Healthcare Professionals' Experiences of the Work Environment After Patients' Access to Their Electronic Health Records - A Qualitative Study in Primary Care

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Abstract. For healthcare personnel, the work environment is already challenging, and when eHealth systems are introduced they are often considered to further add to the complexity. This paper investigates the impact of patients' access to their electronic health records on healthcare professionals' work environment in a primary care setting in Sweden. A work environment theory-driven analysis, focusing on perceived demands, control and support, was conducted on 14 semi-structured interviews of different primary care professionals. The professionals expressed a slight increase in demands, loss of control and some increase and decrease of support. This study discusses insights on how patients' access to health records can have an impact on healthcare professionals' work environment.

Keywords. Patient Accessible Electronic Health Records, Work Environment, Primary Care, Demand-Control-Support model

1. Introduction

Patient Accessible Electronic Health Records (PAEHRs) have been implemented in many countries [1–3]. For healthcare personnel, the work environment is already challenging [4], and more eHealth systems can further add to the complexity of the healthcare work environment [5]. Previous research has looked into healthcare staff and the PAEHR's effects on their work environment [6–8]. However, no studies have used a work environment theory-driven analysis [9] and few studies focused on primary care.

In the 1970's Robert Karasek developed a model for analyzing work-related stressors associated with cardiovascular illness. His 'demand and control model' was thereafter further developed together with Töres Theorell and is now one of the most widely used models for explaining psycho-social work conditions and their effects on health [9]. This model suggests that the combination of perceived *demands* and perceived *control* at work is a determining factor for stress. High job strain, i.e., high demands in combination with low decision latitude and low social *support,* are associated with the highest risks for health problems [10]. High demands usually are not a problem if

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combined with high self-control over work situations, tools, and substantial social support from management and colleagues. A skilled worker can experience this as a challenging situation. They have complete control over the work conditions and planning and receives full support when needed. The work is efficient and sustainable. On the other hand, if high demands are not met by substantial control and social support, the situation will soon be dangerous. [11]

Emanating from the Demand-Control-Support theory [9], this paper investigates the impact of patients' access to their health records on healthcare professionals' work environment in a primary care setting in Sweden.

2. Methods

In this study 14 healthcare professionals were interviewed representing seven different professions (counselor [C1], dietitians [D1-2], nurses [N1-2], physicians [P1-3], physiotherapists [PT1-2], occupational therapists [OT1], and medical secretaries [MS1-3]) working at a primary care center in Region Stockholm, Sweden. The semi-structured interviews were performed six months after patients were given access to the PAEHR through the national patient portal 1177.se [12]. Study participants were recruited during workplace meetings and informed consent was retrieved before the interviews. Interviews were performed face-to-face at the primary care center, recorded and lasted 30-45 min. The interview questions were related to the professionals' work in relation to the PAEHR. The interviews were transcribed and analyzed. The study has ethical approval from the Ethical Review Board in Stockholm (2017/1028-31).

The analysis was conducted with focus on effects of the implementation. Information coded under 'effects' was thereafter coded into three sub codes, *demand, control and support* based on the theoretical reference framework [9] which aims to provide an in-depth understanding of professionals' work environment. The other main codes were related to factors influencing implementation, the implementation processes, thoughts about suggested functions and about related functions.

3. Results

There was a general view among the respondents that little has changed due to and after the implementation of PAEHR. The patients seemed to still want their healthcare records printed on paper, although there was a hope PAEHR implementation would reduce the printing workload. Some respondents reported that they were trying to encourage patients to go online and look at their own PAEHR. There was also a sense that it was hard to reach out to patients about reading their PAEHR.

3.1. Demand - changes in how the PAEHR is documented

Despite prior requirements, some respondents were more aware of writing the notes on time and more comprehensively after the launch of PAEHR, whereas some reported no effects on their writing style. Being more considerate so the notes are comprehensible to more patients was described as initially being mentally demanding and time-consuming. There was also a view that this linguistic consideration was only in the beginning and that the professionals had turned back to how they used to write. Respondents

experienced pressure to write notes within the time-frame, which was described as challenging due to already existing time constraints.

The respondents reported increased documentation, e.g. adding more details to notes and writing down all interactions to avoid patients complaining of missing information.

''When writing perhaps you think a bit more before you express yourself and write. I try to be clear because I think that someone might read this. Maybe more now than before'' [D2]

3.2. Demand - increased workload due to patients' reactions to PAEHR

There was an experience of a slight increase in phone calls from patients regarding what is written in the records. Patients had e.g. questioned or refuted their diagnoses, how the notes were phrased by the healthcare professionals, notes written at the center and in one case notes from another center. There had also been a request from a patient to change old notes. Patients had also questions about their lab results, due to lack of understanding parts of it, or wondering how to move forward. Some of the patients' questions were experienced as too difficult to answer or irrelevant. There were also two cases where patients had booked a consultation only to get an explanation after reading their lab results, or to have their records read by a healthcare professional since they had not managed to read them online themselves.

''My experience is that the patients are very demanding, they might read some lab results online and wonder what they should do. A lot of complicated questions that we can't answer. It can be hard. We encounter a lot since we are the first contact'' [N2]

3.3. Demand - increased discomfort in interaction with patients and their informal carers

One respondent expressed feeling some uneasiness after unintentionally revealing a serious diagnosis to a patient that the patient was not aware of, assuming the patient had already read about it online. In another example a respondent felt some discomfort when a new patient from another primary care center after receiving lab results had requested a telephone consultation instead of a physical consultation. There has also been an instance where a relative had read a patient's health record which evoked discomfort for the interviewee.

''I did not know [them], I had never met [them], [they] had another physician, it did not feel right and I was supposed to give an evaluation on the phone, it did not feel right'' [P2]

3.4. Control - reduced control of planning and organization of work

The pressure to complete the documentation quickly after an appointment can also be perceived as a loss of control over when or how fast the notes are written. Reduced control was also experienced as they feared that the record lost some of its purpose to communicate medical information to other healthcare professionals, when writing the notes in a way that the patient can understand, and since the notes might be viewed by patients.

''This and that should be done, and it does not really work that way, we work with humans and humans get sick and there are no substitutes and the workload is different at different times'' [PT 2]

A potential reduced control over patient supervision was raised where there had been a case where patients after reading their test-results online canceled routine check-ups without consulting with the healthcare professionals. This was considered a risk as other examinations were planned for the check-up. Some respondents also felt an insecurity on how patients were informed, since unsigned information could be made available to patients when it comes to serious diagnoses. Another respondent had to call patients with suspicion of a serious diagnosis immediately, since they were aware the patient could see this.

3.5. Support - reduced support to coworkers and increased support in interaction with patients

The implementation of the PAEHR was said to work as a reminder to write the records on time, more precisely and correctly, but there was also a worry that the changed way of writing makes the note less understandable to other professionals and may thus be less of a support to them. Some respondents also stated that they could not to communicate freely through the records since patients could read them.

One respondent mentioned using the documentation to improve communication with patients, by documenting all conversations and referring patients to them when they try to refute previous agreements. Another also reported recommending the patients to access the PAEHR when they requested their healthcare records on paper.

''Sometimes when they request copies of their records you can say that you can go in and look at them yourself.'' [MS3]

4. Discussion and Conclusion

Although there was a general sense that little had changed due to the implementation of PAEHR, the primary healthcare professionals did report some increase in demand and slight increase of support but also some loss of control and support as previously reported. [13, 14]

According to the demand-control-support model, the reports of increased demand, loss of control and support would indicate an increased risk for health problems among the healthcare professionals. This since if the worker does not have control of work conditions and planning, does not have usable tools and feels exposed if things go wrong, the work will be unhealthy [11]. Such work situations are associated with high stress. In this extreme, health risks of different nature are common and people do not withstand the situation for long [11]. However, what is truly an impact of the introduction of the PAEHR in this case is a bit unclear since some of the reports on demand on documentation is said not to be new and that patients also prior to the implementation were able to request their healthcare records on paper. All records are now more accessible, hence the professionals experience a loss of control over the records.

There have been reports of the PAEHR supporting the communication with patients but also an increase of demand from patients. This increase in involvement by the patient is not necessarily negative, rather active patients have better health outcomes [15]. Patient involvement can also be viewed as a control function, where the patients could support the professionals by assuring that the information on the records is correct, but rather there is almost a sense of fear among healthcare professionals. Further studies are needed to investigate the professionals' perspective on the PAEHRs' potential to

improve the work environment. Reflexivity and other potential bias will be discussed in future longer publications.

In conclusion, e-health solutions that improve patient empowerment and patients' access to information are important, but when implemented we also need to consider their impact on healthcare professionals' work environment. When introducing new e-health solutions assessments using the demand-control-support model could be carried out to identify and reduce stress factors. Finding innovative ways to empower patients while at the same time not increasing demands or reducing support for healthcare professionals will be essential in the future.

Acknowledgement

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