 0.00$.

dentists are in their dental treatment concept, the more patient oriented they will be. The same holds for their professional satisfaction. As dentists work fewer active chair-side hours per week, perform more household tasks and hold their practice in a more urban setting, they are also more patient oriented.

From Table 4 reflecting the results of the multivariate regression analysis, it becomes apparent that the preventive treatment concept, the professional satisfaction and the number of hours per week that household tasks are performed may also be regarded as determinants for the dentists' patient orientation. Besides, it becomes clear from this multivariate approach that as dentists are longer active in their profession they will also be more patient oriented. However, they prove to be less patient oriented the more hours per week oral hygienists are working in their practice. These characteristics jointly account for 10% of all variance in the patient orientation of dentists.

Table 4. Beta coefficients for the multivariate relations between patient orientation and dentist and practice characteristics ($n = 576$) and for the multivariate relations between professional orientation and dentist and practice characteristics ($n = 542$)

	Patient orientation			Professional orientation		
Dentist and practice characteristics	Beta coefficients	SE[a]	Significance[b]	Beta coefficients	SE	Significance
Preventive treatment concept	0.25	0.04	0.00	0.26	0.04	0.00
Professional satisfaction	0.11	0.04	0.01	0.13	0.04	0.00
Professional seniority	0.11	0.04	0.01			
Hours per week spent on household tasks	0.11	0.04	0.01			
Hours per week support from oral hygienist(s)	−0.09	0.04	0.02	0.14	0.04	0.00
Female				−0.11	0.04	0.01
Partner working in the practice				0.08	0.04	0.04
Number of 'collaboration contacts'				0.08	0.04	0.05
R^2	0.10			0.17		

[a]Standard error beta.
[b]Two-sided significance level for t.

Table 5. Summary of the results of the bivariate and multivariate regression analyses with regard to the relation between patient orientation and/or professional orientation and dentist and practice characteristics

	Patient orientation		Professional orientation	
	Bivariate	Multivariate	Bivariate	Multivariate
Dentist characteristics				
Female	0	0	−	−
Dental school	0	0	0	0
Professional seniority	**0**	+	0	0
Preventive treatment conception	+	+	+	+
Number of chair-side hours per week	−	**0**	0	0
Workload experienced	0	0	0	0
Professional satisfaction	+	+	+	+
Hours per week spent on household tasks	+	+	0	0
Sole breadwinner	0	0	0	0
Practice characteristics				
Number of 'collaboration contacts'	0	0	+	+
Treating each other's patients in the practice	0	0	+	**0**
Hours per week support from oral hygienist(s)	**0**	−	+	+
Partner working in the practice	0	0	+	+
Practice size	0	0	+	**0**
Degree of urbanization of practice location	−	**0**	0	0

0, No effect; −, negative effect; +, positive effect. Bold signs express difference between bivariate and multivariate analyses.

Professional orientation

From Table 2, it appears that 40% of the dentists recognize themselves reasonably to strongly in the description of 'a dentist who is above all interested in the profession of dentistry'. A further 32% can only relate to this somewhat and 28% hardly or not at all. As for participation in professional activities to improve knowledge and competence, it may be noted that in 1999 dentists spent on average 10.3 time blocks, viz. mornings, afternoons or evenings, on average 4.6 on a structured form of peer review, on average 4.7 on attending congresses and/or meetings of scientific associations and on average 19.0 on reading specialist literature. Furthermore, it holds that 77% are strongly oriented and 19% reasonably oriented towards practising the profession of dentistry. The extent to which dentists consider themselves to be profession oriented is related with their participation in the above-mentioned professional activities (Spearman's rank (one-tailed) correlation varying from 0.22 to 0.11; $P < 0.00$) and also with their appraisal of certain dental tasks (Spearman's (one-tailed) rank correlation = 0.19; $P < 0.00$).

From bivariate regression coefficients in the fifth column of Table 3, it can be derived that the more preventively inclined dentists are in their treatment concept, the more profession oriented they will be. The same also holds as they experience more satisfaction when practising their profession. Furthermore, dentists are more profession oriented when their partner works in the practice. Also, the more hours per week the oral hygienist(s) is/are active in the practice, the more collaboration contacts dentists have with other providers of care when actually rendering care and the larger their practices are, the more profession oriented they will be. Those dentists who work together with other dentists in one practice and regularly treat each other's patients turn out to be more profession oriented too. Women, on the contrary, are on average less profession oriented in comparison with men.

The multivariate regression analysis, such as reflected in Table 4, shows that, with the exception of practice size and treating each other's patients in joint practices, the effect of these characteristics on the professional orientation of dentists will also remain intact when other characteristics are kept constant. Together, these characteristics explain the 17% variance in the professional orientation of dentists.

Discussion

In this paper, the analysis was focused on positioning dentists as regards their patient and professional orientation and the relation of these two aspects with some personal and practice characteristics of dentists. As for the latter aspect, it must be pointed out that this represents a part analysis.

After all, patient and professional orientation can also be related to various other characteristics. It is indeed quite conceivable that the character and social skills of dentists play a role as well (2). But, it is of course also of importance to what extent

dentists focus on the practice as a business and the practice as an organization which has to be managed. These two aspects in particular will be included in the overall picture in a further analysis.

Nevertheless, it becomes clear from this paper that consequently differences exist among dentists in the way in which they render dental care and the extent as to which they strive for social recognition in doing so, assuming that patient orientation is a specific way of gaining respect from patients, and professional orientation a means of gaining esteem and respect from colleagues. In accordance with the theoretical model, these differences appear to be related to variations in the conditions dentists encounter, which manifest themselves in certain personal and practice characteristics. In Table 5, the results of the bivariate and multivariate regression analyses are globally summarized. To some extent, it appears that dentists' patient orientation and professional orientation are positively related. This is on a par with the (theoretical) point of view that these orientations are both expressions of the general strive towards social approval. But, the fact that the correlation is only weak indicates that, in accordance with our model, dentists' patient orientation and professional orientation stem from distinguished sources of social approval (4). Therefore, it does not seem strange that both orientations are influenced by the same characteristics as well as by different characteristics. Bearing this in mind, the following offers a review of the effects shown.

Influence on both patient and professional orientation

The preventive treatment concept of dentists comes to the fore as an important characteristic that has an effect on both their patient and professional orientations: as dentists are more preventively inclined when rendering care, they are also more patient and profession oriented. As for patient orientation this relation is understandable, for, after all, a preventive approach in care means that the dentist has to make the necessary effort to inform patients and to convince them that they themselves are also responsible for good oral health. A higher level of professional orientation is also determined by a preventive treatment concept: a further indication that, according to current dental views in the Netherlands, much importance is adhered to prevention (23). In particular it is the more profession-oriented dentists who participate in the various forms of exchanging of ideas with colleagues (extra and refresher training, peer review, reading of specialist literature) that therefore come into wide contact with such views.

That activities of oral hygienists in the practice are positively related to a higher level of professional orientation corresponds with the influence of a preventive treatment concept on professional orientation. After all, the actions of oral hygienists in a dental surgery are strongly focused on preventive dental treatment. Remarkable is, however, the opposite influence of oral hygienists' activities in the practice on patient orientation, which emerged from the multivariate analysis. Possibly, certain dentists who have (more) assistance from oral hygienists in the practice leave the informing of and discussions with patients mainly to those oral hygienists (7).

That dentists, as they experience more satisfaction in their professional situation, are also more patient and profession oriented lies within the boundaries of expectation. As it happens, the results of various studies show that dentists with more professional satisfaction state less frequently that they experience as burdensome: patient contacts, the contents of their work, as well as the lack of career prospects and the lack of respect they get (17, 18, 24).

Influence on patient orientation

Two characteristics of dentists indeed prove to be of influence on patient orientation only. These are seniority in the profession and the number of hours per week dentists take on household tasks (in their private lives). That the patient orientation of dentists increases the longer they are active in the profession links up with the assumption by Grembowski et al. (25) that from experience older dentists respond perhaps better to a patient's wishes than their younger counterparts. Possibly, they know better which questions and worries occupy a patient's mind and throughout the years they have learned to react in an adequate way. Anyway, this is not a general effect; obviously it only applies to some dentists who are longer active in the profession that they are more patient oriented.

The influence on patient orientation of the number of hours per week that dentists take on household tasks (in their private lives) is remarkable, all the more so as it appears at the same time that this number of hours lies considerably higher for female dentists than for male dentists (23.4 h as opposed to 8.5 h). This indicates that the results of various studies of social medicine (26–29), which show that female doctors are more patient oriented in rendering treatment, seem to be more distinctive when it concerns dentists. Not the dentist's gender is a

measure for patient orientation, but the time dentists spend on housework.

Influence on professional orientation

The gender of the dentist does appear to be of influence on the professional orientation of dentists. Thus, female dentists come to the fore as lesser profession oriented than their male counterparts. The explanation given in a Swedish study for the conclusion that men do more crown and bridge work than women corresponds with this outcome. In the Swedish study, it is namely suggested that men, more so than women, are interested in technology and it is stated that: 'although not shown scientifically, it is well known that fixed prosthodontics has been highly ranked among dentists and may be regarded as a status symbol among both patients and dentists' (30). In short, female dentists are less performance oriented and are lesser inclined towards gaining social esteem on the basis of technical skills. This image corresponds with the outcome of a study on the style of working of male and female physicians, from which it appeared among other things that women perform technical medical procedures less frequently (29). It also corresponds with the circumstance that within various dental organizations (in the Netherlands) the participation of women dentists falls behind as opposed to their participation in the profession. A plausible explanation for these findings may be the fact that female dentists do more housework and/or that they, more often than men, have to balance childcare obligations with dental practice commitments. Given this circumstance, it is likely that female dentists participate in professional activities to a lesser extent.

The level of professional orientation of dentists is also higher as dentists have more different collaboration contacts when rendering care. Perhaps, this is because of the circumstance that through collaboration dentists gain in a direct way esteem and respect from colleagues (4). After all, having many different collaboration contacts means that consultation with colleagues takes place about all kinds of dental matters, whereby dentists again more or less implicitly show their knowledge and competence. This is why these contacts with other care providers form to these dentists, as it were, an (extra) stimulant for their professional orientation, viz. participation in various professional activities and their appraisal of performing certain dental tasks.

That the level of professional orientation of dentists is higher when their partner is also active in the practice has perhaps something to do with the fact that the partners in most cases (84%) occupy themselves with management tasks. It is feasible that the dentists concerned feel less burdened by all kinds of practice management affairs and are more able to focus attention on carrying out and enhancing their professional dental activities.

Neither influence on patient orientation nor influence on professional orientation

The way in which dentists fulfill their role as care provider by means of their patient and professional orientation is not determined by their dental school. The fact that from a dental clinical point of view dentists do not receive identical training everywhere (31, 32), has therefore apparently few or no consequences for their attitude towards patients and their professional orientation. Also, the number of active chair-side hours per week and the practice work load experienced by dentists have no provable effect on their patient and professional orientation. As for the practice work load, this finding links up with the outcome of the study by Gale (33), which showed that interaction with patients did not take up more time in comparison with deciding not to have such interaction. Nevertheless, it is quite thinkable that dentists when confronted with a heavy work load in the practice cut back on providing information and having discussions with patients (7).

Furthermore, the status of a dentist in his private life as sole breadwinner bears no influence on his patient and professional orientation in rendering care.

As for practice characteristics, both the practice size and the greater or lesser extent of the urban character of the practice location are of no direct consequence with regard to dentists' patient and professional orientation. It is true that dentists who are active in a larger practice appear to be more profession oriented and dentists in urban areas as more patient oriented, but in a further (multivariate) investigation there actually appear to be other factors on which this is based.

The findings presented in this paper pose the question whether variations in the patient and/or professional orientation of dentists are reflected in the dental care they render. Various authors have theoretically pointed towards such a relation (7, 31, 34), and in some studies, empirical indications were found (16, 35–37). As to what extent these indications really point to a (causal) connection between the patient and/or professional orientation of dentists and the factual care they render to patients will have to be investigated in further studies.

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