

# Views of patients and general dental practitioners on the organizational aspects of a general dental practice

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## Abstract

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**Objective** To examine the views of patients and general dental practitioners (GDPs) on the organizational aspects of a general dental practice and to see whether their views differ.

**Background** Health care has increasingly centred on the patient over the last two decades, and the patients' opinions have been taken more seriously. Although in other health-care sectors research on organizational aspects has been performed, research in dental care is lacking on this subject.

**Design** We developed two questionnaires covering 41 organizational aspects of a general dental practice: one for GDPs and one for dental patients. The questionnaires were handed out in dental practices to 5000 patients and sent to 500 GDPs.

**Results** We describe the results of the organizational aspects mentioned most by 25% of the dental patients. For most aspects, the views of the patients and GDPs differed significantly. However, both respondent groups mentioned the same category the most.

**Conclusions** The results of this study could be used on a policy level for the development of guidelines and on a practice level for individual GDPs to adjust practice management to the preferences of patients.

## Introduction

Over the last two decades, the views of patients on the delivery and improvement in health care have been increasingly valued,<sup>1,2</sup> and patient evaluations of care have been seen as an important outcome of health care.<sup>3</sup> In stimulating quality improvement, assessment of the organizational aspects of the health-care sector is high on the agendas of politicians, health-care

agencies as well as consumer organizations in the Netherlands.<sup>4-6</sup> Alongside these developments, the Dutch government plans to introduce new patient legislation.<sup>7</sup> In this context, patient expectations of and experiences with health care are being increasingly explored by means of focus group meetings and surveys among patients.<sup>8-12</sup> In dentistry, most studies on the quality of dental care focus on the medical technical aspects of the dental care delivered,

views on the patient–general dental practitioner (GDP) relationship and on patient satisfaction.<sup>13–16</sup> Studies in primary care show that patients highly value aspects on, for example, the availability and accessibility of care, such as ‘same general practitioner (GP) each visit’, ‘easy to speak to GP by telephone’, ‘appointment in a short time’ and on communication.<sup>17</sup> To our knowledge, no studies have been performed on the operationalization or organizational aspects of general dental practices by patients and GDPs to improve the quality of dental care. To reach a high level of patient satisfaction, it is important to know which items patients consider important and how they operationalize these items. Knowledge of the views of patients and GDPs on the organizational aspects of general dental practices is important to identify areas of disagreement as well as areas of agreement between both groups as a first, fundamental step to respond to consumer expectations in this process. This knowledge can be used for the development of guidelines. Therefore, a study was carried out to explore the following questions:

1. Which views do patients and general dental practitioners have on the organizational aspects of a general dental practice?
2. Which views on the organizational aspects do patients and general dental practitioners have in common and in which aspects do they differ?

The term ‘view’ embraces different dimensions, such as expectations, priorities or desires, and we have therefore used the term ‘view’ in this study.<sup>18</sup>

## Methods

### Development of the questionnaire

A list was developed covering the important areas of the organizational aspects of a general dental practice. They were divided into five domains: *infrastructure*, including accessibility and availability of dental care; *personnel*, including patient and employee satisfaction as well as consultation with colleagues and other

stakeholders; *information*, concerning information about treatments and opening hours of the practice; *finance*, including payment procedures; and *quality and safety*, concerning the use of guidelines and quality assessments in general dental practices. The selection of aspects was based on a systematic literature search and on three focus group interviews with two patient groups ( $n = 23$ ) and one GDP group ( $n = 11$ ). The preliminary list was reduced to a list of 41 organizational aspects of a general dental practice. Two questionnaires were developed: one for patients and one for GDPs. The patient questionnaire was pilot tested in a dental practice among 50 patients. This led to some small adaptations. The questionnaire for the GDPs was tested in pilot interviews with two dental experts and three GDPs. The patients and GDPs could each score on the 41 aspects. Finally, the patients were asked about the following characteristics: age, gender, education, dental insurance and family situation. GDPs were asked about age and gender.

In the questionnaires, patients and GDPs were asked to mention the 10 most important aspects of the 41 organizational aspects for assessing a general dental practice. For a description of the patient and GDP views, we have chosen to report on the aspects ranked by at least 25% of the patients as one of the 10 most important aspects (17 of 41 aspects).

### Study population

#### *Patients*

The study population ( $n = 5000$ ) consisted of patients visiting a dental practice for treatment or a dental check-up. The sampling procedure was as follows. The Netherlands is divided into 12 provinces. In each province, a stratified sample of three small cities (<30 000 inhabitants), three medium–large cities (between 30 000 and 80 000 inhabitants) and three large cities (over 80 000 inhabitants) was drawn. This procedure resulted in a list of 103 cities (not every province in the Netherlands has cities with more than 80 000 inhabitants). Subsequently, in each selected city, a general dental practice was ran-

domly chosen from all general dental practices registered in that city by the Dutch Dental Association in 2008. The general dental practices were contacted by telephone to explain the purpose of the study. If a general dental practice did not want to participate, the next practice listed in the Dutch Dentist Guide 2008 for that city was approached. To obtain 103 participating general dental practices, we contacted 147 general dental practices. Three general dental practices refrained from participation, so finally 100 practices participated. The general dental practices were asked to hand out the patient questionnaire to the first 50 adult patients (aged 16 years and older and able to understand the Dutch language) who visited the dental practice for a consultation or treatment in the third week of January 2009. Patients could complete the questionnaire at home and send it to the Radboud University of Nijmegen in a stamped addressed envelope. After one reminder, the response rate was 63% ( $n = 3143$ ).

#### General dental practitioners

In addition to the 100 GDPs participating in the patient-sample procedure, a random sample of 400 GDPs was drawn from all GDPs aged 65 years or younger registered in the Netherlands (Dutch Dental Association, 2008). In a covering letter, the GDPs were asked to participate in the study and to fill in the GDP ques-

tionnaire. After 2 weeks, a reminder was sent to the GDPs, and after 4 weeks, a new questionnaire was sent to those who had not yet responded. Finally, 54% ( $n = 216$ ) returned the questionnaire. The response rate of the GDPs in the patient-sample procedure was 87%, making an overall response rate of 61%.

#### Statistical analyses

Differences between the two samples in percentages of answers given were tested using chi-square tests. For each question, we also examined the answers given most frequently by patients and the GDPs. The analyses were performed with Statistical Program for Social Sciences for Windows, 16.0.1, 2007 (SPSS Inc. Chicago, IL, USA).

#### Results

The response rates were 63% in the patient sample ( $n = 3127$ ) and 61% in the GPD sample ( $n = 303$ ), respectively. The patient sample differed with regard to gender and age compared with national figures on visiting patients in general dental practices in 2009 (Table 1). Men were under-represented, and the 40- to 64-year age group was over-represented in the sample. Regarding the variable city size, respondents in small cities were over-represented (16%). For

**Table 1** Patient and general dental practitioner (GDP) samples and national figures: percentages of total

|                              | Patients ( $N = 3127$ ) | Visiting patients* | GDPs ( $N = 303$ ) | Dutch dentists <sup>†</sup> |
|------------------------------|-------------------------|--------------------|--------------------|-----------------------------|
| Gender                       |                         |                    |                    |                             |
| Male                         | 41.1                    | 47.4               | 72.8               | 69.1                        |
| Female                       | 58.9                    | 52.6               | 27.2               | 30.9                        |
| Age (years)                  |                         |                    |                    |                             |
| < 20                         | 1.3                     | 5.9                | 0.0                | 0.0                         |
| 20–39                        | 23.7                    | 31.2               | 22.1               | 29.2                        |
| 40–64                        | 60.0                    | 44.1               | 76.8               | 70.7                        |
| > 65                         | 15.0                    | 18.8               | 1.0                | 0.1                         |
| City size ( $n$ inhabitants) |                         |                    |                    |                             |
| Small (< 30 000)             | 42.3                    | 31.6 <sup>‡</sup>  |                    |                             |
| Middle (30 000–80 000)       | 35.6                    | 30.3 <sup>‡</sup>  |                    |                             |
| Large (> 80 000)             | 22.1                    | 38.1 <sup>‡</sup>  |                    |                             |

\*Percentages of patients attending a general dental practice once a year (2009).

<sup>†</sup>National data of general dental practitioners (2009).

<sup>‡</sup>Average percentages of inhabitants in small, middle and large cities in the Netherlands.

the variable age, the age group over 65 was over-represented in cities with inhabitants 30 000–80 000, and 20–39 years was under-represented compared to the other city sizes (not in a table). Of the GDPs in the sample, 73% were men. The gender and age distribution was comparable with national figures of Dutch dentists.

Table 2 shows the ranking of the 17 organizational aspects mentioned by at least 25% of the patient respondents as the 10 most important aspects to assess a general dental practice. The GDPs ranked 11 of these 17 aspects as less important than the patients. For 11 aspects, the percentages of the ranking were lower as well. The aspects with the largest differences in rank order (more than 10 places) were *a system for the check-up of perishable goods*, *routine oral examination reminder* and *open in the evening and/or in the weekend*.

Table 3 shows the percentages of respondents answering per aspect. For almost all aspects, significant differences in percentages of answers given by patients and GDPs existed ( $P < 0.05$ ), except for the aspects *Dutch-speaking GDP* ( $P = 0.12$ ), *information about treatments via Internet* ( $P = 0.11$ ), *guarantee on restorations*

( $P = 0.30$ ), *information about the treatment on the dental bill* ( $P = 0.90$ ) and *routine oral examination reminder* ( $P = 0.08$ ). In Table 3, those answers per aspect mostly mentioned by patients and GDPs (in %) are highlighted with grey. For most aspects, patients and GDPs showed agreement in answering category of first choice. They differed on six aspects: *information about treatments* (written and oral); *appointment for a routine oral examination*; *specialties in dental practice*; *information on dental bill* (payment procedure and name professional); and *practice accessibility*.

## Discussion

With this study, we aimed to answer two questions: (i) Which views do patients and GDPs have on the organizational aspects of a general dental practice? and (ii) Which views on the organizational aspects do patients and GDPs have in common and in which aspects do they differ?

For this purpose, two questionnaires were developed and handed out to 5000 patients and sent to 500 GDPs. The response rates were 63% (patients) and 61% (GDPs). This good response

**Table 2** Ranking and percentages (%) mentioned by patients and general dental practitioners (GDPs) as one of the 10 most important organizational aspects to assess a general dental practice

| Patient ranking (%) | GDP ranking (%) | Questions (aspects)*  |
|---------------------|-----------------|---|
| 1 (76.5)            | 2 (73.2)        | When you <b>call</b> a practice, how long should it take before the phone is <b>answered</b> ?                |
| 2 (61.9)            | 1 (74.3)        | Do you think it is desirable that a <b>GDP</b> should take <b>refresher courses</b> ?                         |
| 3 (57.0)            | 3 (59.1)        | Do you prefer a <b>Dutch-speaking</b> GDP?  |
| 4 (54.8)            | 6 (48.6)        | What <b>waiting time</b> is acceptable when you have an appointment?  |
| 5 (54.3)            | 4 (56.0)        | Through what media should <b>information</b> about <b>treatments</b> be available?                            |
| 6 (51.7)            | 8 (4.05)        | Within what time should it be possible to <b>make an appointment</b> ?  |
| 7 (43.0)            | 13 (33.5)       | On which treatments do you prefer a <b>guarantee</b> ?  |
| 8 (41.4)            | 14 (30.7)       | Should the dental practice undertake a <b>quality assessment</b> ?  |
| 9 (37.7)            | 29 (10.9)       | Should the dental practice have a system for the <b>check-up</b> of <b>perishable goods</b> ?                 |
| 10 (34.6)           | 7 (46.3)        | Do you prefer the <b>treatment</b> by the <b>same dental worker</b> ?   |
| 11 (33.5)           | 18 (23.0)       | Should the dental practice offer different <b>specialties</b> (orthodontist, etc.)?                           |
| 12 (29.6)           | 12 (36.6)       | Should it be clear in the dental practice who <b>executes</b> which <b>tasks</b> ?                            |
| 13 (28.3)           | 5 (49.9)        | Should the GDP work according to the <b>professional standard</b> ?   |
| 14 (27.4)           | 23 (17.9)       | What <b>information</b> should be on a <b>dental bill</b> ?   |
| 15 (26.9)           | 27 (13.2)       | Do you think it is desirable that you receive a <b>routine dental appointment reminder</b> ?                  |
| 16 (26.0)           | 36 (3.5)        | Would you prefer it if the dental practice was also open in the <b>evening</b> and/or in the <b>weekend</b> ? |
| 17 (25.0)           | 19 (21.4)       | Within how many <b>kilometers</b> do you prefer the practice to be physically <b>accessible</b> ?             |

\*Words in bold resemble aspects mentioned in the text.

**Table 3** Patient and general dental practitioner (GDP) views on the organizational aspects of a general dental practice. The answering category given most frequently is highlighted in grey

| spect                                    | Patients (%) | GDPs (%)  | P    |
|--|--------------|-----------|------|
| Accessibility by telephone               |              |           |      |
| Immediately                              | 5.1          | 2.0       | **   |
| Within 15 sec                            | 20.6         | 32.9      |      |
| 15–30 sec                                | 30.1         | 36.5      |      |
| 30–60 sec                                | 28.9         | 21.3      |      |
| More than 60 sec                         | 4.5          | 3.3       |      |
| Does not matter                          | 10.8         | 4.0       |      |
| Refresher courses GDP                    |              |           |      |
| Yes, 0–8 h/year                          | 5.4          | 4.3       | **   |
| Yes, 8–24 h/year                         | 17.5         | 29.8      |      |
| Yes, 24–40 h/year                        | 10.6         | 21.2      |      |
| Yes, over 40 h/year                      | 3.5          | 6.6       |      |
| Yes, any length is ok                    | 62.4         | 37.7      |      |
| No                                       | 0.7          | 0.3       |      |
| Dutch-speaking GDP                       |              |           |      |
| Yes                                      | 97.7         | 98.7      | 0.12 |
| Does not matter                          | 2.2          | 1.0       |      |
| No                                       | 0.1          | 0.3       |      |
| Waiting times                            |              |           |      |
| No waiting time                          | 1.4          | 2.3       | **   |
| 1–5 min                                  | 18.5         | 22.2      |      |
| 6–10 min                                 | 48.3         | 34.4      |      |
| 11–15 min                                | 25.5         | 31.5      |      |
| 16–20 min                                | 5.9          | 8.6       |      |
| More than 20 min                         | 0.5          | 1.0       |      |
| Information about treatments             |              |           |      |
| Written (y/n)                            | 48.0/52.0    | 72.9/27.1 | **   |
| Via internet (y/n)                       | 37.2/62.8    | 41.9/58.1 | 0.11 |
| Oral (y/n)                               | 48.7/51.3    | 80.5/19.5 | **   |
| Appointment for routine oral examination |              |           |      |
| Immediately                              | 0.4          | 0.0       | **   |
| The same day                             | 1.0          | 2.3       |      |
| Within 2 days                            | 4.4          | 1.3       |      |
| Within 1–2 weeks                         | 42.4         | 36.4      |      |
| Within 2–4 weeks                         | 40.7         | 52.3      |      |
| More than 4 weeks                        | 11.1         | 7.6       |      |
| Appointment for broken tooth             |              |           |      |
| Immediately                              | 1.8          | 1.7       | *    |
| The same day                             | 9.7          | 11.6      |      |
| Within 2 days                            | 47.6         | 51.3      |      |
| Within 1–2 weeks                         | 35.4         | 32.1      |      |
| Within 2–4 weeks                         | 4.8          | 3.3       |      |
| More than 4 weeks                        | 0.7          | 0.0       |      |
| Appointment for pain complaints          |              |           |      |
| Immediately                              | 23.0         | 14.2      | **   |
| The same day                             | 60.4         | 78.5      |      |
| Within 2 days                            | 16.2         | 6.0       |      |
| Within 1–2 weeks                         | 0.4          | 0.3       |      |
| Within 2–4 weeks                         | 0.0          | 1.0       |      |
| More than 4 weeks                        | 0.0          | 0.0       |      |

**Table 3** Continued

| Aspect                                 | Patients (%) | GDPs (%)  | P    |
|--|--------------|-----------|------|
| Guarantee                              |              |           |      |
| Restoration (y/n)                      | 61.4/38.6    | 64.4/35.6 | 0.30 |
| Crown (y/n)                            | 80.4/19.6    | 69.3/30.7 | **   |
| Prosthesis (y/n)                       | 69.5/30.5    | 57.4/42.6 | **   |
| Quality assessment                     |              |           |      |
| Yes, once                              | 2.9          | 4.5       | **   |
| Yes, once per 6 months                 | 6.3          | 0.7       |      |
| Yes, at least every year               | 36.8         | 9.2       |      |
| Yes, at least every 2 years            | 47.7         | 45.2      |      |
| Does not matter                        | 4.5          | 21.6      |      |
| No                                     | 1.8          | 18.8      |      |
| Check-up of perishable goods           |              |           |      |
| Yes                                    | 97.0         | 83.8      | **   |
| Does not matter                        | 2.5          | 8.9       |      |
| No                                     | 0.5          | 7.3       |      |
| Treatment by GDP                       |              |           |      |
| Yes, by the same person                | 74.2         | 68.1      | **   |
| No, but with the same education        | 8.9          | 4.4       |      |
| No, but the same treatment concept     | 10.5         | 21.8      |      |
| Does not matter                        | 5.5          | 3.4       |      |
| No                                     | 1.0          | 2.3       |      |
| Specialties in dental practice         |              |           |      |
| Yes                                    | 41.1         | 22.3      | **   |
| Does not matter                        | 40.0         | 29.9      |      |
| No                                     | 18.9         | 47.8      |      |
| Execution of tasks                     |              |           |      |
| Yes                                    | 70.8         | 89.4      | **   |
| Depending the situation                | 26.2         | 10.0      |      |
| No                                     | 3.0          | 0.7       |      |
| Use of professional standard           |              |           |      |
| Yes                                    | 58.0         | 82.1      | **   |
| What is the professional standard?     | 41.5         | 17.5      |      |
| No                                     | 0.6          | 0.3       |      |
| Information on dental bill             |              |           |      |
| Treatment (y/n)                        | 95.2/4.8     | 95.4/4.6  | 0.90 |
| Date (y/n)                             | 76.4/23.6    | 96.0/4.0  | **   |
| Amount (y/n)                           | 85.9/14.1    | 96.7/3.3  | **   |
| Payment procedure (y/n)                | 47.9/52.1    | 91.4/8.6  | **   |
| Name professional (y/n)                | 38.8/61.2    | 51.8/48.2 | **   |
| Routine oral examination reminder      |              |           |      |
| Yes                                    | 61.4         | 58.9      | 0.08 |
| Does not matter                        | 20.5         | 17.8      |      |
| No                                     | 18.1         | 23.2      |      |
| Opening in the evening and/or weekend  |              |           |      |
| Yes, only in the evening               | 15.2         | 3.7       | **   |
| Yes, only in the weekend               | 5.5          | 0.7       |      |
| Yes, in the evening and in the weekend | 18.4         | 4.7       |      |
| Does not matter                        | 16.5         | 7.0       |      |
| No                                     | 44.4         | 84.0      |      |

**Table 3** Continued

| Aspect                 | Patients (%) | GDPs (%) | P  |
|------------------------|--------------|----------|----|
| Practice accessibility |              |          |    |
| < 2 km                 | 14.3         | 1.0      | ** |
| 2–5 km                 | 39.9         | 11.3     |    |
| 5–10 km                | 27.4         | 20.0     |    |
| More than 10 km        | 2.9          | 7.7      |    |
| Does not matter        | 15.5         | 60.0     |    |

\*Statistically significant ( $P \leq 0.05$ ).

\*\*Statistically significant ( $P < 0.001$ ).

probably reflected the involvement of both patients and GDPs on the topic of this study.

### Limitations

The questionnaires intended to assess the views of patients and GDPs. As mentioned in the introduction, we use the term 'view'. We do not know whether patients and GDPs had different perceptions of the term 'view'. Instruments for assessment of patients' and GDPs' views should ideally be validated to ensure that the tools measure what they are intended to measure. In our study, the aspects were selected based on the literature studies.<sup>17,19</sup> Additionally, patients and GDPs had been consulted regarding the selection and description of the relevant aspects, and the preliminary questionnaires were pilot tested. A questionnaire with established validity would have been preferable, but to our knowledge, in dentistry, no research on the organizational aspects of general dental practices by questionnaires has been carried out.

As shown in Table 1, the patient sample with respect to gender and age differed compared with national data of visiting dental patients. We do not know the exact cause of this difference. Also, respondents in small cities were over-represented, while the gender differed not statistically within the variable city size, and in large cities, respondents from the oldest age group were under-represented. Still, the imbalance of the patient characteristics is limited, and therefore, it is to be expected that the influence of the variables on the outcomes will be little. The differences in outcomes were moderate, not

larger than 5%. Combining the restricted over- and under-representation of several strata in the population and the limited effect of age, gender and urbanization on the outcomes, the presentation of results on an aggregate level, as opposed to presentation per stratum, is a valid representation of the results of this study.

### General outcomes

Most outcomes differed significantly between patients and GDPs. Because of the large number of respondents, even small differences between patients and GDPs will turn out to be statistically significant. Therefore, we discuss the answers given most by both respondent groups.

Although, for most aspects, patients and GDPs showed great similarity. For the category of first choice, the differences in the percentages of the answer given most frequently of the two groups could be large. Some other outcomes are noteworthy. These outcomes will be discussed.

On the whole, patients are very considerate of GDPs. Patients were asked to answer the questions in an *ideal* situation. However, they answered the questions realistically. For instance, only a small percentage wanted the telephone to be answered directly, did not want any waiting time or wanted to have an appointment immediately.

Generally, GDPs are stricter about aspects involving medical technical dental care and those involving accessibility, such as questions concerning *accessibility by telephone*, *refresher courses* and *making appointments for a broken tooth* or *pain complaints*. The reason for this

could be that GDPs have an intrinsic motivation to help patients the best they can. In addition, GDPs can judge the urgency of a treatment better than patients.

It is also remarkable that GDPs are more reluctant than patients about the 'controlling' aspects, such as *guarantee on treatments, quality assessment systems* and *check-up systems for perishable goods*. GDPs have an autonomous profession and probably set norms themselves.

It is noteworthy that patients and GDPs do not prefer *opening hours in the evening and/or in the weekend*. Both groups answered this question with 'no' the most, but the difference between the patients (44.4%) and GDPs (84.0%) was substantial. The out-of-hours emergency services are well organized in the Netherlands, but GDPs are not willing to extend their regular (non-emergency) hours. An explanation for the findings of our study could be that in the Netherlands, there is a shortage of GDPs, and most dental practices have enough patients, so there is no economical urge to extend the service hours. A second explanation could be that in the Netherlands, most employees are given the opportunity to visit a GP or GDP during working hours.

It is also remarkable that almost half the patients do not prefer the practice to be open in the evening and/or weekend. We would have expected that more patients would prefer the dental practice to offer extended opening hours.

#### Relevance

The outcomes of this study give the GDPs insight into the views of patients and their colleagues on a dental practice level. A GDP can use these outcomes to adapt his/her practice to those views. For example, to obtain more satisfied patients, a GDP could send his/her patients a routine dental appointment reminder.

On a policy level, the outcomes of this study can be used for the selection of information. General dental practices will have to publish on the Internet according to the new patient legislation. Aspects such as information about treatment, dental bill or contact information (for

example telephone number and address information) are expected to become mandatory for practices in the near future.<sup>20</sup>

This study could be helpful for the development of guidelines. In health care, guidelines can be evidence based or consensus based. Evidence-based guidelines are mostly used in clinical settings, whereas consensus-based guidelines are mostly used in non-clinical settings.<sup>5</sup> For consensus-based guidelines, patient and professional preferences are essential and give insight into the consensus about the subject. The findings of this study give an indication of the views of both patients and GDPs.

#### Conclusion

This study demonstrates that patients and GDPs have different views on almost all organizational aspects of a general dental practice. Although the differences in the operationalization may be statistically significant, patients and GDPs mentioned the same category most often.

GDPs could use this information to adjust their practice more to the needs of their patients.

At the same time, policy makers and dental organizations could use the outcomes of this study for the development of quality assessment instruments, patient information tools or guidelines.

#### Conflict of interest

The authors declare that they have no conflict of interest.

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