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REVIEW ARTICLE

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Oral health care quality as viewed by leading dentists and their superiors – a qualitative study

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ABSTRACT

Objective: The aim was to investigate how leading dentists and their superiors view oral health care quality, as they are in key positions to pursue high-quality care.

Materials and methods: We interviewed five leading dentists and three of their superiors from Southern Finland via semi-structured telephone interviews including themes based on the Institute of Medicine's six quality dimensions. The material was analysed using theory-driven content analysis.

Results: Participants divided safety into occupational, instrumental and patient safety and considered timeliness as timing treatment clinically correctly. They also linked timeliness to patient-centeredness with wider opening-hours and quick access to care. Effective care was considered as a prerequisite for efficiency. Participants saw effectiveness as treating the illness, not the number of treatment measures. Leading dentists took survival time of fillings and cost per operation as a measurement of efficiency, and the superiors measured efficiency by the number of treated patients or visits. The leading dentists considered the equal treatment of patients, whereas the superiors took the amount of care provided with public resources and co-workers into consideration.

Conclusions: The participants shared similar views of oral health care quality which should enable cooperation. Observed minor differences relate to professional background and leading positions.

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Introduction

Quality is a complicated concept and has been defined in various ways in health care [1–3]. According to the Institute of Medicine (IOM) and the National Academy of Medicine, the quality of health care is 'the degree to which health services for populations and individuals increase the likelihood of desired health outcomes and are consistent with current professional knowledge' [4,5]. Traditionally, quality has been measured to provide the best possible benefits of the available knowledge of medicine to patients [6]. At present, there are few robust and easy-to-use measures of oral health care [7] and studies are ongoing to develop oral health care quality measures further nationally and internationally [8,9].

There are several methods that can be used and aspects to consider when assessing oral health care quality. In Europe and the United States, oral health care quality has been measured with numerous different methods, such as oral disease outcomes or oral health care costs and presence of early childhood caries [4,10,11]. So far, oral health care quality in Finland has been assessed from a technical quality aspect based on statistics and registers using indicators such as access to or waiting time for care [12].

In Finland, municipalities are responsible for providing tax-funded oral health care services for their citizens. In addition, services are provided in the partially subsidised private sector; these are mostly available in bigger municipalities and cities. Approximately, half of dentists work in the public sector and half in the private sector. In the public sector, leading dentists are responsible for oral health care operations in their oral health care unit. The leading dentist is the superior of the other dentists in the unit and the leading dentist's superior is usually a chief physician. Some leading dentists do clinical work in addition to managerial tasks. In the private sector, a dentist can work as a self-employed dentist at a dental clinic, be a shareholder in a clinic, or run their own clinic. In the private sector, the leading dentist oversees one unit and, in larger organizations, superiors' backgrounds may be other than dentistry, for example, they may be economists.

Quality of oral health care is a topical issue in Finland. There have been ongoing attempts to reform the Finnish social, welfare and health care system since the beginning of the twenty-first century. The latest major reform aims to ensure the availability of services for all Finnish citizens and to improve the quality of services. Implementation of the reform has been postponed for political reasons [13].

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According to Øvretveit, health care quality can be assessed from three viewpoints: patient, professionals and management [14]. In this article, we have selected the management point of view to assess oral health care quality. It can be assumed that leaders are responsible for overall quality management in their organizations and thus their views on quality likely have considerable influence on quality-related issues also in oral health services. It can also be assumed that they are aware of patients' and professionals' viewpoints. In addition to being in interaction with their subordinates (professionals), leaders respond, for example, to patients' complaints and are aware of reports of patient safety incidents and patient satisfaction measures. However, there is a lack of research on the views of leading dentists and their superiors regarding oral health care quality. In addition, because publicly available information on (oral) health care quality management is generally very scarce, interviewing leading dentists and superiors could provide information not available otherwise. Moreover, studying leaders' views on oral health care quality could help us to understand context and atmosphere of quality management in oral health care [15]. Also, as changes in the Finnish (oral) health care system can be expected in the future, it is important to find out how leaders of oral health care see the quality and how it is measured in their organizations already before the reform.

The aim of this study was therefore to investigate how leading dentists and their superiors view oral health care quality.

Methods

The interviewees were selected by convenience sampling. The target group consisted of all leading dentists ($n=6$) and their superiors ($n=4$) from a social and welfare federation of municipalities situated in Southern Finland. The federation includes six municipalities with almost 200,000 inhabitants. The federation participated in a discretionary pilot project in oral health care as part of a social welfare and health care reform planning project [16]. Due to their participation in the pilot project, it was presumed that they and their organizations have considered quality issues in some depth, as quality improvement was one of the targets of the reform. Permission for the study was granted by the federation of municipalities. This study is reported based on the consolidated criteria for reporting qualitative research checklist (COREQ) [17].

All of the leading dentists ($n=6$) and superiors ($n=4$) were contacted by email. They were invited to participate in the semi-structured telephone interview as part of a doctoral thesis conducted by the lead author (PS) on oral health care quality. Of these, five leading dentists and three superiors (chief physicians or in a similar position) accepted the invitation and gave their informed consent for the interview. The two who rejected the invitation justified doing so based on forthcoming personnel changes in their organizations. One dentist and one superior worked in the private sector, the others in the Public Dental Service (PDS). The individual interviews during December 2017 and January 2018 were conducted by telephone due to the long distances in Finland and better reachability of the interviewees.

The interview themes were sent one week before the interview by email. The themes were designed using the IOM quality dimensions (Table 1) as a basis for the interviews [6]. Three focus questions, presented in Table 2, were asked per theme. We adapted the Finnish Medical Association's translations of the IOM quality dimensions [18]. The researchers were familiar with the study subject based on their education and working experience. The interview themes were piloted with a former leading dentist.

The individual telephone interviews were all conducted by PS (MSc, BDs, DS) and the average interview length was 45 min. The interviews were recorded and transcribed verbatim. Field notes were made during the interviews. As the material was collected with semi-structured interviews based on IOM quality dimensions, the material was analysed using theory-driven content analysis [19]. First, the material was read and re-grouped based on the IOM quality themes (PS). Then, for each of the three focus questions presented in Table 2, similar expressions were searched from the material and sub-categorized and further grouped into main categories by PS and ER. The total material comprised 45 pages. No qualitative analysis software was used in the analysis.

Results

The views of five leading dentists and three superiors regarding oral health care quality were identified with respect to the following IOM dimensions: safety, effectiveness, patient-centeredness, timeliness, efficiency and equity.

Safety

All participants divided safety into occupational, instrumental and patient safety.

> I'd say that it's the same as in any other field or unit – you need to focus on safety from the customer's perspective as well as the safety of our staff. We also use a lot of devices, so device safety is a key issue as well. (Superior 2)

Occupational safety was described in terms of personal protection equipment, vaccinations, alarm systems and in-house training. Instrumental safety was described in terms of radiation safety, hygiene and the safety of the instruments used in clinics. Patient safety was described in terms of professional skills and their maintenance by continuous education, as required by law. Participants reported that in their organizations safety was at a good level and was mainly measured by recording and analysing patient safety incidents and through patient feedback. They also pointed out that high clinical quality ensures patient safety.

Effectiveness

Approximately, half of the leading dentists and superiors stated that effectiveness is treating the illness, not the number of treatment measures.

Table 1. Quality dimensions and their definitions by the Institute of Medicine [5].

Quality dimensions	Definition
Safe	Avoiding injuries to patients from the care that is intended to help them.
Effective	Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and overuse).
Patient-centered	Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.
Timely	Reducing waits, and sometimes harmful, delays for both those who receive and those who give care.
Efficient	Avoiding waste, in particular waste of equipment, supplies, ideas and energy.
Equitable	Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location and socioeconomic status.

Table 2. Focus questions per theme.

Theme	Question 1	Question 2	Question 3
Safety	What does safety mean in your opinion in oral health care?	How safety is visible in your own organization?	How safety is measured in your organization?
Effectiveness	What does effectiveness mean in in your opinion oral health care?	Is effectiveness measured in your organization?	How effectiveness is measured in your organization?
Patient-centeredness	What does patient-centeredness mean in your opinion in oral health care?	How patient-centeredness is realized in your organization?	How patient-centeredness is followed in your organization?
Timeliness	What does timeliness mean in your opinion in oral health care?	How timeliness is realized in your organization?	How timeliness is estimated in your organization?
Efficiency	What does efficiency mean in your opinion in oral health care?	Is efficiency measured in your organization?	How efficiency is measured in your organization?
Equity	What does equity mean in your opinion in oral health care?	How equity is realized in your organization?	How realization of equity is followed in your organization?

> We heal the sickness, it's not necessarily that we do many procedures. (Leading dentist 1)

One leading dentist and one superior also considered higher direct treatment costs to be acceptable if the treatments are more effective in the long term than cheaper treatment alternatives.

> When we do a good job the first time, it might seem like more money, but in the long run, it will eliminate unnecessary extra visits. (Superior 2)

For instance, one leading dentist and one superior preferred ceramic crowns instead of large plastic fillings where applicable. They also stated that treatments that have some health benefits should be provided, and only to patients who will benefit from the treatment. Many participants considered prevention of oral diseases as the most effective action. Most participants considered effectiveness in their units to be measured by the survival time of fillings and root-treated teeth.

Patient-centeredness

According to a few leading dentists, patient-centeredness meant that the dentist should consider the patient as a whole, not only their dental health. One superior pointed out that the patient should also feel that they benefit from the treatment through realized improved health. They also considered patient interaction as an important source of in-house training.

Several leading dentists and one superior mentioned the availability of services as an aspect of patient-centeredness: oral health care services should also be available in the evenings, which is not the case in most public units.

> Well, we offer evening services, but I don't know if we do it as much as the pulse of the city, so to speak, would require. (Leading dentist 4)

According to the participants, the practices in their organizations were mostly patient centered. The main measure of patient-centeredness was customer feedback, which nearly all participants brought up.

Timeliness

All participants saw timeliness as timing treatment clinically correctly, for example, timing orthodontic treatment according to the phase of dentition development. Most leading dentists and superiors linked timeliness to patient-centeredness in terms of wider opening-hours. They also considered quick access to care as timeliness. A few leading dentists and one superior viewed the prevention of oral problems as the most well-timed treatment.

> That is what real time means, and then we, in a way, go to preventive measures, which is about how we should take care of health so that sickness would not develop. (Leading dentist 4)

Regarding clinically correct timing of treatments, one of the superiors pointed out the importance of multi-professional cooperation between dentists and oral hygienists when scheduling care. One of the leading dentists mentioned educational cooperation with general practitioners: for example, artificial joint replacement patients should be checked at the correct phase prior to joint surgery.

Additionally, one of the superiors mentioned that the procurement of materials and maintenance of equipment should be timed correctly to avoid delays to work.

According to all participants, timeliness was realized rather well in their unit, but there was still room for development, for example in reaching the services by telephone and prevention of oral diseases. Half of the interviewees mentioned that timeliness is measured by third available non-on-call dentist appointment time (T3 factor).

Efficiency

Nearly, all participants viewed effective care as a prerequisite for efficiency in oral health care: in an effective system, more health benefit should be realized per unit of input.

> If we fill teeth, and then there are shooting pains, then the treatment is not productive or efficient; instead, it should also be impactful. (Leading dentist 2)

One superior also considered efficiency as a rational distribution of work and the effective use of working time, ensured by in-house training.

> In our organization we've tried to get the right people and the right competence aligned so that it would produce as much as possible, not just in visits but also in added value to the patient. And in this way the dental assistant–dentist working pair becomes more efficient. (Superior 2)

One superior considered mobile clinics and sufficient investment in vulnerable patient groups, such as children, as features of efficiency in oral health care.

Some leading dentists mentioned the following measures of efficiency: T3 factor (also in timeliness dimension), customer feedback, survival time of fillings, and cost per operation. Additionally, a few superiors mentioned the number of patients treated and number of visits as measures of efficiency as better measures are lacking.

Equity

Most of the leading dentists considered equity as segmenting patients and treating each patient group equally: children should be treated differently than adults, and people with special needs differently than those without special needs.

> It means that regardless of how we group people according to age, gender and general level of coping, inside this group we treat people equally. And that means the entire group has the same rules. (Leading dentist 1)

Some leading dentists also considered that a clear decision tree guiding the whole care path from first contact supports the equal treatment of patients with similar health problems.

Most superiors described equity as equal opportunities for care. In addition, one superior also stated that use of public resources (prioritization) should be evaluated more thoroughly across health care sectors:

> Is it sensible to put money into giving someone root canal treatment with a microscope, in, let's say, the molar, while a cancer patient is waiting for treatment for months, which is so traumatic for that person? (Superior 1)

In addition, one superior mentioned the equal treatment of employees in discussing the equity dimension.

According to the participants, the intention is to treat all patients equally. T3 factor was also used as a measure of equity, and the realization of children's dental examinations was mentioned as measurement of equity by most of the leading dentists.

Discussion

Leaders' views of quality mainly followed the IOM original definitions and they also shared rather similar views of oral health care quality in all of the studied dimensions. However, some minor differences, possibly related to professional background and position in the organization, were visible. Some interviewees even broadened the dimensions.

Regarding the views of quality with respect to the studied six dimensions, some differences between the IOM original definitions (Table 1) and our findings can be found. For example, concerning patient-centeredness, none of the participants mentioned that patients' values should guide all clinical decisions. When discussing efficiency, nobody mentioned waste, but viewed that effective care was a prerequisite for efficiency. These discords are plausible because there is no consensus about the quality of oral health care [20]. The health care system in the US, where the IOM dimensions are based is also totally different compared to the oral health care in Finland [21,22]. The interviewees clearly had some difficulty distinguishing between the quality dimensions. There were also a couple of cross-cutting themes: accessibility rose in the discussions regarding the patient-centeredness and timeliness domains, and continuous education was discussed in relation to safety, patient-centeredness, timeliness and efficiency. In addition, the participants considered patient-centeredness and timeliness in quite a similar way and, thus, wider opening hours and access to care were discussed in both themes.

Otherwise, the views were well in line with the original definitions or even further broadened the original IOM definitions. IOM quality definitions have been widely accepted and used globally, and it seems that they can be used as a basis for discussion in an oral health care context in Finland despite the major cultural and societal differences between the USA and Finland, e.g. in organizing oral and general care [1,21–23]. In addition, Righolt et al. [9] have shown that the IOM quality framework provides a good basis for defining oral health care quality internationally. In addition to the original IOM quality domains, the international working group in Righolt et al. study considered access to care as a separate domain of oral health care quality [9]. In this study, the interviewees considered access to care as part of patient-centeredness and timeliness, while the international working group mentioned access to care as a relevant aspect of all six IOM quality dimensions [9]. The rather good access to oral health care services in Finland [24] likely explains why access to care was mentioned less frequently by our study

population. Another interesting missing theme was evidence-based dentistry/medicine paradigm, it was not brought into discussion by the participants under any dimensions. The reason is unknown, but the interview may have been too short or representing the dimensions beforehand may have limited the answers.

The lack of quality measures was considered a challenge, and many participants hoped for better indicators of oral health care quality. Some indicators of certain quality dimensions were mentioned, but for many quality dimensions accurate measures were missing. Current quality measures described by the participants were rather technical, such as T3 factor and survival rate of fillings, and most of the measures give information from the past. Recently, Righolt et al. [8] have published a list of 13 quality measures for oral health care that could provide valid and easily accessible tools to measure oral health care quality. However, none of those measures were specifically brought up by the participants during the interviews. The measures proposed by Righolt et al. [8] could provide useful and quite easily collectable information also for Finnish oral health care, such as new carious lesions in adult patients per year. However, the proposed measure set seems quite narrow compared to the IOM quality framework. In line with this, Byrne and Tickle have argued for a comprehensive oral health care quality measure set that crosses each dimension of quality [20].

Our findings show that the leading dentists and their superiors' views regarding oral health care quality were rather similar, especially with respect to safety and efficiency, despite differences in professional background and leading position. However, due to these differences, the leading dentists focused more on everyday issues and the superiors had a less clear picture of oral health care at a detailed level. Regarding the equity theme, the leading dentists mainly considered the equal treatment of patients, whereas the superiors took the amount of care provided with public resources and co-workers into consideration.

On the other hand, there were some differences in views on oral health care quality depending on professional and educational background and leading position. For instance, the leading dentists took survival time of fillings and cost per operation as a measurement of efficiency, and the superiors measured efficiency by the number of treated patients or visits; thus, we can see that the leading dentists had a more sophisticated view of oral health care quality and efficiency than their superiors. However, it is not known how these differences in quality views influence cooperation on oral health care quality related issues within and between these organizations.

The participants were interested in and considered the discussion on oral health care and its quality as important, possibly partly because they were involved in the discretionary pilot project. However, all IOM quality dimensions initiated fruitful discussion among the participants. We therefore consider that the telephone interviews provided sufficiently rich information and adequate answers to the research questions [25].

This study is not without limitations. First, due to the qualitative nature and design of this study, the results represent the views of a purposefully selected group of leading dentists and their superiors. The participants, except for private sector representatives, were working in communities taking part in a pilot project connected with the planned social welfare and health care reform. This probably had some effect on their views regarding quality: lately, they may have paid more attention to quality. Introducing the quality dimensions in advance is also likely to have limited their answers to these dimensions to some degree and left less space for more authentic views on quality. These issues may have hampered the generalizability of our findings even to other Finnish leading dentists and their superiors.

In this study, we got insight into what leading dentists and their superiors think about oral health care quality. However, as clinical practitioners, patients and politicians also have power to influence how oral health care is being provided, it would be beneficial, or even essential, to investigate lay peoples and general dentists' views of oral health care quality [4]. It would also be interesting and necessary to investigate the quality views of leading dentists and their superiors with a larger sample of participants to widen the study further. This would enable more detailed investigation of whether quality views differ between leading dentists and their superiors. Open questions about quality without IOM dimensions could also provide a more authentic view of quality. In addition, we could not assess how important participants viewed each quality dimension relation to each other [20].

Conclusions

The leading dentists' and their superiors' views of oral health care quality did not seem to differ significantly, despite their different professional backgrounds and leading positions. This should enable cooperation on oral health care quality related issues within and between these organizations. Leading dentists and superiors need easily collectable and valid measures [8] to monitor the quality of oral health care in their units.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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