

IMPLEMENTING VIDEO CONFERENCING IN DISCHARGE PLANNING SESSIONS

**LEADERSHIP AND ORGANIZATIONAL CULTURE WHEN
DESIGNING IT SUPPORT FOR EVERYDAY WORK IN
NURSING PRACTICE**

Malin Hofflander

Blekinge Institute of Technology
Doctoral Dissertation Series No. 2015:07
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Doctoral Dissertation in
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”Every system is perfectly designed to get the results it gets”

P. Batalden

Abstract

The overall aim of this thesis has been to study the implementation process concerning the use of video conferencing in discharge planning, during and after a development project in a region in southeast Sweden. The research approach has been developed within a new interdisciplinary research area, Applied Health Technology. The main focus of the research has been on how the new IT solution has affected everyday work, and in what ways management supported staff during the implementation process. The study design has a qualitative approach. Phenomenological hermeneutics, content analysis and Participatory Action Research (PAR) have been used in the analysis process. **Study I** aimed to describe primary healthcare nursing staff's experiences of discharge planning, along with their concerns about using video conferencing in discharge planning sessions. It was found that there is need for improvement in communication and understanding between nursing staff working in hospitals and in primary healthcare, and need for nursing staff to obtain more information about how IT solutions could support their work. The aim of **Study II** was to examine the implementation process of using video conferencing in discharge planning, according to a theoretical framework composed from theories about implementation processes. It was found that implementation frameworks can be useful, and that framing the implementation process supports the exposure of factors and highlights relationships and states of dependency between those factors which may affect implementation. **Study III** set out to describe managers' reflections about leading the implementation process of using video conferencing in the discharge planning session. The results indicate that managers experienced two leadership perspectives when they reflected on the implementation process. On one hand, they described a desired way of leading implementation, on the other hand they described an actual way of leading implementation. The aim of **Study IV** was to describe the reflections of professionals about what is needed in order to create what should become a new best practice using videoconferencing in the discharge planning sessions. The

results indicate that the professionals experienced lack of knowledge and understanding about each other's everyday work and that the absence of well-functioning common routines obstructed the process. The results also indicate that there is a lack of common arenas to enable discussions, negotiations and agreements about adopting new routines as the discharge planning process changes over time. This thesis contributes to the much-needed discussions about how to manage the many ongoing IT implementation processes in Swedish healthcare organizations, by highlighting challenges and difficulties that both healthcare professionals and managers have experienced during an implementation process. The results indicate that implementation frameworks can be useful when new IT solutions are introduced in healthcare, and that there is a need for dedicating time, space and support for involved professionals in designing their everyday work.

Key words: Applied Health Technology, Discharge planning, Healthcare, Implementation, IT solutions, Video conferencing, Qualitative research

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To my husband Stefan, thank you for always believing in me and giving me all your support over the years. You are simply the best and I love you from the bottom of my heart!

List of publications

1. Hofflander, M., Nilsson, L., Eriksén, S., Borg, C. Discharge planning: Narrated by nursing staff in primary healthcare and their concerns about using video conferencing in the planning session – An interview study. *Journal of Nursing Education and Practice* 2013, 3(1):88-98
2. Hofflander, M., Nilsson, L., Eriksén, S., Borg, C. Framing the Implementation Process of Video Conferencing in Discharge Planning – According to Staff Experience. Accepted for publication in *Informatics for health and social care*, expected year of publication 2015
3. Hofflander, M., Nilsson, L., Eriksén, S., Borg, C. (2015) Healthcare managers' experiences of leading the implementation of video conferencing in discharge planning sessions – An interview study (Submitted)
4. Hofflander, M., Borg, C., Eriksén, S. Professionals' perceptions of how to design a new best practice for using video conferencing in discharge planning (Submitted)

Related publications not included in this thesis:

1. Nilsson, L., Hofflander, M., Eriksén, S., Borg, C. (2009). 'Accessibility? It is after all two separate worlds!' Perception of accessibility in health care planning in the county council of Blekinge. Conference article, *Information System Research Seminar in Scandinavia 32*, August 2009, Molde, Norway.
2. Hofflander, M., Nilsson, L., Eriksén, S., Borg, C. (2009). Applied Health Technology with Focus on Care Planning at a Distance. Conference poster, *Scandinavian Conference on Health Informatics*, August 2009, Arendal, Norway.
3. Nilsson, L., Hofflander, M., Eriksén, S., Borg, C. (2010). From Twitter to data based patient record. Newly graduated nurses' experiences of IT in a traditional profession. Conference article, *Information Systems Research Seminar in Scandinavia 33*, August 2010, Aalborg/Bakker, Denmark.
4. Nilsson, L., Hofflander, M., Eriksén, S., Borg, C. (2010). PD 3.1 to the rescue. Challenges for participatory design in a health care context. Conference article and poster, *12th Participatory Design Conference*, November/December 2010, Sydney, Australia

5. Nilsson, L., Hofflander, M., Eriksén S., Borg, C. The importance of interaction in the implementation of information technology in healthcare: A symbolic interactionism study on the meaning of accessibility. *Informatics for health and social care* 2012 Dec; 37 (4):277-90.
6. Hofflander, M., Nilsson, L., Eriksén, S., Borg, C. (2014). Video Conference as a tool to enable participation in discharge planning – Experiences from implementers about the implementation process. Conference article. *Hawaii International Conference on System Sciences 47*, January 2014, Waikoloa Hawaii, USA.
7. Eriksén, S., Georgsson, M., Hofflander, M., Nilsson, L., Lundberg, J. (2014). Health in Hand – Putting mHealth design in context. Workshop paper, *Second International Workshop on Usability and Accessibility focused Requirements Engineering, UsaRe 2014*, August 2014, Karlskrona, Sweden.
8. Eriksén, S., Hofflander, M., Nilsson, L., Borg, C., Georgsson, M., Lundberg, J. (2014). Transforming healthcare delivery: ICT Design for self-care of type 2 diabetes. Workshop paper, *NordiChi 2014. Designing Self-care for Everyday Life Workshop*, November 2014, Helsinki, Finland.

Abbreviation List

AHT	Applied Health Technology
ANT	Actor Network Theory
AR	Action Research
EBM	Evidence Based Medicine
EHR	Electronic Health Record
ICT	Information and Communication Technology
ISO	International Standards Organisation
IT	Information Technology
PAR	Participatory Action Research
PD	Participatory Design
SST	Social Shaping of Technology

Glossary

Comprehensive discharge planning

Comprehensive discharge planning is an activity in Sweden that is governed by laws and regulations and should include participants from the hospital, primary healthcare and the municipality together with the patient and, if possible, the next of kin.

Context

The circumstances or frame of reference within which an event occurs; a setting

eHealth

Use of internet and other electronic media in providing access to health and lifestyle information or services.

Everyday work

The work practice as it has developed in a work place; usually perceived as governed by routines, regulations and the “way we do things here”

Implementation process

Planned and systematic introduction process that synthesizes knowledge in a complex context with the aim of achieving benefits of innovations.

Leadership

A process of social influence in which a person can enlist the aid and support of others in the accomplishment of a common task.

Nursing practice

The practice of nursing requires specialized knowledge, skill, and independent decision making. Nursing practice is regulated by laws to protect the public from the risk of harm if practiced by professionals who are unprepared or incompetent.

Organizational culture

An organizational culture is here seen as a dynamic, co-constructed system of common values and ideas, combined with a more or less shared belief in the way things work and should be done. The concept of organizational culture should not be seen as a replacement for values and norms, but instead as including the co-construction and articulation of those notions in action, i.e. in everyday work practice.

Participatory Action Research

Participatory Action Research (PAR) is a democratic process concerned with developing practical knowing, grounded in a participatory worldview. PAR seeks to bring together action and reflection, theory and practice, in participation with others.

Foreword

My interest in the subject discharge planning using videoconferencing started out many years ago when I was working as a manager at a healthcare centre. One of the most common issues discussed among the nursing staff at this workplace was the fact that everybody experienced “lack of time” and that calls at short notice for participation in discharge planning sessions at the hospital was a recurrent situation that became stressful.

In discussions with the staff, it appeared that patients were discharged from the hospital earlier and earlier in their recovery process. This tendency had been increasing over time and become even more marked in recent years. Earlier discharge and the related issue that patients are in need of more advanced care nowadays after discharge have made the discharge much more time-consuming and difficult to manage, and the short notice concerning discharge planning sessions makes the situation worse. .

With my background as a registered nurse, I am familiar with the nursing context and the striving towards being there to relieve pain, anxiety etc. for the patients as one of the nurses’ most important missions. When nurses experienced lack of time, not being able to manage participation in the discharge planning session, nor being able to catch up with the patient’s needs in a proper way after the discharge, they were not satisfied with their everyday work.

Working as a manager, a desire to find solutions to emerging problems in everyday work has always been a great pleasure to me, and doing this together with the nursing staff makes it even better. Given the described concerns about lack of time among the nursing staff, the use and implementation of video conferencing systems in discharge planning came up as a way of saving time without removing an important function. At the same time questions emerged, such as: What happens when we meet in a virtual way? Can we rely on the technology? Will the patients want to participate?

At this time the thoughts about what would happen when the video conferencing system was implemented in discharge planning turned into a question, soon thereafter evolving into a research area to examine. This thesis is written in the area of Applied Health Technology, which is an area where technology and healthcare overlap and merge in an interdisciplinary approach to exploring questions and challenges such as those related to the implementation process using a video conferencing system in discharge planning sessions in a region in southeast Sweden.

I hope you will find this thesis interesting!

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1. Introduction

Late in 2008, a persistent problem of lack of time among professionals, which prevented participation in many of the discharge planning sessions in hospitals, was highlighted once again at one of the healthcare centres in Blekinge County Council. There was a desire to enable discharge planning sessions to actually take place as intended by testing the already existing video conferencing system, a system which was at that time only used to enable long distance meetings between professionals working in the two hospitals in the County Council. This ambition to broaden the use of video conferencing in healthcare in the region was entirely in line with a study carried out in 2005 on behalf of the National Board of Health and Welfare (Socialstyrelsen), about experiences and the current state, describing the need of continued development of Information Technology (IT) in the healthcare sector, to achieve enhanced quality and accessibility (Norberg and Sjögren Holm, 2006). At about the same time, the Swedish Government published a national strategy about how IT should facilitate communication in Swedish healthcare as well as guarantee patient safety (Socialdepartementet, 2006). Perhaps this facilitation, which IT could provide according to the strategy (ibid.), seemed to be the answer to all prayers. Was it possible to enable required professionals to participate at a distance by using video conferencing in discharge planning sessions, together with transmission of correct information in the already existing information providing system? With this aim in mind, Blekinge County Council decided to initiate a project where a video conferencing system was tested as a tool for discharge planning at a distance. Later the decision was taken to implement the video conferencing system and make it part of everyday work in healthcare in the whole region.

Discharge planning is the basic term for comprehensive discharge planning, which is an activity in Sweden, governed by laws and regulations (SFS, 1982:763), (SOSFS, 2005:27), (SOSFS, 2008:14). Patients leaving the hospital may be in need of further support and care after discharge, and their needs may be of both medical and social character. To secure this further care, it is necessary to make a suitable plan for

attending to the patient's needs after discharge (SOSFS, 2005:27). The plan should be agreed upon by the different stakeholders together with the patient, and if possible the next of kin (Larsson, 2008). As the population is getting older and many patients are elderly with multiple diseases, a great number of older adults are discharged from the hospital with the remaining need to carry on with medical treatment and social care at home (Gurner and Wånell, 1998). This situation requires the different stakeholders to take their responsibility and participate in discharge planning and to be responsible for the provision of suitable care after discharge (Larsson, 2008). Thus, discharge planning requires a lot of time from the participating professionals and the traditional way of meeting for the discharge planning session, at the hospital, has been questioned (Norberg and Sjögren Holm, 2006). Could there be another way of dealing with the discharge planning, enabling required professionals to participate, without craving extensive travelling for some of the participants at short notice to and from the hospital for attending the discharge planning meetings? Could the transmission of information be performed differently from today, and perhaps be more correct and reliable? Is the hospital the right place for checking the patient's abilities to manage after discharge, or is it better to do this in the patient's home, where the patient's home environment and living conditions can be taken in to account? (ibid.)

The studies presented in this thesis explore healthcare professionals' and managers' experiences of implementing video conferencing in discharge planning in a region in southeast Sweden. The thesis was carried out within Applied Health Technology, which is an interdisciplinary research field at the interface between the fields of Health and Technology. The area includes studying the impact that technology has on health and vice versa, in both direct and indirect ways. My field of research is the implementation process of using video conferencing in discharge planning and what happened along the road, according to nursing staff's perceptions about discharge planning sessions; implementers' experiences when implementing video conferencing in discharge planning sessions; managers' perceptions about leading the process and what it takes to make a new IT solution function in everyday work.

1.1 Thesis outline

This thesis is a synthesized framework based on four studies, containing nine chapters. Chapter one (Introduction) gives an introduction to why this research was conducted. Chapter two (Background) presents the background and motivation for why this research is needed, together with the study context. This chapter also briefly presents the interdisciplinary research field of Applied Health Technology, within which the studies included in this thesis took place. Chapter three (Research aim) contains the overall aim of the study. Chapter four (Conceptual framework) presents the conceptual framework of the thesis, with the implementation process as the focal point. Chapter five (Methodology) presents the methodology together with the approach and study design, followed by a summary of the data collection methods and analysis in the four studies. Ethical considerations are also presented in this chapter. Chapter six (Findings) provides a summary of each of the four studies and also a synthesis of the findings. Chapter seven (Discussion) presents discussions of the findings as well as methodological considerations. This chapter also discusses the researcher's pre-understanding. Chapter eight (Conclusion and future work) presents the conclusions and suggestions for future studies. Chapter nine (Research contribution) presents the research contribution to research and practice.

2. Background

In this chapter, the background, study context and motivation for this research study are presented. The central concepts discharge planning, implementation and interdisciplinary research, here more specifically in regard to the area of Applied Health Technology, are introduced.

2.1 Study Context

In 2009, a project on implementation of a video conferencing system in healthcare was initiated and run jointly by the County Council and the municipalities in a region in southeast Sweden. This local project was part of a larger IT project in the region with a focus on developing and testing new solutions to improve healthcare. The local project started out with the focus on testing video conferencing in discharge planning, and was part of *"System Gudruns Fullskalelabb i Blekinge för IT i vård och omsorg, [Nurse Gudrun's Full-scale Lab in Blekinge for IT in nursing and care]"* which was the county's response to the national IT strategy (Socialdepartementet, 2006), which called for achieving enhanced accessibility and quality in healthcare and homecare with the support of IT. The project was partly funded by the European Union (EU) and ended in December 2012. In January 2013, the municipalities in the region took over the responsibility for the homecare from the County Council. This change of ownership of homecare in the region affected whom should be responsible for leading the discharge planning sessions.

The context for the studies in this thesis is thus a county in southeast Sweden, which is an area with currently approximately 153, 000 inhabitants. The county is divided into five municipalities and one County Council, consisting of two hospitals and about 25 healthcare centres. The medical care is provided by the County Council and the social care is provided by the municipalities. However, the medical care conducted in homecare is provided by the municipalities since January 2013.

2.2 Discharge planning

Discharge planning is an activity in Sweden that is governed by laws and regulations (SFS, 1982:763, SOSFS, 2005:27, SOSFS, 2008:14). The discharge planning session should include participants from the hospital, the primary healthcare and the municipality, together with the patient and, if possible, the next of kin (SOSFS, 2005:27, SFS, 1982:763), and be used as a common arena for discussions and sharing information in order to plan the further care for the patient (Larsson, 2008). This is a way to reach agreement on which unit is responsible for each initiative in order to make further care safe and suitable for the patient after discharge (SOSFS, 2008:14). The discharge planning should also result in a written plan approved by the patient and the other involved stakeholders, in order to confirm the agreements and make them easier to follow up on (SOSFS, 2008:14, Larsson, 2008).

However, despite regulations that surround the discharge planning process, results from monitoring studies, on behalf of the Swedish National Board of Health and Welfare (Norberg and Sjögren Holm, 2006, Gurner and Wånell, 1998) show that thoroughly carried out discharge planning sessions are complicated to run due to differences in perception and shortcomings in the flow of patient information between the professionals involved. These findings are in line with findings from a case study in the UK (Atwal, 2002). In fact, a considerable amount of research and studies concerning problems related to discharge planning and the need to improve overall discharge planning indicate that discharge planning is a cause for concern in many countries, and has been so for more than 20 years (Lundh and Williams, 1997). One of the problems described is the perception that it is unclear at what point the nursing staff in the primary healthcare assume full responsibility for the patient's further care after discharge (Norberg and Sjögren Holm, 2006). This is related to uncertainty and inequality between the responsibilities of the different parties in the discharge planning process (Efraimsson, 2005, Guadagnoli and Ward, 1998, Robinson and Street, 2004). This leads to frustration and bad feelings about the task at hand among the participating professionals (Hegney et al., 2002, Nazarko, 1998). Another often reported problem in poorly functioning discharge

planning is time constraints (Lundh and Williams, 1997). In fact, many of the discharge planning sessions that ought to be carried out do not take place at all; instead, phone calls are made between some of the different stakeholders, which can result in that stakeholders who should be involved in the discharge planning process are not consulted (Larsson, 2008).

On a more positive note, several studies have examined factors required for discharge planning to succeed: a guarantee from nursing staff that they will participate, participation of the patient and sound appraisal of the patient's need for further care after leaving the hospital (SOSFS, 2005:27, Norberg and Sjögren Holm, 2006, Efraimsson, 2005, LeClerc et al., 2002). The ability to ensure the transfer of necessary and relevant information between different stakeholders in an IT-based system is also seen as a success factor (Robinson and Street, 2004). Furthermore, relevant literature describes that a structured discharge plan tailored to the individual will lead to an increase in patient satisfaction as well as participation by the patient (Shepperd et al., 2010). On the other hand, in two Swedish interview studies, patients describe discharge planning as an occasion without the opportunity to discuss in private. They also recount experiences of not being listened to, not being able to understand what is going on, not being aware of how decisions are made and not knowing what is going to happen after their discharge from the hospital (Norberg and Sjögren Holm, 2006, Littorin, 2001). In fact, it seems that the patient, who is the main figure in the discharge planning process, is not really being allowed to participate in the planning session. To improve patient participation, it is suggested that methods should be implemented for setting goals and identifying patients' needs in order to facilitate and increase patient participation in discharge planning (Almborg et al., 2009). Studies report that discharge planning, with interventions to address interdisciplinary communication and combined with post-discharge support, significantly improve health outcomes (Phillips et al., 2004, Petersson, 2008). However, some of the barriers to effective discharge planning are lack of standardised, hospital-wide discharge planning and a policy-driven approach. In line with the problems listed above, Wong et al. (2011) report lack of

communication and co-ordination among different stakeholders and patients as a potential barrier to success in discharge planning.

A Swedish study describes the need for further innovative work, especially concerning the implementation of IT solutions to support and enhance discharge planning, where IT solutions are seen as an untapped potential for improvement (Petersson, 2008). With this in mind, the project in southeast Sweden piloting the use of video conferencing in discharge planning sessions was initiated, with the purpose of facilitating the sessions by enabling the involved professionals who ought to participate to actually participate, as the video conferencing system gave the opportunity to participate in a virtual way instead of having to travel by car to one of the two hospital in the region in order to participate in a traditional face-to-face meeting.

2.3 Implementation

Implementation is a widely used word, and there is no all-inclusive theory or all-inclusive framework that includes and explains every aspect of implementation (Nilsen, 2010). For instance, implementation science as a research discipline has developed in the wake of evidence based medicine (EBM) and is founded on the need of explaining and influencing the factors of importance to reach successful implementation in healthcare (Trinder, 2006). As there are many different ways of studying implementation, it is the plan or the project of which the research forms a part that determines what kind of focus the research takes (Hartman, 2004). This makes the context of the project particularly significant in implementation science; it is difficult to provide useful general advice on how implementation ought to take place, when the specific context carries such significance (Eccles et al., 2009). On the other hand, perhaps taking the specificity of the context into account in planning for change could be understood as the quality mark of successful implementation of technology in healthcare? And in that case, how could such situated knowing-in-action be accounted for theoretically, as a contribution to implementation science as well as to Applied Health Technology?

In this thesis, and in the included articles, the focus is on implementing video conferencing in discharge planning sessions. This includes planned processes and systematic introductions about the video conferencing system. It includes, in a broader framework, the strategic aim of the project, i.e. capturing benefits of the innovation for individuals as well as strengthening the healthcare organization and improving healthcare and public health with the support of effective IT systems (Eccles et al., 2009). It is argued, as a working hypothesis for the study, that the implementation process should be seen as a five-step process with the aim of making the video conferencing system a working tool in everyday work (Rogers, 2003). The first step in the five-step process is to introduce the users to the innovation, with the aim of providing them with relevant and useful information from which they can construct and enhance their own knowledge about the video conferencing system and how it could fit in to their everyday work in future. In the next step, from a management perspective, the future users need to be convinced about the value of the video conferencing system in discharge planning. However, this can only be achieved if the first step has provided a solid base for the users to develop an initial own understanding of the potential use of the video conferencing system, and if the second step actually provides space for discussing changing work practices to develop a new practice involving the use of video conferencing in discharge planning sessions. Thereafter, in step three, the users decide to try using the video conferencing system and, if this proves satisfactory, step four involves implementing the new system in everyday work. The final step is about the users deciding whether or not to fully use the new working tool, and could include further design-in-use of the tool and the evolving work practices around it (ibid.).

In an attempt to elucidate and describe the various factors that affect the implementation process in the healthcare sector, a framework was developed by Nilsen et al. (2010) [Figure 1]. The framework is inspired by classifications of explanatory factors presented by Rogers (2003), Greenhalgh et al. (2005), Grol & Wensing (2005) and Nutley et al. (2007). The framework describes six components with underlying descriptions that are intended to be ranked and estimated separately

from each other. The framework is a compilation of several models and it should be seen as a way to sample different factors that influence the implementation process. It is an attempt to systematize possible affecting factors in relation to the implementation process, and thus improve the possibility to analyse and understand the implementation process and the outcome of the implementation. There is no ranking between the described factors or any grading of which factor ought to be seen as the most significant. The framework also indicates that specific success factors are difficult to identify due to the fact that some aspects seem to be possible to influence although they can be surrounded by structures that limit aspects that are responsive. The framework is intended to be helpful as a platform, to reflect upon and reason about implementation processes, in this case the implementation of using video conferencing in discharge planning sessions (Nilsen, 2010).

Component	Description
Implementation object	Attributes of the implementation object with significance for the outcome of the implementation process
Implementation activities	Strategies for influencing potential users to change their practices in accordance with guidelines and best knowledge. The efforts of users and other actors to implement the improved practice
Implementation actors	Actors of importance to the outcome of the implementation process, e.g. patients and decision-makers on different levels
Users	Attributes of the potential and actual users can be understood. Could be individual users and/or groups of users
Inner context	Circumstances and conditions, which affect the outcome of the implementation process, in the operation or organization where the implementation takes place
Outer context	Outer context refers to conditions in society, which affect the implementation process. E. g. Laws, regulations, social norms and demographical circumstances

Figure 1. Framework by Nilsen et al. Reprinted with permission (including approval of the English translation by authors of this paper).

The decision to implement video conferencing in discharge planning sessions was reached by managers working on an overall-level. Studies have shown that this could potentially cause certain difficulties in the implementation of new working

routines due to some extent to the overall centralization of guidelines and strategies instead of allowing the guidelines to be developed from within the organization (Davies and Nutley, 2000). As described by (Grimshaw and Russell, 1993), there could be difficulties for professionals to actually accept and apply the new working routines if the routines are all prepared centrally. In this case, the development of guidelines and their use could be seen as the result of a top-down approach to implementation (Davies and Nutley, 2000). Systematization of knowledge in connection with implementation of new working routines in the healthcare sector has, it appears, become growing research field, where previous research in implementation science attempts to define certain overall factors for success (Grimshaw and Eccles, 2004). There has subsequently been an openness for exploring the significance of these overall factors, especially concerning the various and shifting complex contexts in which implementation occurs, with a variety of different actors and stakeholders involved (Grimshaw and Eccles, 2004, Damschroder et al., 2009).

Organizations that encourage knowledge sharing as well as reflection and observation are described to be more successful at innovations and implementation than those who do not do so (Forsner et al., 2010). At the same time, studies of organizational change projects on a more general level show that implementation and changing to new working routines fails in an estimated 60% of the organizations (Burnes, 2004). This seems to indicate the need for gaining a better understanding of how involved stakeholders and actors experience implementation and change projects from within the organizations in which they take place. Thus, in the studies presented in this thesis, an aim has been to gain insight into the involved healthcare professionals' experiences of the implementation process of using video conferencing in discharge planning, and there has also been an aim to explore and map factors that may influence the implementation process (Godin et al., 2008), where barriers to successful implementation are described as technical and related to issues of culture and lack of trust in that the desired outcomes will be achieved (Peddle, 2007).

2.4 Interdisciplinary research and Applied Health Technology

This thesis was carried out in Applied Health Technology, which is a relatively new research area at Blekinge Institute of Technology and is counted as an interdisciplinary research area. The area is defined as the interface and partial overlap between health and technology and provides space for research that deliberately integrates health and technology research [Figure 2]. In Applied Health Technology, many disciplines share the space of the evolving research area, each discipline contributing with specialized approaches and methods to exploring complex interdisciplinary research questions by participating in joint research projects and shared discussions involving various stakeholders and actors from healthcare organizations, service providers and patient groups, with a focus on needs finding, design, usability and user experiences of socio-technical systems in healthcare etc.

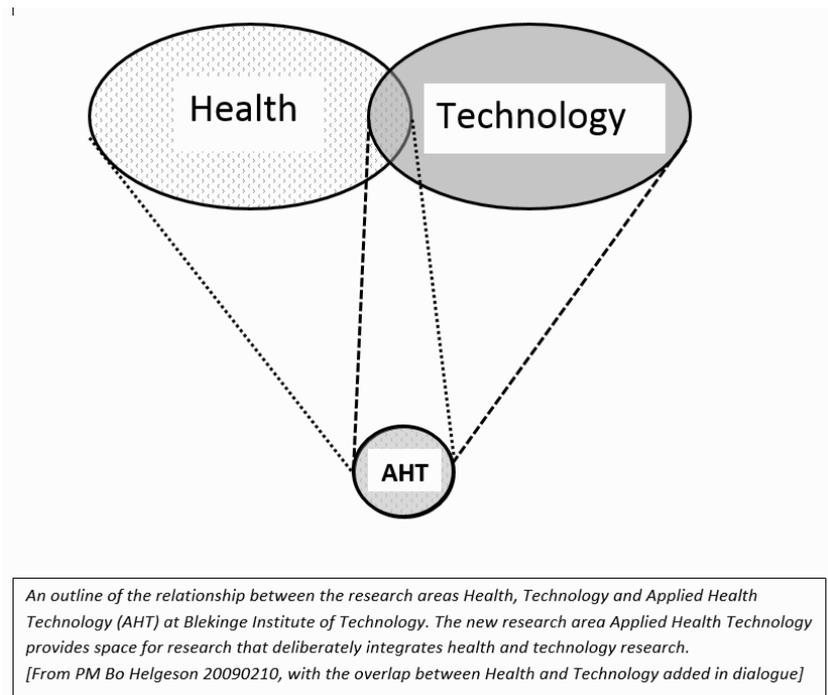


Figure 2. An outline of the relationship between the research areas Health, Technology and Applied Health Technology

This thesis takes as its starting point examining the implementation process of using video conferencing in discharge planning sessions, according to participating professionals and their experiences of implementing IT support in an already well-known everyday work process and work practice. The two research areas, health and technology in this combination, provide a new evolving research area through the combining of different research traditions and perspectives, creating a complex inquiry system - or shared knowledge platform from which further research can take its starting point - that ought to be seen as a whole in its own right. Interdisciplinary research is described by Aboelela et al. (2007) as allowing different research areas to work together, hereby reaching new understanding and explanations of complex systems in everyday practice, which in turn supports finding better overall solutions to challenges, problems and practical issues as well as developing new and more insightful research questions. Within healthcare it is especially useful to combine different research areas through an interdisciplinary approach, in order to gain better knowledge and understanding in an area that is already complex in itself (Öberg, 2008). Thus, nowadays healthcare is often studied in interdisciplinary combination with other research areas than the various health sciences, such as various fields of technology (ibid.), which results in an interdisciplinary research frame for the understanding of those different areas if they are studied with an interdisciplinary approach as in Applied Health Technology. In line with Öberg (2008), Creswell (2009) states that interdisciplinary research is of considerable current interest due to that it leads to the creation of groups and research communities, consisting of people with different methodological interests and ways of working, which can contribute to shedding new light on what is being studied. Thus it appears that the research topic of this study, that is, implementation of IT in healthcare, and, more specifically, studying the implementation process of using video conferencing in discharge planning, is suitable to study from within an interdisciplinary area, with the aim of creating new and enhanced understanding and knowledge about this topic. According to Aboelela et al. (2007), an interdisciplinary approach contributes to a broadening of the understanding of complex questions in research. Atkinson &

Crowe (2006) argue that the only way of achieving sustainability is through enhancing our knowledge and understanding about the environment, stating that complex systems have unpredictable outcomes, which in turn show the need of interdisciplinary research to open up new ways to meet challenges and conduct research (ibid.). The combination of different research fields, as in this case health and technology, can provide the openness that research in fact strives towards, since research questions in interdisciplinary research are not limited to formulations of research questions and choices of methods and how to apply them from only one specific research field (Choi and Pak, 2006).

Given my background in nursing, and having worked for many years as a healthcare manager during which time I developed an interest in technology and working with it as a facilitator for efficient provision of healthcare, I became interested in the research area Applied Health Technology as a suitable base for studying the implementation process of using video conferencing in discharge planning. My interpretation of the interdisciplinary research area of Applied Health Technology, as it is illustrated in figure 2, is that it provides space for studying the interface and interaction between a complex combination of concepts and areas of knowledge which are of central relevance for both the theoretical understanding of and the practice of healthcare; “social construction of technology”, organizational culture, nursing context, leadership and the design of everyday work [Figure 3]. This is where I position my research, with the conviction that only using well-known methods, approaches and knowledge ecologies (here: concepts, and clusters of concepts, being explored, studied, analysed and further developed through scientific endeavour) from within a single well-established research area and tradition, could hamper new understandings and enhanced knowledge of relevance for both theory and practice. (Creswell, 2009).

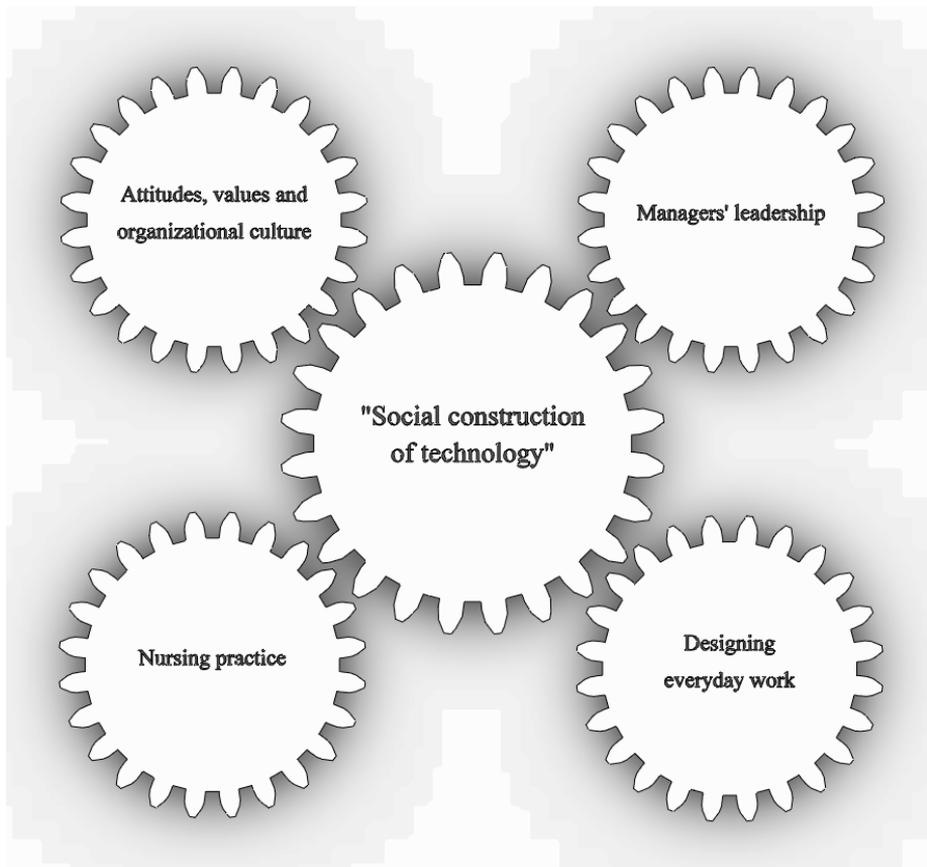


Figure 3. The interpretation in this thesis of central and interrelated concepts, or evolving knowledge objects, within the interdisciplinary research area of Applied Health Technology, presented as a way of explaining how I position my research within this area.

2.5 Rationale of this thesis

The studies in this thesis are all linked to the implementation process of using video conferencing in discharge planning sessions. **Study I** was conducted before the testing of video conferencing started as a sub-project part of the main project “*Syster Gudruns Fullskalelabb i Blekinge för IT i vård och omsorg*”. Before the sub-project concerning the testing of video conferencing in discharge planning sessions was completed and evaluated, there was a decision taken to implement the video conferencing system overall in the healthcare organization. This decision to actually implement the new working tool before it had been evaluated was surrounded by

questions in the organization but yet the decision was taken and acted upon. **Study II** and **III** were conducted during the latter part of this implementation process. **Study IV** was conducted both during the latter part of the implementation process, as well as when the implementation process was finished and the use of video conferencing was regarded as fully implemented but not yet fully in use. Thus, the main theme or “red line” to follow in this thesis and the four included studies is linked to the implementation process of using video conferencing in the discharge planning sessions and is described in the figure below, here expressed through the research questions that were articulated, addressed and explored during the process [Figure 4].

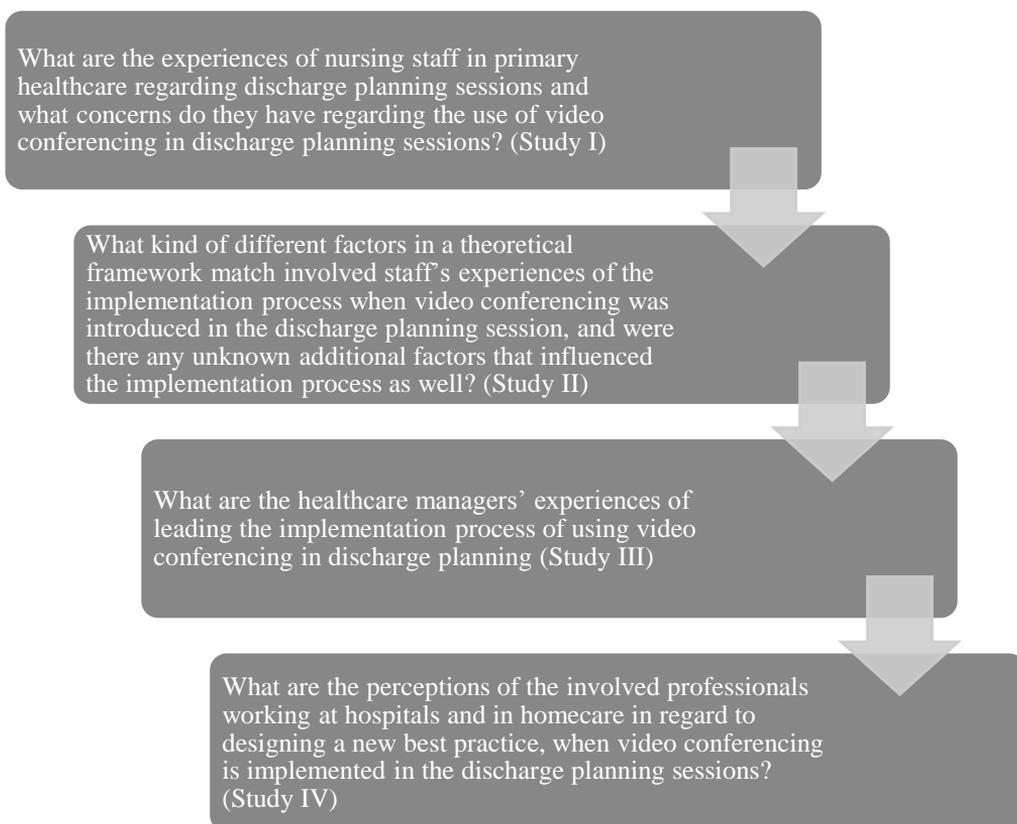


Figure 4. Research questions addressed in the four studies included in this thesis.

2.6 Research issue

A considerable amount of research has been done concerning implementation processes when different policies, new medical treatments etc. have been implemented in Swedish healthcare (Garpenby and Johansson, 2007, Nilsen, 2010) . Also research concerning the implementation and use of IT solutions in Swedish healthcare has constituted research areas during the years (Carlfjord et al., 2010, Scandurra, 2013). Yet there have only been a few earlier studies concerning the implementation and use of video conferencing in discharge planning sessions, which implies the need for further research (Helgesson et al., 2005, Grundén, 2001). In this thesis, the aim is to focus on the implementation process of using video conferencing in discharge planning, using a broader perspective in order to fill a perceived knowledge gap by linking together different perspectives on issues involving leadership, attitudes, values and organizational culture with the social construction of technology - which, when it is reflective and deliberate, can be seen as design in use - and nursing practice in everyday work. By taking an interdisciplinary approach with Applied Health Technology as a base, a number of different theoretical frameworks can be used without letting one of these become more important than the others.

3. Research aim

The overall aim of this thesis was to study the implementation process during and after a development project concerning the use of video conferencing in discharge planning sessions, initiated by the County Council in a region in southeast Sweden. The study is based on a research approach which has been developed within a new, interdisciplinary research area, Applied Health Technology. The main focus of the research has been on how the new IT solution has affected the everyday work, and in what ways the management supported the staff during the implementation process.

The aims of the individual studies in the thesis were as follows:

- The aim of **study I** was to highlight the experience of nursing staff in primary healthcare regarding discharge planning sessions and their concerns about using video conferencing in discharge planning sessions.
- The aim of **study II** was to gain knowledge and understanding of how the different factors in a theoretical framework matched the involved staff's experiences of the implementation process when video conferencing was introduced in the discharge planning session, and if there were any unknown additional factors – beyond what could be anticipated according to the applied theoretical framework –that influenced the implementation process as well.
- The aim of **study III** was to investigate healthcare managers' experiences of leading the implementation process of using video conferencing in discharge planning sessions.
- The aim of **study IV** was to examine the perceptions of the involved professionals working at hospitals and in homecare in regard to designing a new best practice, when video conferencing is implemented in the discharge planning sessions.

4. Conceptual framework

In this chapter a framework is presented in order to give an overview of the theories used in the four studies and how they were combined to provide a conceptual framework.

4.1 Nursing practice and everyday work

This thesis takes its starting point in nursing and has been prepared and carried out very much in a nursing context. Nursing as a research area has been developed over the years to include a number of theories and models of nursing practice (Parse, 1987). In recent years, the perception of putting the patient in a more central position, through person-centered nursing, where the nursing staff establish relationships with the patient through a more modern way of communicating, has been highlighted as important (McCormack, 2003). Also, a patient-centered model of care for hospital discharge has been developed, highlighting that patients have a desire for information and wish to be involved in their own further care (Anthony and Hudson-Barr, 2004). However, there is a perceived gap between patient expectations and the actual result after discharge, concerning resources to help the patients to be better prepared for discharge (Cleary et al., 2003). Further, working in a patient-centered way in discharge planning is not always simple and straightforward, due to the fact that hospital-based nurses who have not practiced in homecare may find it difficult to anticipate patients' needs during the transition from hospital to home (Billings and Kowalski, 2008). The fact that social workers and hospital nurses usually focus on the immediate discharge needs rather than on long-term goals and plans for the patient can be seen as a factor that hinders patients' discharge from having a seriously patient-centered approach (Walker et al., 2007). Additionally, hospital discharge plans often "fall short of the mark" because they fail to reflect on the complexity of the patient's further needs after discharge, due to focusing primarily on basic needs rather than on the reality of the patient's recovery (LeClerc et al., 2002).

In this thesis, with the aim of understanding the complexity of discharge planning, where many professionals are involved in different ways, nursing practice in everyday work can be seen as one of the central issues that need to be reflected on. Ellegård & Wihlborg (2001) argue that experiences in everyday practice ought to be viewed from an interdisciplinary perspective, as the everyday practice contains processes that affect each other in an ongoing development. "Everyday life" is a concept with a long history (Felski, 1999). Silverstone & David (1992), describe it as the use of a process-oriented and dynamic way of handling circumstances in daily life, a holistic way of understanding everyday practice, making use of living concepts as they emerge in practice and not using traditional categorizations concerning issues of existence and being in the world. For instance, nursing staff have described difficulties in understanding and being able to affect the discharge planning process in everyday work, as there is a constant lack of time, which makes the discharge planning stressful, hurried and incomplete or even leads to managing by phone calls between a few of the involved stakeholders instead of the required discharge planning meetings with all involved parties participating (Larsson, 2008). When studying "everyday life" as in everyday work, in the context of implementing video conferencing in discharge planning, two key concepts can be used as being empirically anchored, *visibility* and *transboundary*, to emphasize the importance of everyday life as being affected by many different factors (Ellegård and Wihlborg, 2001). This type of concepts could be used to discuss and support emergent practices (Kuutti and Bannon, 2014) of using new technological solutions in discharge planning, but also to support and enhance a more reflective and design-oriented use of already existing, but perhaps not well-understood, technological systems, as we are living in a society that is changing and technological systems need to be adaptable to change during their entire lifecycle (Ellegård, 2006).

4.2 Social construction of technology

For many years, there has been a need for moving towards a greater adoption of information and communication technologies in Swedish healthcare as a means of achieving more effective communication (Mukotekwa and Carson, 2007).

Implementation of technology as a part of improving the information and communication processes in healthcare has increased during latter years, which also has created a greater need for understanding how social factors relate to technology (Mackenzie and Wajcman, 1985). The ability to transmit information between stakeholders by using IT-based systems before and after discharge planning sessions has been described as a success factor by its ways of providing information in a safe and secure way (Robinson and Street, 2004). According to (Mackenzie and Wajcman, 1985) the shaping of these kinds of systems, in what is called “Social Shaping of Technology” (SST), ought to be understood by studying technology together with involved processes of development and innovation. The SST approach comprises political, social and cultural factors, in contrast to more traditional approaches of studying implementation of technology, which tend to focus more narrowly on the consequences of technological changes (ibid.). This is further developed by Bijker (1995), who states that technological artefacts are created socially in the failure and success of different relevant and social groups, which in turn could have different and sometimes inconsistent objectives and purposes. SST is not a well-defined theory of its own, but rather consists of a number of different perspectives, approaches and methods which share an understanding of technology as socio-technically constructed and thus share an interest in studying the socio-technical construction of technology. SST is described as a model of the technological society that arose from the overall increasing use of technology (Mackenzie and Wajcman, 1985). In this thesis, SST has been informative and inspirational for the chosen way of studying and describing the use of video conferencing in discharge planning sessions as an innovation process, where the implementers and the technology itself mutually shape the development of a new communication system (ibid.) Beyond this, SST, should be seen as an approach providing different options, both in designing the video conferencing system and in developing the use of the communication system and program, where involved staff could participate in the developing process (Williams and Edge, 1996). As an alternative, and partly as a further development of SST, Actor network theory (ANT) is an approach which focuses on central actors in the creating of networks

with common interests in developing the technology (Latour, 1987, Latour, 1993, Callon, 1991), where the members of these networks strive towards a unified whole. In the case of the video conferencing system being implemented in the discharge planning process, this approach supports the conviction that both the video conferencing system itself and the human and social aspects of the discharge planning process, and everything in between these two focal points, are of importance for how the implementation process develops and works out. The most central part of this theory is the conceptualization of the relationship between material and social aspects, and the assumption that many relations are both material and semiotic. (Callon, 1986, Latour, 1987, Latour, 1993, Law, 1992).

4.3 Attitudes, values and organizational culture

The complexity of the discharge planning process, and the need for addressing overlapping cultural, organizational and technological issues when implementing a video conferencing system in this context, highlights the basic need for support of cooperation and shared understanding of goals between the many healthcare professions involved (Mukotekwa and Carson, 2007). Studies show the need to see the discharge planning situation as a complex system including interconnected areas. In order to achieve a change when the issue is complex, there is a need to be aware of and to see the bigger picture of the system (Balka, 2003, Petersson et al., 2009), where one element of this bigger picture is constituted by the way nursing staff affect each other in discharge planning sessions and situations, by their attitudes, values and organizational culture.

Attitudes could be described as the individual's preconceived positive or negative ways of reacting to persons, groups, experiences or facts, and is seen in literature as one of the most central research themes in social psychology (Kaufmann and Kaufmann, 2005). In this thesis and in the field studies which are reported from in the included publications, attitudes have surfaced in the form of attitudes held by nursing staff towards other professionals that hold important roles in the discharge planning process, as colleagues, managers and partner, but also towards the

everyday work itself and towards issues arising in connection with discharge planning. To understand the ways in which attitudes can affect nursing staff's behaviour in the workplace when implementing video conferencing in discharge planning, the "three component model" by Kaufmann & Kaufmann (2005) could be used as an explanatory model, to understand the complexity of the situated activity and the possible connexion between attitudes and behaviour in this context. This model illustrates how the emotional, *evaluative component* (here: what we feel about discharge planning), together with the *cognitive component* (here: what we believe is a good way of discharge planning) and the *action component* (here: how we perform discharge planning), affect our attitudes and behaviours (Kaufmann and Kaufmann, 2005).

Unlike attitudes, **values** could be described as the foundation of what people perceive as being right or wrong. The values held by nursing staff who are implementing video conferencing in discharge planning sessions affect their thoughts, attitudes and behaviours, both in interactions between one nurse and another and between managers and nursing staff. Values could be divided into three levels – *universal, collective* and *individual*, where individual values are seen as the most central, as these are fundamental no matter what context the individual is situated in when choosing a course of action (Hofstede and Bond, 1984). According to Sandberg & Targama (1998), humans' individual values are nowadays characterized by a desire for freedom and independence. This, together with an increasing technological development, has affected both universal values and the collective values inside organizations.

Values also affect the job satisfaction in a workplace and could be seen as one of the cornerstones in **organizational culture**. According to Davies (1984), by definition an organizational culture is a system constructed of common values and ideas, together with a shared belief in or understanding of the way things work and should be done. The concept of culture should not be seen as a replacement of values and norms, but instead as including those notions. According to Ekvall (1996), organizational culture and organizational climate affect problem-definitions and

problem-solutions, communication and cooperation when introducing new ideas and new ways of working in an organization. The organizational climate for creativity and innovation can be measured along three main dimensions; *resources* (idea time; idea support; challenge and personal involvement), *motivation* (trust and openness; playfulness and humor; absence of interpersonal conflicts) and *exploration* (risk-taking; debates about the issues; freedom) (Ekvall, 1996). The implementation process of using video conferencing in discharge planning could in a similar way be seen as being affected by the organizational climate, which raises questions such as; what available resources, what level of motivation, and what organizational space for exploration is provided when it comes to interactions between the nursing staff and other professionals in connection with the introduction of new technology and changing work practices? The physical environment, organizational objectives and strategies and visions about future discharge planning are all factors that affect the implementation process

The main thread of the concept of organizational culture is the perception of fundamental common values (Kaufmann and Kaufmann, 2005), something that is also stated by Martin (1992), describing four core values as especially important: sensitivity towards customers and colleagues, freedom to initiate new ideas, willingness to tolerate risk, and transparency of communication. In the case which is in focus in this thesis, the County Council and the municipalities in the region are involved in a shared project with the aim of implementing video conferencing in the discharge planning process. It is clear in this case that there are a multitude of different organizational cultures involved, both within and between the different involved healthcare organizations. According to Schein (1990), an organizational culture is established by its leaders, by their dynamic personalities and strong values and clear visions. If these values are accepted, the employees will identify themselves with the leader and the leader becomes a role model (Schein, 1990, Deal and Kennedy, 2000). With a multitude of different organizations and organizational units involved in the discharge planning process, changing the common everyday practice in discharge planning by implementing a video conferencing system

requires a transboundary unified understanding and shared values between managers and nursing staff in multiple organisations and organisational cultures. Perhaps it would be easier in this case to focus on improving the organisational climate for creativity and innovation among the multiple stakeholders, by providing enhanced resources, raising the level of motivation and creating transboundary space for exploration (Ekvall, 1996), rather than focusing on changing and aligning, in every detail and instance, the various involved organizational cultures *per se*?

4.4 Managers' leadership

According to Fayol (Pugh, 1916/2007), the function of a manager is to forecast and plan, to organise, to command, to co-ordinate and to control in order to reach goals. This implies that management practice (and ostensibly, theory) could contribute to more efficiently and effectively run organisations (McLean, 2011). The fact that leadership matters in implementation has been stated in a number of studies (O'Reilly et al., 2010, Salmela et al., 2012), and a model for nurse leaders of leading change, consisting of three dimensions: leading relationships; leading processes and leading a culture, has been developed (Salmela et al., 2012). In the implementation process of using video conferencing in discharge planning, the relationship between the different activities involved in planned organizational change implementation and managers' leadership competencies has to be taken into account (Battilana et al., 2010), as well as the fact that the leadership competencies might differentially influence the key activities involved in the implementation process. Moreover, the role of leadership in change is a complex multi-dimensional task composed of different activities, such as communicating; mobilizing and evaluating (Battilana et al., 2010). According to Denti & Hemlin (2012) the role of the leaders in managing innovations in organizations is to provide a structure for the innovation process and, in the early stages of the process, to take an explorative approach to problem construction and ideation in which knowledge and ideas can be broadly integrated.

In larger organizations – such as the ones involved in the innovation process which is presented in this thesis - with different hierarchical levels, the organization can be

described as including three managerial levels; micro, meso and macro (Yurdusev, 1993). The micro level is the level where first-line managers have the responsibility for the execution or operationalization of decisions that have been taken, such as, in the case presented in this thesis, the implementation and use of video conferencing in discharge planning. The meso level is the intermediate level, where intermediate level managers have the responsibility for leading the communication about and preparation for the execution or operationalizing of the overall decisions which have been taken, such as, in the case presented in this thesis, the decision to implement and use video conferencing in discharge planning in the entire region. The leading and communication is done in collaboration with the first-line managers. . The managers working at the overall level, the macro level, have the responsibility for leading long-term work and they are situated far from the everyday work on the micro level of the organization. In larger organizations with multiple managerial levels, the managerial role of providing a structure for the innovation process (Dopfer et al., 2004) takes on another dimension, as it needs to be translated and communicated in appropriate action on the macro level, the meso level and the micro level, and what is done on each level in the way of providing a structure for the innovation process in turn needs to be aligned between the different levels. The more a work place perceives that its leader supports the new strategy, the stronger the likelihood that the new strategy will be implemented in that work place (O'Reilly et al., 2010). In the implementation process which has been studied and is presented in this thesis, this would imply that the more nursing staff perceive that leaders, aggregated across hierarchical levels, support the new strategy about implementing and using video conferencing in discharge planning, the stronger the likelihood that the new strategy will be implemented (ibid.) This in turn would imply that co-workers in the involved organizations need to understand why routines and practices in discharge planning need to change, in order to adopt the new strategy (Kotter, 1995), and during the implementation, leaders have to mobilize nursing staff to accept and adopt proposed change initiatives in discharge planning into their daily routines. According to Denti & Hemlin (2012), leaders orchestrate dual roles in innovation processes, as facilitators who moderate the process and as leaders who

mediate the process. Leaders who are more transaction-oriented are more successful in promoting innovation, but the degree of organizational support and openness to change moderates how influential the leader is in supporting change (Denti and Hemlin, 2012, Hemlin, 2006). According to Aarons and Sommerfeld (2012) and O'Reilly et al. (2010), leadership effectiveness across organizational levels as well as hierarchical levels influences implementation of new systems. Thus, a number of studies on innovation management imply that leadership alignment in mediation and moderation of change and innovation across different hierarchical levels (micro, meso and macro) as well as organizational support on all levels for leaders who facilitate and mediate innovation, are important factors for successfully managing innovation and change in large organizations.

According to Battilana et al. (2010), three key activities are described as being involved in the successful leadership of planned organizational change implementation; communicating, mobilizing and evaluating. Communicating refers to the activities that leaders do to convince and to share their vision of the planned change with their co-workers. Mobilizing refers to the actions that leaders do to prepare co-workers for the new working routines in order to gain their active support and acceptance of the planned change. Evaluating refers to the measuring of effects that leaders do to monitor and assess the impact of implementation efforts and organizational changes (Battilana et al., 2010). These three key activities are based on Lewin's three-phase model of change: the phase of unfreezing, where existing values and frames need to be phased out, the change phase, and the freezing phase, where new frames are accepted and trusted (Lewin, 1947). Considering that leaders manage the strategic innovation goals and activities of their organizations in a top-down process (Denti and Hemlin, 2012), it is of importance to examine the process in which leaders affect change, by examining the power of the context, with its contingency factors (Shalley and Gilson, 2004, Hunt and Conger, 1999), and "mechanisms of action" of the process through which leaders in these described organizations affect organizational performance (Phills Jr, 2005).

In fact, the managers' ability to communicate the oncoming planned change is of great importance (Holmberg and Tyrstrup, 2010, Mintzberg, 1994), and is described by Sandberg & Targama (1998) as some kind of paradigm shift where the most prioritized task of managers is to actually communicate the oncoming change, instead of leading by managing details. Moreover, Bolman & Deal (2005) state the need for managers to communicate the vision of an oncoming planned change in a convincing and sustainable way, in order to manage the oncoming change. This is also stated by Sandberg & Targama (1998) and Ahrenfeldt (2001), who describe comprehension by communication, instead of pure one-way information about the oncoming planned change, as a key factor for successful adoption of change in organizations. According to Callan (1993), managers who are accessible and open-minded when communicating oncoming changes support employees in accepting change and being able to cope with the initial stress of having to unlearn old ways and learn and develop new ways of doing things. Finally there is a symbolic perspective to take into consideration; the role of managers to encourage, enthuse and inspire employees in sharing the belief that a new way of working is both necessary and highly important and that their contribution to making the change happen is of utmost importance. (Bolman and Deal, 2005). That this perspective is called symbolic does not mean that it has no impact on actual change management. It may in fact be one of the most important success factors, if adhered to in all three phases of change management; communication, motivation and evaluation.

4.5 Design in use

Thus, a number of research studies in the overlapping areas of leadership and change and innovation management indicate that communication skills and constructive and critical thinking are important skills and competencies for managers to possess and make use of when a new way of working is being introduced in a work place. According to Holmes et al. (2008), it is not a viable strategy to meet and manage changes in nursing practice armed only with evidence-based Nursing Best Practice Guidelines, a trend in nursing research and practice which their article is critiquing heavily. Rather, there is a need for supporting and developing individual

competencies for critically appraising research and adapting research findings to local contexts and nursing practice. According to Rycroft-Malone (2008), there is a need to shift focus from the individual to the context in evidence-informed nursing practice. Managers at multiple levels of the organization could lead the work of facilitating and mediating emergent new practices in context-sensitive ways. In the case presented in this thesis, it became obvious during our field studies that when the healthcare organization was faced with the challenge of designing a new way of working with discharge planning, there was a mismatch between existing ICT (Information and Communication Technology) applications, relevance to the context of their functions and the participants' abilities to interact with them effectively. The development and implementation of a broad range of new technological applications for supporting and transforming healthcare delivery holds huge promise for the future, but also raises issues about the responsibility for addressing complex challenges that involve multiple research disciplines and crave long-term interdisciplinary research collaboration (Baumwol et al., 2011), as well as about the responsibility for designing interoperable, easy to use, engaging and accessible solutions that can be adapted to the local context and to individual needs in use (Baumwol et al., 2011, Kreps and Neuhauser, 2010). There are thus serious challenges and potential barriers to the implementation and sustainability of technologies in healthcare services. The design of eHealth systems is usually in the hands of system suppliers or in-house professional system designers (Kreps and Neuhauser, 2010), which often results in discrepancies between functionality of the system and ease of use (Mahmud, 2013). As a way of meeting this kind of gap between system designers and users, there has been an increased move towards a more user-centred ICT design using varieties of approaches in Action Research (AR), where the most common approach is Participatory Design (PD) (Baskerville and Wood-Harper, 1996). This PD approach in ICT design has succeeded in integrating social factors that are of importance for usability and accessibility of the systems where other research methods fail (Cornford and Pollock, 2003). Kreps & Neuhauser (2013) highlight the importance of taking into account social factors in framing the design and process of eHealth. In the case studied in this thesis, the aim

was to apply a holistic approach, involving the staff in the design of a new way of discharge planning, using a video conferencing system. The holistic approach was intended to contribute to shifting the focus from the technology itself to the various local contexts in which the implementation was taking place and to the people involved (Johannesson and Winge, 2011).

Designing technology and designing the use of technology are two different perspectives and require that those responsible for the design reflect on the design purpose (Lawrence, 2013). By applying standards and clear policies (Han et al., 2009) in the design of discharge planning, in combination with evidence-based interventions as proposed in best practice guidelines, the outcomes of the patient's further care after discharge can be improved (Hill Bailey et al., 2013). When designing a new way of working with discharge planning, communication between care workers and family as well as ongoing support after discharge are of importance to take into consideration (Bauer et al., 2009). According to Wong et al. (2011), interdisciplinary communication and coordination between various healthcare parties and providers throughout the whole discharge process has to be taken into account when designing new ways of working. However, lack of standardization, along with difficulty of ensuring that patient data is transferred to those responsible for the patient's further care after discharge, are described as two of the most important issues when discharge fails (Jack et al., 2009). When discharge planning sessions fail, this results in a bad start-up for the patient's further care at home as well as readmissions to hospital (Shepperd et al., 2010). Bauer et al. (2009) describe a direct correlation between the quality of discharge planning and readmission to hospital. It is clear that there are a number of complex issues and requirements which have to be taken into account when it comes to designing discharge planning sessions using video conferencing, but that there is potential for making discharge planning more efficient, effective, patient-centered and sustainable in the process.

An important aspect to be aware of in the design process, when creating a new best practice using video conferencing in discharge planning, is the concept of usability.

Usability is a well-known concept in the design of IT- based interventions. The word itself is defined in the International Organization of Standardization (ISO) standard ISO 9441-11 (1998) as "*The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use*". This definition, which is generally understood to include usability of services as well as of products, makes clear that usability can only be measured in relation to specific users in a specific context of use and these users' specific goals when using the product or service. Thus it is obvious that usability is dependent on the context and purposes of use of products and services.

Unfortunately, the concept of usability is mainly used within the context of design and development of IT, as a narrow measurement for specific attributes of specific products and services related to quality evaluation of the IT solution itself. In the design of a new everyday practice using video conferencing in discharge planning, and its continuing design in use, the word usability takes on a much deeper meaning, as it concerns the usability of the technology within the whole working process and is not simply a quality measure to be applied on the video conferencing system. The ISO 9441-11 (1998) definition of usability defines the key words effectiveness, efficiency and satisfaction as follows:

Effectiveness: the accuracy and completeness with which specified users can achieve specific goals in particular environments.

Efficiency: the resources expended in relation to the accuracy and completeness of goals achieved.

Satisfaction: the comfort and acceptability of the work system to its users and other people affected by its use.

Although the concept of "users" in the above definitions indicates that people are going to use the specific product or service, the concept of "work system" indicates that it is not only the product or service itself which is in focus, but rather a larger and more comprehensive activity system view which needs to be applied when designing for usability. Thus there is a need to focus more on the work system and the work practice as a whole rather than the product or service – in this case a video conferencing system – which is being introduced in the work system, Usability

needs to be designed and evaluated in relation to a dynamic activity system when designing a new best practice (Kuutti, 1996). This way of understanding the concept of usability also highlights the social construction of technology (Mackenzie and Wajcman, 1985) and paves the way for new insights about how to support emergent practices in adapting new technologies. Theories, approaches and methods from the social sciences can contribute to a richer understanding of how to study and support the continuing design in use of new technologies in order to support usability, i.e. effectiveness, efficiency, and satisfaction in everyday work practice. In ethno methodologically inspired work place studies within Human Computer Interaction (HCI) for instance, accountability is a central concept for understanding how people organize their everyday actions and interactions. Ethno methodological understandings of the concept of accountability are contributing to new understandings of how to address and make visible usability issues in work systems in order to take them into account in the design of new IT solutions, in further design of IT in use, and in the support and design of new work practices (Eriksén, 2002).

5. Methodology

This chapter introduces the methodological design of this thesis, including sample, methods and analysis.

This thesis is based on a qualitative methodology. The approaches in the included studies are chosen according to the research questions in each study. The choice of a qualitative research approach was made in line with the definition by Hartman (2004) who states that *"qualitative research is characterized by the striving towards understanding of the life world of an individual or a group of individuals"* (here translated from the original quote in Swedish). According to Svensson & Starrin (1996), the positioning of the research should be based on the purpose of the research conducted. In the case of the research presented in this thesis, it has not seemed sufficient or appropriate to conduct research on the topic of implementing IT support for everyday nursing practice by only following the main theoretical routes used in health and technology research (Eliasson, 1997). Rather, it has been deemed important to consider alternative or complementary approaches in social sciences where relationships are understood as part of social reality and the people involved in the social construction of technology have to be taken into account (ibid.). Qualitative research has as an object people's life worlds and the meaning they connect to themselves and their situation (Hartman, 2004). The meaning people connect with the implementation process of using video conferencing in discharge planning sessions, which the researcher can only access indirectly through field studies involving observations, interviews, workshops, surveys and careful interpretations of what people say and what people do, should, according to this perspective, be important for understanding what is going on. Thus, this thesis is based on a qualitative and interpretative approach. The more specific approaches and methods used in the included studies are further presented together with study design, sample and analysis in the following sections.

5.1 Study design

This thesis includes four studies. All of them have a qualitative approach, but each of them has different qualitative inputs. A summary of the approaches are included in [Table 1], and further stated in the following subtitles and subsections of the method section.

Table 1. Study design of the four studies included in this thesis

Study	Year	Aim	Study population	Materials and methods	Data analysis
I	2009-2011	To highlight experiences regarding discharge planning sessions and concerns about using video conferencing in discharge planning	10 healthcare professionals (nurses, occupational therapists, physiotherapists)	Interviews	Phenomenological hermeneutics
II	2011-2013	To gain knowledge and understanding of how factors in a theoretical framework match involved staff's experiences of the implementation process when video conferencing was introduced in the discharge planning session, and if there were any unknown additional factors that influenced the implementation process as well.	11 implementers (project leaders, discharge planning coordinators working in hospital and homecare)	Interviews	Qualitative content analysis, deductive approach
III	2013-2014	To investigate healthcare managers' experiences of leading the implementation process using video conferencing in discharge planning sessions	10 healthcare managers (overall level, intermediate level, first-line level)	Interviews	Qualitative content analysis, inductive approach
IV	2009-2014	To examine the perceptions of the involved professionals working at hospitals and in homecare in regard to designing a new best practice, when video conferencing is implemented in the discharge planning sessions	70 nurses working in hospitals and homecare, and 13 healthcare professionals (first-line managers, nurses, occupational therapists, physiotherapists, social worker)	Questionnaires, workshops, field notes	Participatory Action Research

5.1.1 Phenomenological hermeneutics

Study I in this thesis takes its starting point in phenomenological hermeneutics in the study design and as analysis method. The choice of this approach builds on the study aim, which was to examine healthcare professionals' experiences regarding discharge planning sessions, as well as their concerns about using video conferencing in the discharge planning. Creswell (2009) describes phenomenological hermeneutics as a method where the researcher tries to understand and interpret meaningful phenomena, that is phenomena created by humans through opinions, in texts and in documents. The hermeneutical researcher tries to answer the question "*what shows up and what is the meaning of the shown up?*" by taking a standpoint in using interpretation as a main method (ibid.). In hermeneutics, the pre-understanding of the researcher is of importance, as it forms the basis of the knowledge that the researcher already possesses, which in turn becomes the background for the interpretation of the studied phenomenon (Creswell, 2009). The pre-understanding of the researcher forms the platform from which it is possible to familiarize oneself with the interviewee's situation (Lindseth and Norberg, 2004), and to develop an understanding of the phenomena in its context (Hartman, 2004).

Phenomenology focuses on in what way interpretation of phenomena can create and enhance our understanding of the world. In the case presented in this thesis, the overall focus of the four studies is on exploring and interpreting the way of looking at oneself, the world and the lived experiences as a professional working with discharge planning. The interpretation process is carried out during in-depth interviews, through which it is possible to create an understanding of the individuals' interpretation of their lived experience in everyday work (Lindseth and Norberg, 2004). The analysis of gathered data involves interpreting what is already interpreted by the interviewee (Hartman, 2004), and through this process enhancing an understanding of the meaning of the phenomenon "discharge planning" as it is conveyed by the professionals working with discharge planning. The analysis is based on the researcher's understanding of the sense-making, beliefs and motives

that affect human action and interaction, and this understanding is in turn grounded in the empirical material which has been gathered (Hartman, 2004).

5.1.2 Qualitative content analysis

In **study II** and **III** qualitative content analysis was used. Content analysis is a widely used qualitative research technique in health studies in recent years. It has three approaches that should be seen as separate distinct approaches, rather than being a single method. All three approaches are used to interpret text data from a predominately naturalistic paradigm (Hsieh and Shannon, 2005). Content analysis has a long history in research both in Scandinavia and in the US, but was first used as a quantitative research method, with text data coded into explicit categories and then describing statistics (*ibid.*). More recently, content analysis as a method of qualitative analysis for health researchers has been recognized, leading to its increased application and popularity (Nandy and Sarvela, 1997). Qualitative content analysis focuses on the characteristics of language as communication with attention to the content or contextual meaning of the text (Hsieh and Shannon, 2005). In **Study II**, directed qualitative content analysis was used, where the aim of the study was evaluation and theory testing (Elo and Kyngäs, 2008) of the already existing framework developed by Nilsen et al. (2010), in relation to implementation processes in healthcare. This framework was developed in an attempt to elucidate and describe the various factors that affect the implementation process in the healthcare sector, and was inspired by classifications of explanatory factors presented by Rogers (2003), Greenhalgh et al. (2005), Grol & Wensing (2013) and Nutley et al. (2007). The framework consists of six components with underlying descriptions that should be ranked and estimated separately from each other (Nilsen, 2010), and in this study it was valuable to evaluate the framework, as it was a compilation of many different factors described as affecting implementation processes in healthcare. By using directed content analysis (Hsieh and Shannon, 2005), this already existing theory and framework could be validated and extended, while at the same time examining in what way it was suitable as guidance when implementing video conferencing in discharge planning sessions.

In **Study III**, qualitative content analysis was used in a conventional way, using an approach developed by Graneheim and Lundman (2004) as suitable for nursing research. Qualitative research that is based on data from narratives requires understanding and co-operation between the researcher and the participants, such that texts based on interviews are mutual, contextual and value-bound (Lincoln and Guba, 1985). A text always involves multiple meanings and there is always some degree of interpretation when approaching a text (Graneheim and Lundman, 2004). When using qualitative content analysis, one of the first basic issues is to decide whether the analysis should focus on manifest or latent content. Describing what the text says deals with the manifest content, while what the text talks about deals with the relationship aspects, involves an interpretation of the underlying meaning of the text, and is called latent content. Thus, both manifest and latent content are dealing with interpretation, but the interpretations vary in depth and level of abstraction (ibid.). In **Study III** the analysis focused on latent content, when analysing the interviews with healthcare managers about the implementation of using video conferencing in discharge planning session.

5.1.2.1 Inductive or deductive approach

There are two approaches in content analysis, the inductive and the deductive approach (Elo and Kyngäs, 2008). The type of approach that is chosen is determined by the purpose of the actual study (ibid.). If there is not enough former knowledge about a phenomenon, or if knowledge is fragmented, it is suitable to take an inductive approach, as was done in **Study III** when analysing managers' experiences of implementing video conferencing in discharge planning sessions. If the structure of analysis is operationalized on the basis of previous knowledge, where the aim of the study is to test theory, a deductive approach is suitable to use (Elo and Kyngäs, 2008), as was done in **Study II** when a developed framework was tested. An inductive approach moves from the specific to the general, that is, particular instances are observed and then combined into a larger whole or general statement. A deductive approach is based on an earlier model or theory, that is, it moves from the general to the specific (Hsieh and Shannon, 2005).

5.1.3 Participatory Action Research

Study IV was conducted using a Participatory Action Research (PAR) approach. PAR is a systematic, participatory approach, used here to enable the professionals to extend their understanding of problems or issues regarding discharge planning using video conferencing, as well as to formulate actions that are directed towards the resolution of those problems or issues (Stringer and Genat, 2004). PAR is also an approach to developing research and knowledge - rather than a research method - where practitioners and researchers work systematically together, with the purpose of exploring issues that directly concern practice (Stringer, 1999). The approach is based on a conviction of an inherent equality, where everybody's knowledge is equally valuable (ibid.). Traditionally research is seen as an activity performed by people from different research institutes, but collaboration between researchers and practitioners is a way of closing the gap between research and practice (Heron and Reason, 2006). All formulations of PAR have in common the idea that research and action must be done 'with' people and not 'on' or 'for' people (Heron and Reason, 2006). In Study IV, it was suitable to use PAR, as the aim was to investigate the perceptions of involved professionals working in hospitals and in homecare in regard to the design of a new best practice, when video conferencing is implemented in the discharge planning sessions.

5.2 Data collection methods

All included studies in this thesis were conducted in a region in southeast Sweden, and all data collection was conducted in the workplaces where the respondents worked. The data collection methods were chosen according to the research questions addressed in each study.

In **Study I-III** data collection was carried out through qualitative interviews, which according to both Creswell (2009) and Bryman (2011) enables the development of enhanced understanding of individuals' everyday life with the purpose of putting the individual sense-making about the world in focus by describing some part or parts

of a meaningful reality from the perspective of the individual as the knower (Creswell, 2009).

In **Study I**, interviews were conducted by two of the researchers (LN, CB), in a healthcare centre, and took the form of a dialogue. The questions were open, with a focus on the main areas covered by the study and with the support of an interview guide (Bryman, 2011). The two main questions in the guide were: Could you tell me about your experience of discharge planning sessions? Could you tell me about your concerns regarding the use of video conferencing in the discharge planning session? The supporting questions were for example: Can you go into more detail? The supporting questions were used to help the informants gain a grasp of their narrations. The minimum number of participants for this study was decided to be 10, which was one third of the 30 persons working with discharge planning and who have the primary healthcare centre as their place of work. It was decided that this selection of participants should include at least one person from each of the professional groups working at the primary healthcare centre with discharge planning, i.e. a district nurse, an occupational therapist and a physiotherapist. Of the 30 employees in question, 19 were district nurses, five were occupational therapists and six were physiotherapists. The nursing staff declared their interest in participating a few days after having been informed about the study and the specified number of representatives from the different professional groups that had been aimed for in the group was achieved. In total, seven district nurses, two occupational therapists and one physiotherapist participated in the study. The participants were all in the near future about to participate in a distance-based discharge planning session, where a video conference system would be used in the planning sessions.

In **Study II** data was collected by means of interviews by one of the researchers (MH) with 11 implementers about their experiences of the implementation process of using video conferencing in discharge planning sessions. In total there were 23 implementers, and to achieve a manageable amount of data that also was sufficient enough it was decided to interview half of them. The sample should also include at

least two from each group of the project leaders, discharge coordinators working in hospitals and discharge coordinators working in homecare. Given these framing conditions, 11 participants were randomly sampled, and all of them chose to participate voluntarily and gave their informed consent for the study. Two of the participants in the study were project leaders, six were discharge coordinators working in hospitals, and three were discharge planning coordinators working with homecare. The interviews took the form of a dialogue, using an interview guide (Bryman, 2011) combined with open questions, about their experience of the process of implementation when a video conferencing system was used in the planning session. The interview guide was used to ensure that the questions highlighted the content of the framework developed by Nilsen et al (2010), and thus focused on the six components of the framework and their underlying descriptions, described in figure 1. The main question in the guideline was: Could you tell me about your experience of the implementation process of using video conferences in discharge planning sessions? The supporting questions were for example: Can you tell me more about this? The supporting questions were used to help the informants gain a grasp of their narrations.

Also in **Study III** data was collected by means of interviews by one of the researchers (MH) with 10 healthcare managers, where 2 of the managers were at an overall level (macro level) in the organisations, 3 were at an intermediate level (meso level) and 5 were first-line managers (micro level). The managers working at an overall level had the responsibility of leading long-term work and made decisions far from the everyday work places in healthcare commonly associated with nursing practice. Managers working at an intermediate level had the responsibility of leading the communication and preparation of these overall reached decisions together with the first-line managers, who in turn were responsible for the execution of the reached decisions. The interview questions were open and there were two main questions, followed by some supporting questions, intended to help the informants gain a grasp of their narrations. The main question was: 1) would you like to tell me about your experience of leading the implementation process of using video

conferencing in the discharge planning session? The supporting questions were for example: Can you elaborate?

In **Study IV** data was first collected by means of a questionnaire where nurses working in hospitals or in homecare participated by grading propositions about what was characterizing for a non-functioning discharge planning session. In the next stage of the study, additional data was collected through workshop sessions where the participants and one of the researchers (MH) got together for five sessions. The role of the researcher in the workshops was to lead the workshop sessions and to facilitate the process by participating, as well as to offer support in the different phases - *look, think and act phases* - in Participatory Action Research (Stringer and Genat, 2004). At the first workshop session, *the looking phase*, first-line managers and their discharge planning coordinators working in hospitals and in homecare got together with the purpose of discussing the information which had been gathered during the first stage of the study, via the questionnaires, where 70 nurses working in hospitals and in homecare in the region had graded propositions about what characterized a non-functioning discharge planning session in traditional discharge planning. The purpose was also to discuss the relevance of the results of the questionnaire evaluation in relation to the implementation of video conferencing in the discharge planning sessions. Finally, the aim for the group was to define a relevant research question to continue the process. The participants of the first workshop session came to the conclusion that the following workshop composition ought to be multi-professional and include one participant from every contributing group of professionals. This resulted in a reconstruction of the group, where three of the participants from the first workshop continued to be a part of the following workshop group. The gathering of data continued in the next workshop session, in which *the looking phase* shifted to *the thinking phase*.

The looking phase included the gathering of relevant information and the defining of the research question; *the thinking phase* focused on exploration of the gathered information, together with analyzing and theorization; and finally, *the acting phase* focused on the planning of the change (Stringer and Genat, 2004).

5.3 Data analysis methods

A qualitative, phenomenological hermeneutical method for interpreting interview texts was used in **Study I**. This method has been elaborated on by Lindseth & Norberg (2004), who in turn are inspired by the theory of interpretation presented by Paul Ricoeur (1976). The analysis process in this method includes three phases: naïve reading, structural analysis and comprehensive understanding. The starting point of the analysis in study I is the experiences related by the respondents in the interviews. In the naïve reading, where a primary understanding of the phenomenon is founded, the researcher confines the meaning to the whole of the narration in the text, linked to its context. To gain an overall understanding, the text is read many times by the researcher, where the researcher is open-minded concerning what the text mediates with focus on the phenomenon. The structural analysis is, as Lindseth and Norberg (2004) state, to focus on the aim of the study, while searching for meaning units in the transcribed interviews. This in turn validates or invalidates the researcher's overall understanding of the text as acquired in the naïve reading. The structure of the text is in focus in this phase, while units of meaning in the text are being sought that explain what the text is saying along with the meaning of the lived experience. The third and last phase in the phenomenological hermeneutic analysis (Lindseth and Norberg, 2004) is the comprehensive understanding, where naïve understanding and themes are related to theory as the researcher's final interpretation of the text. Comprehensive understanding is achieved through a movement between interpretation and understanding of the lived experience, based on pre-understanding, literature, the naïve reading and the structural analysis.

Content analysis is a widely used qualitative research technique in the area of healthcare (Hsieh and Shannon, 2005). In **Study II** directed content analysis was used with a deductive approach. The use of this method was chosen to validate, and, if possible, conceptually extend an existing theoretical framework (Hsieh and Shannon, 2005). Directed content analysis is a more structured process than the one used in the conventional approach (Hickey and Kipping, 1996). The method guides the findings towards already existing codes and categories (Hsieh and Shannon,

2005). The interviews in **Study II** were recorded and transcribed verbatim. The text was thereafter analysed using qualitative, directed content analysis with a deductive approach (Hsieh and Shannon, 2005), with the purpose of evaluating and theory testing (Elo and Kyngäs, 2008) the already existing framework developed by Nilsen et al. (Nilsen, 2010). The analysis process proceeded by identifying key concepts and variables as initial coding categories (Potter and Levine-Donnerstein, 1999), to enable the understanding of the signification according to the applied framework. Every part of the text in the transcribed interviews was validated to be a part of the framework or to present findings that were new and unknown according to the applied framework, as the deductive approach is based on an earlier theory or model and moves from the general to the specific (Elo and Kyngäs, 2008). The findings from directed content analysis offer supporting and non-supporting evidence of a theory (Hsieh and Shannon, 2005), which means that data that could not be coded was identified and considered to be either a new key concept, a new variable of a key concept, or a new dimension. During the analysis process a new dimension surfaced that we could not tie in with the other six key concepts and variables in the framework by Nilsen et al. (2010).

In **Study III**, qualitative content analysis with an inductive approach was used, which is a method often used in nursing research (Graneheim and Lundman, 2004). The interviews in **Study III** were recorded and transcribed verbatim, where every interview was considered as an analysing unit (Patton, 2002). The text was thereafter analysed by first reading all the data repeatedly to achieve immersion and a sense of the whole and then proceeding to open coding, by writing notes and headings in the text while reading it. The written material was read through again and as many headings as necessary were written down in the margins, with the aim to describe all relevant aspects of the content (Graneheim and Lundman, 2004). After the open coding, lists of categories were grouped under higher order headings, where the aim of grouping data is to reduce the number of categories by collapsing those similar into broader higher categories (Burnard, 1991). Creating categories is the core feature of qualitative content analysis, and has the purpose of providing means of

describing the phenomenon, to increase understanding and to generate knowledge (Cavanagh, 1997). When formulating categories by inductive content analysis, the researcher uses interpretation, as to which things to put in the same category (Graneheim and Lundman, 2004). Creating categories in the analyzing process is done through abstraction by formulating a general description of the research topic (Polit and Beck, 2006), where every category is named using content-characteristic words, and where sub-categories with similar events are grouped together as generic categories and generic categories are grouped as main categories (Graneheim and Lundman, 2004). To arrive at an interpretation of the underlying meaning, each category was read, critically analysed and compared, and a theme with two sub-themes was identified as describing an aspect of the structure of experience. These themes answer the question “how” and can be identified as a thread of underlying meaning running through codes or categories on an interpretative level (Graneheim and Lundman, 2004).

Study IV, using PAR, differs from the other three studies. The analysis process is created together with the participants and starts when the *looking phase* transfers to the *thinking phase* (Stringer and Genat, 2004). The *thinking phase* in study IV consisted of in total three workshops, and in the first of the workshops in this phase, the new participants got informed by the others and by the group leader about the research question and its background, that is, the results from the data collection via questionnaires which preceded the workshop sessions, and the following discussions from the first workshop. By collaborating with the workshop participants in both the gathering of the data, and in the analysis phase, the intention was to enable reflection together on the discharge planning process in general and on the design of a new best practice, using video conferencing, in special (Stringer, 1999).

After the information about the previous workshop, the participants started to discuss and reflect on how to design a new best practice, to make discharge planning work using video conferencing in discharge planning sessions. The discussions were based on the understandings which had surfaced in the results from the questionnaires and the following discussions of these results. The participants were

invited to write down their perceptions and thoughts individually on separate Post-it notes. One by one the notes were then presented and pasted on the wall by the participants, to allow all workshop members to take part of each other's notes and to be a part of the analysis. During the remaining time of the first workshop in the *thinking phase*, we discussed and reflected on the content of the Post-it notes. Through reflective dialogues (Stringer, 1999), facilitated by the participating researcher, the workshop members then started to sort the Post-it notes into common themes. The group leader (MH) asked naïve questions about issues that the workshop members possibly took for granted, as a way to invite the participants to question their perception of the current best practice in discharge planning. After these discussions and critical questions among the workshop participants, the Post-it notes were sorted to build main categories and subcategories (Stringer, 1999). At the following workshop, the second in the thinking phase, the group leader had made a compilation of the discussions and the sorting of the Post-it notes. This session was used to review the results from the previous workshop, allowing the participants to reflect once again on the material and to enable any desired corrections. The participants felt satisfied with the results from the previous workshop and no further addition was made to the categories. The remaining time of this second workshop was used to discuss the content of the main categories and subcategories. The group leader took notes during the discussion and posed questions when needed to strengthen the analysis process. In the third workshop the participants reflected on and drew final conclusions about what was needed in the design of a new best practice using video conferencing in the discharge planning sessions. The needs could be seen as a cohesive system consisting of two main categories, with underlying subcategories.

5.4 Ethical considerations

Ethical aspects are especially important in research, due to the fact that research in the long term affects society and its members (www.vetenskapsradet.se, 2012-04-17). Ethical aspects involve building up, stimulating and keeping up awareness of how we should be acting (*ibid.*). This thesis and included studies were conducted in

accordance with ethical principles within the Helsinki declaration (Generalförsamling, 1964), which are as follows:

Goodness principle - The fundamental design of the included studies have been performed with the hope that the study results will contribute to increased knowledge about implementation processes in Swedish healthcare, which in turn will benefit both patients and nursing staff.

Principle not to damage – The studies have the aim of minimizing the risks of participants experiencing it as inconvenient to participate, while sharing their observations and experiences about implementing video conferencing in discharge planning sessions.

Autonomy principle – The respect of the participants and their full right to full disclosure of what concerns their participation in the included studies has to be ensured by approval and the ability at any time to terminate participation without being exposed to pressure associated with the implementation of the study.

Principle of justice - Includes participants' right to an honest attitude and respect for their private sphere. Upon selection, no discriminatory methods were used when selecting participants for the included studies in this thesis. The overall attitudes towards anyone of the participants choosing to possibly withdraw from the study was to be treated with respect for their choice, regardless of reason.

According to Eliasson (1997), there is need for every researcher to ask the question of how the values that regulate the research respond to what we intend to achieve with the research and the humanity and the value-based position we have formulated. The four included studies in this thesis were discussed in their part with the Ethical Committee in the southeast (Etikprövningskommittéen sydost) before starting, and no further application was needed.

Participants in the included studies received written and oral information about the study they were to participate in. Thus, they were all informed about the voluntary nature of their participation, and they all gave their informed consent before the study was conducted. No identifiable details are given when reporting the results in the studies, and to guarantee confidentiality no names are revealed in the included articles in this thesis.

6. Findings

In this chapter the results from the four included studies are presented.

6.1 Study I

The aim of **Study I** was to describe experience-based reflections on discharge planning as narrated by nursing staff in primary healthcare, along with their concerns about how the introduction of video conferencing might influence the discharge planning situation. It was found that there is need for improvement in communication and understanding between nursing staff working in hospitals and in primary healthcare as the respondents expressed their experience of lack of consideration and knowledge on the part of the hospital nursing staff involved in discharge planning. The respondents agreed that discharge planning has received an unwarranted stamp of being a trivial matter due to the many uncertainties and the schisms between different involved healthcare professionals within the discharge planning context. The respondents also appeared to share a positive attitude towards the benefits of IT solutions; their answers indicated that they shared the view that, in general, IT can be expected to improve the status of an activity. However, all the respondents felt unsure about how IT would facilitate understanding and communication in the discharge planning process due to the respondents' uncertainty regarding implementation and use of this new working tool. Despite professed insufficient knowledge about distance-based discharge planning on the part of the respondents, they all agreed that in the main, staff would be supported by it while the patient would not benefit as much if discharge planning were to be done on a distance basis using video conferencing. There is need for improvement in communication and understanding between nursing staff working in hospitals and in primary healthcare. There is also need for nursing staff in primary healthcare to obtain more information about how IT solutions could support their work.

6.2 Study

Study II aimed to gain knowledge and understanding of how the different factors in a developed framework, which was composed from theories about implementation processes, and considered suitable and applicable for the healthcare sector, matched involved implementers' experiences of the implementation process when video conferencing was introduced in the discharge planning session. A further aim was to determine whether, in relation to the applied framework, there were any unknown additional factors that influenced the implementation process. It was found that the factors in the framework: implementation objects; implementation actions; actors; users; inner context and outer context, were consistent with the implementers' experiences, but with the addition of a new dimension – time, i.e. time to prepare; time to understand; time to run through and time to reflect. Thus, study II showed that implementation frameworks can be useful for understanding what goes on when IT is introduced in healthcare. Framing the implementation process supports the exposure of factors, and highlights relationships and states of dependency between those factors, which may affect implementation [Figure 5].

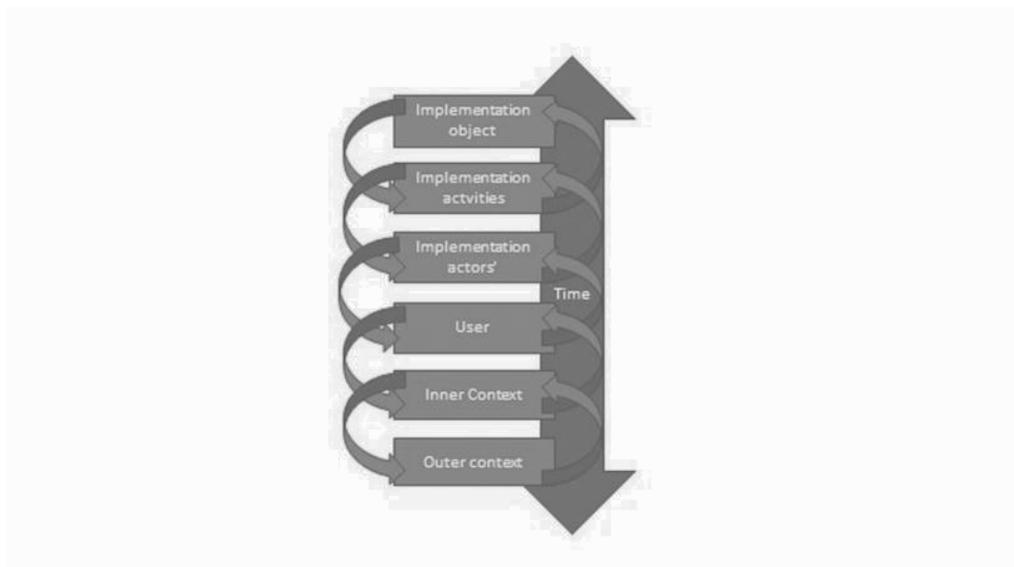


Figure 5. Model for framing the implementation of video conferencing as a tool to improve discharge planning in healthcare. Elaborated from the framework by Nilsen et al.

6.3 Study III

Study III aimed to describe healthcare managers' experiences of leading the implementation process of using video conferencing in discharge planning sessions. It was found that healthcare managers identified a desired way of leading and an actual way of leading when implementing video conferencing in the discharge planning sessions. The desired way of leading was described in terms of what an implementation process ought to include and what the managers should be doing as responsible for the process. It was described as a desired condition and had very little to do with how the process was actually working. The actual way of leading was described in terms of how the implementation process actually was working, when implementing video conferencing in the discharge planning session. Study III showed that there is need for managers at all levels to get more support, and more information and education, concerning how to get the staff actively involved and participating in the design of their everyday work, as well as in implementation processes, during the whole change process.

6.4 Study IV

The aim of **Study IV** was to describe the reflections of professionals' working with discharge planning about what is needed in order to create what should become a new best practice, that is, in this case, the efficient use of video conferencing in the discharge planning sessions. The results indicate that the professionals experienced lack of knowledge and understanding about each other's everyday work and that the absence of well-functioning common routines obstructed the process. The results also indicate that there is a lack of common arenas to enable discussions, negotiations and agreements about adopting new routines as the discharge planning process changes over time. It is suggested that it might be useful for the professionals to gain more and deeper understanding of each other's everyday work. It could also be useful for the professionals to learn and understand how - regarding what to include in the planning sessions and where the planning session ought to

take place - different ways of discharge planning can affect the results of the patient's further care at home, after the discharge.

The results of the included studies show the importance of how to manage the many ongoing IT implementation processes in Swedish healthcare organizations, by highlighting challenges and difficulties that both healthcare professionals and managers have experienced during an implementation process. The results also indicate that implementation frameworks can be useful when new IT solutions are introduced in healthcare, and that there is a need for dedicating time, space and support for involved professionals to participate in designing their everyday work. The main lubricant in the overall processes of change when introducing new working routines might be communication between professionals and managers, regardless of managerial level-communication with the aim of creating shared understandings and creating working relations among participants regardless of professional orientation.

7. Discussion

7.1 Results discussion

The overall aim of this thesis was to study the implementation process of using video conferencing in discharge planning sessions, based on a research approach located within a new interdisciplinary research area, Applied Health Technology. The main focus of the research has been on how managers' leadership and the organizational culture have affected the implementation process of using video conferencing in discharge planning sessions. The aim of the chosen research approach and the design of the four included studies has been to gain a deeper understanding of how this process was perceived by healthcare professionals and managers who were involved in and/or affected by it, as seen from an everyday work perspective within nursing practice. The study results demonstrate that implementing IT solutions in everyday work in healthcare is surrounded by a multitude of complex tasks, and that many different professionals at different organizational levels are involved along the journey. In the following, the results discussion is divided into sections to give a better overview but also to compile the four studies into a thesis.

7.1.1 Time, a missing dimension that matters - or just an excuse?

The dimension *time* has been discovered to be an important aspect that was perceived by those involved as affecting the outcome of the implementation process. When a new tool, such as video conferencing in discharge planning, is to be implemented, individuals need time to prepare themselves in order to understand the advantages of the tool. They also need time to test the tool in everyday work and reflect on how it might interplay with existing routines and tasks.

In the light of a stressed implementation process, and given the vision that information technology (IT) will immediately render healthcare more effective (Schoen et al., 2006), it is important to underline that realistic timetables that include time for reflection and rethinking of existing work practice are considered a success

factor in the implementation process, although this is not always taken into account (Øvretveit et al., 2007). To highlight the importance of the dimension *time* that will inevitably affect the outcome of the implementation process, this aspect was added to the framework developed by Nilsen et al. (2010) [Figure 5] which was applied in study II. *Time* influences all the other factors in certain ways and ought to be seen as an aspect that needs to be consistently present and taken in to consideration in discussions concerning the outcomes of the implementation process. The model describes the major factors that influence the implementation process. It takes into account that each factor affects the others in different ways, but the different factors are not graded or prioritized vis-à-vis each other. This interrelationship between the implementation factors is represented by the arrows linking the factors, while the broad arrow indicating the dimension *time* is to be seen as an overall aspect – a missing dimension in the original framework – that permeates all of the other factors. It is indicated in study II that individuals need time to prepare and understand the implementation object and the implementation activities. Implementation actors also need time to go through the implementation of new tools on every level of the organization in order to maintain the organization as a knowledge platform. Users need time to reflect on and incorporate the new tool into the inner context of everyday work in nursing practice along with the regulations of the outer context, in order to address and find situated solutions in practice to perceived ambiguities such as differences in social norms and the lack of balance between the pace of IT implementation in Swedish healthcare and the laws that regulate implementation.

Discharge planning sessions as they are carried out in the traditional way are perceived as complicated and time-consuming, and seem to be a persistent problem according to a number of earlier studies (Gurner and Wånell, 1998, Norberg and Sjögren Holm, 2006, Atwal, 2002). It seems that nursing staff underestimate their need to participate to make discharge planning really work (Study I). Even if they know how important the planning session is for further care at home, they do not really see the benefit of their own participation in relation to the time they spend on

it. Also the managers leading the implementation process describe the perception of time as an affecting parameter in processes of change (Study III). They wanted enough time for preparing for the change, as in the case of implementing video conferencing in discharge planning. They expressed the awareness that changing work processes takes time and that there was a need for the managers themselves to have enough time to work out a plan for the implementation process of using video conferencing in discharge planning as well as a need for the staff to have enough time throughout the implementation process to learn how to use the videoconferencing system and also have the opportunity to try it out.

Ahrenfelt (2001) describes organizational power as being hierarchically allocated, and argues that everybody in an organization is in trouble when the highest managerial level in an organization does not understand that change processes and developing processes take time and cannot just be ordered off-the-shelf. However, when the word *time* is used in these various contexts and presented as the solution to all problems, there ought to be a warning sign raised. Is the answer to difficulties in implementation processes in Swedish healthcare simply to add more *time* (Øvretveit et al., 2007), implying that with a sufficient amount of time, everything is going to work out just fine? Or is “lack of time” just an excuse used to avoid addressing more fundamental issues and challenges in an organization? Sometimes perceived lack of time might be an indication of an underlying lack of structure, which is manifesting itself as perceived constant lack of time (Contino, 2004). A co-constructed understanding of, and support for the provision of, ““enough time” as part of a well thought-through, communicated and shared structure for managing changes in processes and work practices might help when managing implementation processes in healthcare organizations. Given that the issue of perceived lack of time for addressing and managing change kept surfacing in study II, it is suggested that time is an important phenomenon in everyday work in nursing practice and that the “missing dimension of time” in framing implementation of IT solutions in healthcare organizations, whether used as an excuse or not, would be worthy of future research.

7.1.2 Leadership and organizational culture's way of affecting the implementation

The participants in one of the included studies (Study III) were dealing with what kind of organizational culture they were part of, reflecting on the word *loyalty*, and the “*need of loyalty in relation to reached decisions*”, when talking about decision processes. But as a contradiction to this need for loyalty, they also talked about a tradition that exists in the organization, which is to not follow decisions, even if the decisions were made at a higher managerial level. This tradition of not following decisions could also be described as a tradition not to follow the decisions that do not appeal to the manager's own conviction of how to deal with a subject or area (Ekvall, 1996, Kaufmann and Kaufmann, 2005, Schein, 1990). It might be that such individual managerial choices, to not follow decisions taken by one or another leader at one or another level, having one or another official position in the organization, could to some extent explain why the implementation process of using video conferencing in discharge planning became such a protracted process. When the organizational culture authorizes or allows for that participating in changing processes is a choice for the individual leader to decide about, there is a risk that decisions taken at a higher managerial level never become realized (Bolman and Deal, 2005). Salmela et al. (2012) state that the culture of an organization must always be taken into account in processes of change. As change requires learning, and continuous learning is the cornerstone of an organizational culture dealing with change processes, and for genuine change to happen, the reshaping of ideas, opinions and values and the changing of thought patterns needs to be supported. This is also stated by Denti and Hemlin (2012), who describe that the relationship between leadership and innovation appears strongest in organizations that have a supportive culture for innovation, and argue that the establishing of this creative knowledge environment is a leader's responsibility. Holmberg & Tyrstrup (2010) also state that one of the most distinctive characteristics of everyday leadership is the need to be event-driven. This, as well as the ability of the leader to understand and lead organisations in challenging processes of change, is seen to be an important success factor (Holmberg and Tyrstrup, 2010, Mintzberg, 1994). Accordingly, it

might be important for the nursing staff to gain the active support of their manager in order to be able to introduce discharge planning with a video conference system as a common routine. The ability of professionals to discuss and influence new ways of working can be seen as an underestimated success factor when the focus is on improvement. In combination with an understanding of why decisions are taken to change the work being done, this might also be seen as important. The everyday leadership at each and every level in an organization ought to be of considerable importance. Holmberg & Tyrstrup (2010) describe the characteristics of everyday leadership at each level as being based on different parts of the managerial work. They also describe a perceived lack of understanding of how managerial work relates to the organizations' overall working processes. Thus, everyday leadership mostly consists of sets of activities; interpretations, constant adjustments and formulations of temporary solutions, instead of dealing with the overall processes (ibid.). This means that the more integrated job of managing, which is to understand and lead organizations in challenging processes of change, (Bolman and Deal, 2005, Mintzberg, 1994) seems to be of subordinate significance. But without leaders at all levels with the knowledge, ambitions and willingness to see this "bigger picture" of the process, implementations of innovations, whether technical or not, will probably have difficulties to succeed in Swedish healthcare (Pettersson et al., 2009, Balka, 2003).

In Study III, a difference between how the respondents wanted to act leading the implementation process and how they actually acted is highlighted in terms of desired and actual way of leading. *The desired way of leading* was described in terms of what the implementation process ought to include and what the managers ought to do in their role as responsible for the process. *The actual way of leading* was described in terms of how the implementation process actually went, when implementing video conferencing in the discharge planning session. This could be seen in relation to what Denti (2013) describes, stating that leaders are faced with a fundamental challenge of dealing with dual roles, due to the top-down and bottom-up roles they have when managing innovation goals and strategies. A collision when

leaders get stuck between the top-down role and the bottom-up role creates frustration, as the leaders have to be clear in their decision process, even if they do not perceive that the overall decision process is distinct about what is going to happen, as in this case with the implementation process of using video conferencing in discharge planning. On the one hand, there was a decision taken to the effect that video conferencing had to be implemented, yet, on the other hand, there was uncertainty about how to operationalize the decision and thus an uncertainty concerning what their role as managers really should include. Both Ahrenfelt (2001) and Sellgren et al. (2006) describe that the role a leader plays forms part of what kind of leadership style a person stands for, and leadership style is related to the personal value system of an individual and shaped by his or her culture, society and life experience (Sellgren et al., 2006). Battilana (2010) partly seems to confirm this by stating that the role of leadership in change implementation is considered a complex multi-dimensional task composed of different activities, and a leader's competencies in leadership might differentially influence the key activities involved in planned organizational change. But the role a leader plays when video conferencing in discharge planning is implemented ought additionally to depend on how the actual organization deals with organizational change. Salmela et al. (2012) argues that there is need for leaders to have guidance and knowledge of what is expected of them during a structural change process. The parallel perspectives on leadership which surfaced during study III, i.e. the desired leadership when leading the implementation process, and the actual leadership during that process, indicates that the participants did not know what was expected of them from upper level management in the way of managing change in and through their everyday leadership, nor did they understand what kind of expectations they had to deal with from their staff during the change process (Lewin, 1947). Greenhalgh et al. (2005) and Bang (1999) describe the organization as a platform for how knowledge is maintained, shared and incorporated into tasks in everyday work. The way an organization deals with knowledge will thus influence the implementation process (Robinson and Street, 2004). In this thesis, this is played out in the way that the attitudes of managers and co-workers to video conferencing are an important source

of guidance regarding the outcome of the implementation process. The way managers discuss the use and implementation of the video conferencing system with their staff will most likely affect the adoption process at their work place (Kaufmann and Kaufmann, 2005). Also the way managers have a dialogue with other managers about the use and implementation of the video conferencing system can affect the overall implementation process. Even the fact that some kind of rivalry may arise between the work places, when there is a massive ongoing implementation process, such as implementing video conferencing in the discharge planning session, could have a negative effect on implementation and needs to be taken into account (ibid.). When there is rivalry, the sharing and use of relevant knowledge could be affected, delayed or perhaps even evaded altogether.

7.1.3 Designing everyday work, why, for whom and by whom?

When designing everyday work using video conferencing in discharge planning, there is a need for involved professionals to learn more about the role every professional plays in the discharge planning process (Norberg and Sjögren Holm, 2006). Professionals working in hospitals have very little knowledge about the workplace circumstances in homecare and vice-versa, and there is an ignorance about the everyday practice considering the inter-professional work that takes place in a context different from their own. These unclear identified staff roles are stated by Wong et al. (2011) as a barrier to effective discharge planning. Similarly, Efraimsson (2005) and Hegney (2002) describe uncertainty and perceived inequality between the responsibilities of different parties within the discharge planning process, which creates frustration and troubled feelings among nurses working in hospitals and in homecare when designing everyday practice.

The design of a new way of working with discharge planning using video conferencing is surrounded by issues and challenges such as a mismatch between existing EHR (Electronic Health Record), internet-based systems to transmit relevant data between stakeholders and other ICT applications (Kreps and Neuhauser, 2010). This affects the ability of the participants of the discharge

planning session to interact effectively with existing ICT solutions and thus reduces the relevance and value of the existing ICT solutions as well as the video conferencing system to the intended context of its use (Baumwol et al., 2011, Kreps and Neuhauser, 2010). There are in other words potential barriers to the implementation of video conferencing in discharge planning due to usability issues concerning a number of existing ICT solutions in healthcare (ibid.). Involving the staff in the design of a new way of discharge planning, using a video conferencing system, by having a holistic approach will shift focus from the technology to contexts for implementation and to the people involved (Johannesson and Winge, 2011). Designing technology or designing the use of technology are two different perspectives and this requires that those responsible for the design reflect on the design purpose (Lawrence, 2013).

Designing everyday work in discharge planning became an issue many years ago when it was decided that the Swedish healthcare system should no longer take responsibility for long-term social care (SFS, 1990:1404). When there was need for patients to receive further care after discharge, some kind of planning was made in collaboration between hospital staff and staff working in homecare and social care, and the discharge planning sessions were designed to take part at the hospitals in a meeting (ibid.). This was long before the internet was available as a resource for supporting meetings at a distance, securely providing the right information to the right user at the right time etc. Subsequently, various IT solutions have been created to facilitate everyday work practice and nowadays many of them are based on the internet. The way of addressing the work when a new technical device enters the scene in shared work practices, however, needs to be discussed and the staff should be allowed to be a natural part of such discussions. But even if the staff are allowed to participate in design discussions concerning changes in clinical practice, are they interested and willing to be a part of the work and in actively contributing to replacing the old way of working with something new and unknown? Nilsen et al. (2012) describe that habits are a critical variable in understanding clinical practice change, because healthcare professionals' daily practice is predominantly habitual

and therefore difficult to change through implementation interventions. Moreover, both Pinch (1984) and Nilsson et al. (2012) argue that tradition in a social context is important to understand and respect when technology is implemented within that context. Performing discharge planning is a task in everyday work that is associated with traditions and habits, as well as with culture (Peddle, 2007), regarding how the task ought to be performed. Even if video conferencing, in respect to the technology itself, is a very good tool and easy to use, the tradition of how the professionals are used to managing the discharge planning sessions affects the implementation process and the adoption of the innovation (Nilsen et al., 2012). Hence, in order for video conferencing to be widely accepted as an everyday tool for discharge planning, the implementation process needs to take the social context of tradition and culture into account, as is recommended and exemplified in the implementation framework developed by Nilsen et al. (2010). Forsner et al. (2010) state that organizations that encourage the staff to reflect on their everyday work are more successful than those who do not do so, when it comes to implementation of innovations. Reflection, in the sense of human self-reflection or careful consideration of something, is known to be one of the most valuable capacities when it comes to both individual (Fejes, 2008) and organizational learning processes (van Woerkom, 2010). Schön (2003) argues that ‘reflective practice’ can be an important tool in professional learning, where individuals learn from their own professional experiences, which can be seen as the most important source of personal professional development and improvement. Thus, providing space and organizational support for participatory design of new work practices in the context of introducing videoconferencing in discharge planning would seem to fit well with the concepts of ‘reflective practice’, ‘professional learning’ and ‘support for organizational learning’ which are part of the current discourse concerning implementing new technology in healthcare.

As the design of ICT solutions for healthcare organizations usually is in the hands of system suppliers or professional system designers (Kreps and Neuhauser, 2010), the design often results in discrepancies between functionality of the system and ease of

use (Mahmud, 2013). To achieve participation of staff when designing new best practice in discharge planning, PAR was used to reach a more user-centred approach in the design. A common approach otherwise is the use of Participatory Design (PD) (Baskerville and Wood-Harper, 1996), which is a design approach that has succeeded in integrating social factors of importance and high-lighting usability and accessibility of the systems where other research methods have often failed (Cornford and Pollock, 2003). Also Kreps & Neuhauser (2013) state the importance of taking into account social factors in framing the design and process of eHealth.

Still, there is need to reflect on why participation is needed, and for whom. Is there room for the managers to participate in the change process in discharge planning, or is participation only for the staff? What is the purpose of participation, and what are the expected outcomes? PD has a reputation for enabling staff to be part of creating everyday work in a user-centred way (Baskerville and Wood-Harper, 1996), but what if those with the power to support and carry through the possible new approaches are not allowed to participate? Criticism has in fact recently been raised about the purpose of participation, based on the argument that participation has become a goal in itself rather than a long-term sustained outcome in changing work processes (Whittle, 2014). This criticism stems from the perception that PD approaches tend to focus more on the processes of participation than the project outcomes (Balka, 2010), where resistance against managers' participation could be one of the reason that project outcomes are of minor importance, assuming that managers prioritize outcome. Also Activity Theory, which is an approach used in HCI (human computer interaction) research, has its benefits and challenges (Kuutti, 1996) when it comes to supporting participation in design of work practices and use of new technologies in the workplace. On one hand this theory does highlight the need of an outcome, when transforming objects by different activities, seeing activities not as isolated units but more like nodes in interlinked hierarchies and networks, influenced by other activities and other changes in their environment (ibid.). Nevertheless, in this theory as well, there is a need for asking the question "participation for whom?". Managers' participation in the design discussions is not

highlighted even if division of labour is made visible in the mapping of activities and the term hierarchy is mentioned. Hierarchy in this context indicates multiple levels, providing the possibility to discuss issues belonging to different levels within a larger integrated framework (ibid.). In this thesis, Activity Theory has not been further explored, but has been perceived as a potential approach for future research with the aim of exploring how issues concerning leadership and organizational culture can be linked more constructively and explicitly to the design of ICT, shared visions and emergent new practices in healthcare (Kuutti and Bannon, 2014).

7.1.4 Communication between professionals and managers in relation to organizational levels

When a new working routine is to be implemented in discharge planning it seems to be important for all different levels in the organization to be prepared and informed about the process. In a report from a Canadian study, Balka (2003) describes the importance of linking micro, meso and macro aspects together, by discussing micro-level problems in relation to macro contexts, such as provincial policy developments. If there is knowledge and understanding on the highest (macro) level of the organization about which factors may influence the implementation of new technology and new work practices, such as, in the case studied in this thesis, the use of video conferencing in discharge planning sessions, and if leaders on the macro level also understand and act upon the importance of communicating with the middle management (meso) level, as well as with the implementers (the micro level), the implementation process could have a better chance to succeed. This understanding and communication needs to be cultivated in both directions between levels (ibid.).

Healthcare managers as respondents experienced the need of communicating to the staff the fact that using video conferencing in discharge planning sessions throughout the region is a decision which has been taken and needs to be implemented. By stating that everybody is a part of this decision, they aimed to support the change process and contribute to making the decided-upon change actually happen. (O'Reilly et al., 2010) high-light the importance of leadership

alignment for strategy implementation. However, there is also a need for managers to encourage the staff to reflect upon and to ask questions about the decided-upon strategy and the implications of its implementation for their own work practice and existing work processes - in this case to ask questions about the discharge planning process itself, its intended outcomes, available tools and resources, division of labor - and learn how to use and manage this new working tool (Ekvall, 1996). According to Yukl (2009), effective leaders are concerned with both people and production and place importance on both relational and task orientations.

Nursing staff as respondents implied a lack of communication within and around discharge planning and that there may be insufficient time to improve it. But even if there is a perceived lack of time for participating in planned change of work practices, there is a need for the nursing staff to prioritise communication at the micro level (Efrainsson et al., 2006) and with a distance-based solution the system and the distribution of control in the activity must change in order to ensure that everyone is equally involved. In an earlier study, Sawyer (2005) argues that IT solutions may strengthen the interaction between different stakeholders, as IT elucidates the need to work out rules and norms in communication. Sawyer (2005) also points out that technical solutions often reveal conflicts and divided opinions. It would seem that rules and norms are a problem that needs to be sorted out between the nursing staff in homecare and the nursing staff at the hospital. Implementing a new discharge planning procedure by using video conferencing will not solve the existing communication problems (Nordmark et al., 2014), which seem to be quite severe. On a micro level, there is also the important communication between patients and nursing staff which needs to be supported. As Williams & Gossett (2001) argue, the communication between patients and nursing staff is a key component of effective healthcare and lays the foundation for a safe and secure nursing environment. McCormack (2003) also underlines the importance of functioning communication and of being patient-centred. With this in mind, it ought to be important for nursing staff who take part in discharge planning to communicate and cultivate inter- organisational spaces for sharing professional knowledge,

experiences, expectations and concerns in order to sort out and elaborate on new working routines for discharge planning. If implementation of new information and communication technologies can be deliberately attuned to highlighting and providing workable solutions for knowledge-sharing and ongoing negotiations of roles and responsibilities – not only within and between different nursing staff but also including patients and their next of kin as active stakeholders – then new tools such as video conferencing in the discharge planning process might have truly revolutionary potential.

7.2 Methodological discussion

This thesis is built on a qualitative methodology and the approaches in the included studies were all chosen according to the research questions in each study. To find an appropriate way of conducting research in the field of discharge planning using video conferencing, theoretical frameworks from health sciences, technology and social sciences, regarding the relationships between people meeting in a healthcare context, have been central (Eliasson, 1997). Qualitative research has as an object the life world of people and the meaning they connect to themselves and their situation. Mapping the meaning that people involved in the process connect with the implementation process using video conferencing in discharge planning sessions was seen as the way of providing the researcher with knowledge through interpretation of those meanings (Hartman, 2004).

Thus, though all of the four included studies have a qualitative approach, they are completed with different methods according to their research questions. In three of the four studies, data collection was made by qualitative interviews, which according to both Creswell (2009) and Bryman (2011) enables understanding of individuals' everyday life with the purpose of putting the individual meanings of the lived-in world in focus. The understanding of the individuals' everyday life is achieved by describing reality from the perspective of the individual as the knower. A qualitative research interview can be seen as a way of acquiring descriptions from the respondents' life world, followed by an interpretation of the phenomenon and the

meaning of the narrations (Lindseth and Norberg, 2004). The analysis process differed between those three interview studies, as the research questions addressed were different from each other, and the analysing approach was chosen according to what was deemed most suitable in each study. In **Study I** a phenomenological hermeneutic method (Lindseth and Norberg, 2004) was used as a suitable method to map the meaning ascribed to the implementation of video conferencing in discharge planning according to nursing staff working with lived experiences in healthcare. A deeper understanding was gained as they expressed their thoughts, feelings and concerns about discharge planning, as well as their concerns and expectations about introducing video conferencing in the discharge planning session. The participants recruited for our study were all voluntary and it must be taken into account that the participants may have been persons who were more able to express themselves and were more interested in making their voice heard, than the ones who chose not to participate. The researchers' own professional backgrounds, experiences and perspectives as nurses, teachers and managers should also be considered as an influencing factor in the process. To be aware of the pre-understandings and being able to handle this is important in hermeneutic research (Polit and Beck, 2006).

In **Study II and III**, content analysis, which is a widely used qualitative research technique, was used. Content analysis includes different approaches and should be viewed as a cluster of separate, distinct approaches, rather than being a single method (Hsieh and Shannon, 2005). In **Study II**, directed content analysis was used with a deductive approach. The use of this method was chosen to validate, and, if possible, conceptually extend an existing theoretical framework (Hsieh and Shannon, 2005). The analysis process proceeded by identifying key concepts and variables as initial coding categories (Potter and Levine-Donnerstein, 1999), to enable understanding of the signification according to the applied framework. Every part of the text in the transcribed interviews was validated to be a part of the framework or to present findings that were new and unknown according to the applied framework, as the deductive approach is based on an earlier theory or model and moves from the general to the specific (Elo and Kyngäs, 2008). The findings

from directed content analysis offer supporting and non-supporting evidence of a theory (Hsieh and Shannon, 2005), which in this thesis means that data that could not be coded according to the applied framework was identified and considered to be a new dimension. Directed content analysis is a more structured process than the one used in the conventional approach (Hickey and Kipping, 1996), as the method guides the findings towards already existing codes and categories (Hsieh and Shannon, 2005). In **Study III** conventional content analysis was used with an inductive approach. The purpose of using conventional content analysis in this study was to provide descriptions of a phenomenon, to increase understanding and to generate knowledge about the research area (Graneheim and Lundman, 2004). The analysis process proceeded by open coding, by writing notes and headings in the text while reading it. The written material was read through again and as many headings as deemed necessary were written down in the margins, with the purpose of describing all relevant aspects of the content (Elo and Kyngäs, 2008). After the open coding, lists of categories were grouped under higher order headings, where a category answers the question “what” and can be identified as a thread throughout the codes and refers mainly to a descriptive level of content (Graneheim and Lundman, 2004). Creating categories is the core feature of qualitative content analysis, and has the purpose of providing means of describing the phenomenon, to increase understanding and to generate knowledge (Cavanagh, 1997). When formulating categories, the interpretation of the text decided which things to put in the same category, and subcategories with similar events were grouped as categories (Graneheim and Lundman, 2004). To arrive at an interpretation of the underlying meaning, each category was read, critically analysed and compared, and a theme with sub-themes was identified as describing an aspect of the structure of experience. These themes answer the question “how” and can be identified as a thread of underlying meaning running through codes and categories on an interpretative level (Graneheim and Lundman, 2004). In **Study IV**, PAR was used as a systematic, participatory approach to enable the professionals to extend their understanding of problems or issues regarding discharge planning using videoconferencing, as well as to formulate actions that are directed towards the

resolution of those problems or issues (Stringer and Genat, 2004). PAR is an approach to develop research and knowledge - rather than a research method - where practitioners and researchers work systematically together, with the purpose of exploring issues that directly concern practice (Stringer, 1999). By establishing trust between the researcher and the participants (Smith et al., 2010) it was possible to involve the participants in the study from the start, intertwining data collection and data analysis in a process of shared sense-making (Heron and Reason, 2006). Pragmatic validity is essential in the methodology of PAR, where the goal is to co-constructively develop knowledge that can be used to improve a complex, multi-variate situation. In this study the aim was to investigate the perceptions of involved professional healthcare staff regarding the design of a new best practice when video conferencing was implemented in the discharge planning sessions, in collaboration between the multiple different healthcare professionals in hospitals and in homecare. In order to make new knowledge become meaningful and manageable in and for healthcare practice, professionals need to participate from the very beginning of the process. Ontologically and epistemologically, the assumption of PAR is, according to Heron and Genat (2006), that there is a reality, but people interpret this reality differently. By letting the workshop members discuss and reflect on their different experiences and knowledge, they were able to view the discharge planning sessions in a new way, using their own stories and analyzing them together. Whether the participation in this project and the workshops in this study will lead to some kind of change in everyday work in discharge planning is still unknown and will depend on whether the managers in charge strive towards carrying through the suggested changes and action plan that was handed over for further action. Participatory validity is another aspect central in PAR according to Stringer & Genat (2004), who state that a rigorous study requires prolonged engagement and trust. It is not easy to reflect on the work practice of oneself, since everyday reality often is taken for granted. This requires the researcher to establish relationships and trust to make participants feel secure and have the courage to talk about what they want and not what they think the researcher wishes to hear. In this research project, five workshops and the participants of those workshops created the research question,

produced data by telling their stories about discharge planning sessions and analyzed this data. This cyclic process provided the participants with an expanded understanding about the discharge planning sessions in general as well as the use of video conferencing in discharge planning sessions in specific. Through continuous dialogues, the participants confirmed the findings by recognizing examples of them in their everyday practice, which is what according to Polkinghorne (2005) is a validation of claims.

Nevertheless, all qualitative research needs to ensure trustworthiness of the data and according to Guba and Lincoln (1982) this includes credibility, transferability, dependability and conformability. Both Graneheim & Lundman (2004) and Lincoln & Guba (1985) also highlight trustworthiness as being important to achieve.

Credibility was achieved in the included studies by the close preparation of every study included in the thesis and the way they were conducted, and also how well the analysis was done, demonstrates the credibility of the findings (Graneheim and Lundman, 2004). Transferability as another part of trustworthiness in qualitative studies can only be judged by the reader, and to really see if the answers would be different in other settings, the studies would have to be conducted again (ibid.). Moreover, the description of the selected population in the studies has to be taken into account to determine whether the results are viable, representative and transferable. . The criterion of another part of trustworthiness is dependability, which refers to the stability of the data (Polit and Beck, 2006) and could be supported in the included studies by strict structural analysis, similarities with the results of earlier studies and by discussing the results with the other colleagues (Graneheim and Lundman, 2004). In the study where a deductive approach was used, it could be argued that the dependability is stronger, as the interviews are compared with a theoretical framework, which in turn has gone through several review and publication processes (Lincoln and Guba, 1985). Careful attention was also paid to understanding how to proceed and create a systematic analysis method in research, by choosing what could be included and keeping the study aim in mind during the process (Polit and Beck, 2006). Finally there is conformability, which

was achieved by discussing the results during the analysis process with the other members of the research team. This is stated by both Mishler (1990) and Burnard (2004) as being important in order to achieve trustworthiness. The use of quotes and the consistency between the answers from various respondents in the different studies can also be seen as a way of demonstrating the conformability of the results (Lincoln and Guba, 1985).

In qualitative research, the pre-understanding of the researcher is of importance, and forms the basis of the knowledge that the researcher already possesses, which in turn becomes the background for the interpretation of the studied phenomenon, according to Creswell (2009) as well as Polit and Beck (2006). In this thesis the pre-understanding of the author is based on a background in nursing, which could be seen as a part that affects the analysis process in all the studies, but especially in three of the included studies, as all the participants in these studies are nursing staff. The pre-understanding of the author is also based on the experience of working many years as a manager in various positions in healthcare contexts. This too can be seen as a part of the researcher's pre-understanding that affects all the studies, but perhaps especially affects the analysis process in the study where healthcare managers were interviewed.

Finally, the issue of limitation of the included studies has to be addressed, and a limitation of the studies in this thesis could be the small sample.

8. Conclusion and future work

This thesis shows that planning for patients' further care after discharge from the hospital is an activity that is not working out as intended and is not taken as seriously as it should be by the nursing staff in homecare and at the hospital. Interpersonal communication, combined with the ability to focus on the patient, might be a success factor where video conferencing would seem to have the potential to enhance the discharge planning process. However, there might be difficulties in the implementation process if the nursing staff involved do not understand why a new working routine is to be implemented, especially when it seems that the staff have difficulty seeing the importance of discharge planning in general. When new working tools are to be implemented, there is need for a considerable amount of preparatory work, both by the nursing staff involved and their managers. There is a need to support both nursing staff in homecare and in hospitals, as well as staff working with social care, to help them understand the importance of collaboration around the patient and the patient's needs in the discharge planning process, and how new solutions, such as video conferencing, might be used in this context.

This thesis has important implications for the implementation process, when video conferencing is implemented in discharge planning. Implementation frameworks, such as the one developed by Nilsen et al. (2010), should be regarded as useful tools and support for communication and for constructive and critical thinking on all organizational levels when new IT solutions are introduced in healthcare contexts. Not only do they support the early exposure and consideration of important factors which may affect the outcome of implementation, they also highlight that there are relationships and states of dependence between those factors which need to be considered. The influence of time (as in "*lack of time*") in the implementation process kept surfacing during the field studies in ways which were closely linked with all the factors in the applied framework. In order to achieve efficient workflows and well-functioning work practices with the support of IT and effective

implementation strategies, the time aspect *always* needs to be considered. It takes time to save time, especially in healthcare contexts where new tools in everyday work need to be meticulously tested, corrected and approved, not least for ethical reasons.

Managers at all levels of the involved healthcare organizations need more information and education about how to support the staff in participating in the design of their own everyday work in the context of ongoing change and implementation of new IT solutions. Also managers themselves need continual organizational support during the implementation process, including planning, start-up, implementation and evaluation. In the case presented in this thesis, the difference between how the involved managers wanted to act in their supportive role and how their supportive role actually was managed was notable. Such differences between the ideal and the actual “management of management” need to be highlighted as important to be aware of and addressed in future implementation processes, through information, communication and education. If there is a difference or gap between how we perceive that we ought to act and how we actually act when faced with planned oncoming change, this gap needs to be made visible and addressed in order to guide actual work practice and evolving new practice with theories, frameworks, and policies. It could also be useful for the professionals to learn and understand how - regarding what to include in the planning sessions and where the planning session ought to take place - different ways of discharge planning can affect the results of the patient’s further care at home, after discharge.

Future work

By redesigning work practices in combination with implementing new IT solutions, discharge planning could be made more accessible and transparent for patients, next of kin and professionals. However, there is need for further studies to obtain a broader understanding of the experiences of the nursing staff in homecare, the patients, the next of kin and the nursing staff at the hospital, and to explore how these experiences can be brought to bear on design-in-use of supportive IT solutions for enhancing discharge planning. Further, the findings from the case presented in

this thesis imply that there is a need to investigate how managers and organisations can be supported when new working routines are to be implemented in the future. It could be of interest to explore further what the implementers' perception of time, or lack of time, actually stands for. According to the implementers who were interviewed in Study II, the time aspect played a crucial role when video conferencing was being implemented. However, lack of time could be seen as an excuse for not accepting the change and the adoption of a new working tool. It could be a handy excuse, because it is difficult to measure and evaluate, and is based on the implementer's personal opinion. Further research concerning perceived lack of time for managing change could for example focus on leadership and how time is perceived and managed on different levels in the organization during the implementation process of IT in healthcare, since the managers and their perception of how to manage time influence the meaning of time as it materializes in work practice for the actors involved in the implementation process. Deeper reflection on the meaning and goals of discharge planning and ways in which video conferencing may improve this activity ought to be incorporated into future research, as well. Patients' and next of kin's experiences of and reflections on video conferencing as a tool in discharge planning also need to be included in future research. At present, there is reason to believe that healthcare staff take for granted that patients would prefer a traditional meeting and not to participate in discharge planning sessions using video conferencing. This assumption needs to be challenged and examined further in order to create broader understandings among all participants in a discharge planning session and to be able to make use of technology in ways that are supportive and enabling for all who are involved in this context. Finally, implementation, designing, and leadership processes need to be studied simultaneously when new working tools are implemented in everyday work, as these processes influence each other.

9. Contribution to research and practice

This thesis fills a knowledge gap by applying an interdisciplinary approach to studying the implementation process of using video conferencing in discharge planning sessions. Healthcare itself is a complex and multi-disciplinary area, and when IT solutions are being introduced in everyday work in healthcare, there is need for developing an understanding of what is going on in a much broader and deeper way than would be possible to achieve by applying a research approach from within a single research discipline.

By taking an interdisciplinary approach in studying the process of implementing video conferencing in discharge planning sessions, it has been possible to make visible the very complexity of situations when IT solutions are being introduced and implemented in a healthcare context with multiple stakeholders involved. When technology is understood as socially constructed in and through work practice, as in the studies presented in this thesis, it becomes evident that new IT solutions in themselves have no built-in ability to solve old problems in healthcare organizations. If the implementation of a new IT solution is going to succeed, there is need for thorough planning preceded by a review of how the process works today. Earlier research on managing change and innovation in large organizations indicates that the involved staff ought to drive this process together with their managers, and that all levels of the organization should be involved and aligned in change management in order to support managers as well as staff throughout the implementation process.

The findings from the studies of managers' and staff's experiences of implementation of a video conferencing system in discharge planning presented in this thesis indicate that by redesigning work practices in combination with implementing new IT solutions, discharge planning could be made more accessible and transparent for patients, next of kin and professionals. There are also important implications on a more general level concerning implementation processes of using new IT solutions in healthcare, where implementation frameworks, such as the one

developed by Nilsen et al. (2010), should be regarded as useful tools and support when IT is introduced in healthcare contexts. Not only do they support early exposure of important factors which may affect the outcome of implementation, they also highlight that there are relationships and states of dependence between those factors which need to be considered.

The thesis highlights the fact that managers on all levels need more information and education about how to support the staff in participating in the design of their own everyday work in the context of ongoing change and implementation of new IT solutions in healthcare. Managers themselves also need support from the organization during the entire implementation process, from the initial reviewing of how work is done today, through change planning and startup to implementation and evaluation. It is suggested that the difference between how managers perceive that they ought to, and want to, act in their supportive role in change and innovation management, and how their supportive role is actually managed, could be an important affecting factor to be aware of when implementing new IT solutions in everyday work in Swedish healthcare. Such differences between the perceived ideal and the actual “management of management” in everyday work need to be highlighted as important to be aware of and address through information, communication and education.

10. Summary in Swedish/Svensk sammanfattning

Introduktion

Studierna i föreliggande avhandling har sin vetenskapliga hemvist inom Tillämpad Hälsoteknik, vilket är ett tvärvetenskapligt ämne i skärningspunkten mellan hälsa och teknik. Inom detta område studeras hur hälsa direkt eller indirekt kan relateras till användandet av teknik. Forskningsområdet i denna avhandling är implementeringen av videoteknik vid samordnad vårdplanering utifrån personalens uppfattningar om samordnad vårdplanering, erfarenheterna från ansvariga för implementeringen samt chefers upplevelse av att leda implementeringen och vad som krävs för design av ett nytt arbetssätt när det gäller samordnad vårdplanering.

Bakgrund

Samordnad vårdplanering i Sverige är omgärdat av både lagar och regler. Avsikten med samordnad vårdplanering är att deltagare från såväl sjukhus, som primärvård och kommun ska medverka tillsammans med patienten och nära anhörig om sådan finns. Vårdplaneringsmötet ska syfta till att skapa en gemensam arena för att diskutera och dela information och på så sätt möjliggöra planeringen för patientens fortsatta vård efter utskrivning. Mötet ska ses som en möjlighet att göra överenskommelser kring vilken instans som ansvarar för aktuell insats kring fortsatt vård, och därmed göra den fortsatta vården säker och trygg för patienten. Överenskommelserna ska skrivas ner och godkännas av både patient och ansvariga vårdgivare. Tidigare forskning har visat på problem och behov av att förändra och förbättra helheten kring samordnad vårdplanering. Några av de belysta problemen är osäkerhet kring när övertagande personal ska ta ansvar fullt ut för patienten efter utskrivning, vilket grundar sig i osäkerhet kring de olika delarna i planeringen. Även brist på tid att medverka vid vårdplaneringen har lyfts upp, där tidsbristen leder till att vårdplaneringen helt uteblir eller hålls via telefonsamtal. I denna avhandling ligger fokus på implementeringen av videokonferenssystem vid samordnad vårdplanering och innefattar planeringsprocess och systematisk introduktion av videokonferenssystemet, vilket handlar om att användarna bestämmer sig för att fullt

ut använda systemet eller inte. Implementeringsprocessen innehåller även en utvärderingsfas.

Studie kontext

2009 initierades ett utvecklingsprojekt av Landstinget i Blekinge som handlade om att möjliggöra samordnad vårdplanering genom användande av video konferenser istället för att enbart ha traditionella möten på sjukhuset. Detta lokala projekt var en del av ett mer övergripande IT-projekt i Landstinget Blekinge som hette ”*Syster Gudruns Fullskalelabb I Blekinge för IT i vård och omsorg*”, vilket i sin tur var en del i den nationella IT-strategin som utformats av Socialdepartementet. De enskilda studierna i denna avhandling har genomförts inom Blekinge län som har strax över 153000 invånare. Länet är indelat i fem kommuner och ett landsting med två fysiska sjukhus samt ett 25-tal vårdcentraler.

Syfte

Det övergripande syftet med studierna i denna avhandling var att studera implementeringsprocessen under och efter införandet av videokonferens system vid samordnad vårdplanering, med huvudfokus kring frågan hur denna nya IT-lösning påverkat varje dags arbete för personalen, samt hur ledningen agerat vid införandet och kring skapande av ett nytt arbetssätt.

- Syfte med studie I var att belysa sjukvårdspersonalens erfarenheter kring samordnad vårdplanering och deras åsikter om att införa videokonferenser vid vårdplaneringen
- Syfte med studie II var att skapa förståelse kring hur olika faktorer påverkar implementeringen av videokonferenssystem vid samordnad vårdplanering utifrån ett utarbetat teoretiskt ramverk
- Syfte med studie III var att undersöka chefernas erfarenheter kring att leda implementeringen av videokonferenssystemet vid samordnad vårdplanering
- Syfte med studie IV var att undersöka involverad sjukvårdspersonals uppfattningar kring vad som krävs för att designa ett nytt arbetssätt när videokonferenssystem används vid samordnad vårdplanering

Metod

Denna avhandling bygger på en kvalitativ forskningsmetodik, där ansatsen för varje enskild studie är vald utifrån respektive forskningsfråga. Fenomenologisk hermeneutik, Innehållsanalys – både deduktivt och induktivt – samt Participatory Action Research (PAR) har använts. I tre av studierna har data samlats in genom intervjuer och i en av studierna har data samlats in genom workshopsdeltagarna.

Resultat

I studie I visade resultaten att det finns behov av förbättringar kring kommunikationen mellan personalen som arbetar inom primärvård och sjukhus vid samordnad vårdplanering samt att personalen inom primärvården behöver mer information kring hur IT-lösningar kan stödja och underlätta deras arbete i vardagen.

Studie II visade att teoretiska ramverk som visar på faktorer som påverkar implementeringsprocesser kan vara värdefulla att känna till och använda vid införande av nya IT-lösningar inom sjukvården.

I studie III visar resultatet att chefer på alla nivåer i organisationen behöver mer stöd samt mer information och utbildning kring att få personalen mera delaktig och involverad genom hela implementeringsprocessen.

Resultaten i Studie IV visar att det finns brist på kunskap och förståelse mellan olika yrkesgruppers arbete kring samordnad vårdplanering. Det saknas också överenskomna gemensamma och välfungerande rutiner samt en gemensam samlingspunkt för att kunna diskutera svårigheter och överenskommelser när nya rutiner behöver skapas.

Slutsatser

När nya arbetssätt och rutiner ska införas på arbetsplatser inom sjukvården finns behov av goda förberedelser, både för personalen och för cheferna. Det finns behov av att stödja personalen för att hjälpa dem att förstå vikten av tvärprofessionellt samarbete kring patienterna och deras behov efter utskrivning, samt hur nya IT-lösningar kan användas för att underlätta denna kommunikation.

Chefer på alla nivåer behöver mer information och utbildning i hur personal ska bli mera delaktig och involveras när nya arbetssätt behöver utvecklas. Cheferna behöver själva också fortlöpande stöd under implementeringsprocesser, både vid kartläggningen av hur arbetet görs i dagsläget, vid planering av den förestående förändringen, vid uppstarten och vid genomförandet, men även med utvärdering av hela processen. Om chefer däremot upplever ett glapp mellan hur de bör agera vid implementering av nya arbetssätt och rutiner och hur de faktiskt verkligen agerar vid implementering, kan detta försvåra implementeringen. Detta glapp skulle kunna överbryggas genom ökad kunskap kring teorier, ramverk och policys, samt användandet av dessa för att skapa bättre förutsättningar vid införande av IT-lösningar i vården.

Slutligen kan det vara användbart för personalen att lära sig och förstå hur – utifrån vad som bör inkluderas i samordnad vårdplanering samt rent fysiskt var planeringen bör äga rum – olika sätt att vårdplanera kan påverka hur den fortsatta vården för patienten fungerar efter utskrivning.

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Appendix: Included Articles

Original Research

Discharge planning: Narrated by nursing staff in primary healthcare and their concerns about using video conferencing in the planning session – An interview study

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Abstract

Background/Objective: This paper sets out to describe experience-based reflections on discharge planning as narrated by nursing staff in primary healthcare, along with their concerns about how the introduction of video conferencing might influence the discharge planning situation.

Methods: Interviews were conducted with nursing staff working at a primary healthcare centre in South East Sweden. Each interview took place was conducted on a one-to-one basis in dialogue form, using open questions and supported by an interview guide. It was then analysed using a phenomenological hermeneutic method. Participants were eligible for the study if they had given their informed consent and if they worked with discharge planning and home-based healthcare provision. In total, 10 of the 30 persons working at the primary healthcare centre participated in the study.

Results: It was found that nursing staff in primary healthcare regarded the planning session as stressful, time-consuming and characterised by a lack of respect between nursing staff at the hospital and nursing staff in primary healthcare. They also described uncertainty and hesitation about using video conferences where patients might probably be the losers and nursing staff the winners.

Conclusions: It is suggested that there is a need for improvement in communication and understanding between nursing staff at the hospital and nursing staff in primary healthcare in order to develop discharge planning. There is also a need for the nursing staff in primary healthcare to obtain more information about how Information Technology (IT) solutions could support their work and help them to find ways to collaborate.

key words

Discharge planning, Healthcare, Information Technology (IT), Nursing staff, Phenomenological hermeneutical, Video conference

1 Introduction

Comprehensive discharge planning in Sweden is governed by rules^[1] and should include participants from the hospital, primary healthcare and the municipality together with the patient and, if possible, the next of kin^[1,2]. However, earlier research^[3] and experience have shown that because of time constraints, many of the discharge sessions that ought to be

carried out do not take place at all and instead phone calls are made between the different stakeholders^[4]. In this context, the discharge planning is seen as an opportunity for the stakeholders involved to meet at the hospital – using a common arena for discussions and sharing information – to plan the further care for the patient^[4]. This is a way to reach agreement on which unit is responsible for each initiative in order to make further care safe and suitable for the patient after discharge^[5]. The discharge planning should also result in a written plan approved by the patient and the stakeholders [4, 5]. Nursing staff at Swedish hospitals state in some qualitative studies^[6, 7] – also reported in a case study from the UK^[8] – that carefully completed discharge planning are complicated to run due to differences in perception and shortcomings in the flow of patient information between the professionals involved. It also seems to be unclear when nursing staff in primary healthcare assume full responsibility for the patient's further care after discharge^[6]. This is related to uncertainty and inequality between the responsibilities of the different parties in the discharge planning process^[9-11], and it has been shown in studies that this leads to frustration and bad feelings about the task^[12, 13]. Length of stay in hospital and the readmission rate are also linked to defective discharge planning^[14]. However, several studies have examined factors required for discharge planning to succeed: a guarantee by nursing staff that they will participate, participation by the patient and sound appraisal of the patient's need for further care after leaving hospital^[1, 6, 9, 15]. The ability to ensure the transfer of information between different stakeholders in an IT-based system is seen as a success factor^[11]. Furthermore, a systematic review study shows that a structured discharge plan tailored to the individual will lead to an increase in patient satisfaction as well as participation by the patient^[14]. On the other hand, in two Swedish interview studies, patients describe discharge planning as an occasion without the opportunity to discuss in private. They also recount experiences of not being listened to, not being able to understand what is going on, not being aware of how decisions are made and not knowing what is going to happen after their discharge from hospital^[6, 16]. In fact, the patient, who is the main figure in the discharge planning process, is not being allowed to participate in the planning session. In one interview study, it is suggested that methods should be implemented for setting goals and identifying patients' needs in order to facilitate and increase patient participation in discharge planning^[17]. A review study that asks if we are delivering best practice states that discharge planning, with interventions to address interdisciplinary communication and combined with post-discharge support, significantly improve health outcomes^[18]. A meta-analysis also reports the same based on statements by older patients with congestive heart failure^[19]. Wong et al found in a qualitative study from Hong Kong that barriers to effective discharge planning were lack of standardised, hospital-wide discharge planning and a policy-driven approach. A further potential barrier was lack of communication and co-ordination among different stakeholders and patients^[20]. Difficulties in discharge planning have been an area of concern for more than 20 years and the challenge of improving the planning session and addressing communication between professions is described in a comparative study based on data from Sweden and the UK^[3]. However, it would seem that problems related to communication among participants in the traditional discharge planning process are examined in many ways^[18-20]. Person-centred nursing, where the nursing staff establish relationships with the patient, and a more modern way of communicating are perhaps needed if progress is to be made in this area^[21]. It might also be important for the nursing staff to see the discharge planning from the patient's point of view and be aware of the patient's future needs. By doing this we can, as described by Rogers, see the patient as a wholeness, where the human being is regarded as a unified whole that is more than and different from the sum of the parts^[22]. A Swedish study describes the need for further innovative work, especially concerning the implementation of IT solutions to support and enhance discharge planning, where IT solutions are seen as untapped potential for improvement^[23]. According to the literature, the ability of the manager to understand and lead organisations in processes of change could also be an important factor when introducing new ways of working and new IT solutions^[24, 25].

There is a whole host of issues being raised concerning discharge planning, where the situation is complex and includes many different parts if it is to work. The aim of this study was to highlight the experience of nursing staff in primary healthcare regarding discharge planning sessions and to pick up on their concerns regarding the use of video conferencing in the discharge planning session.

2 Methods

2.1 Study design

A qualitative interview study was carried out with nursing staff working in a primary healthcare centre in South East Sweden. The interviews focused on the experience of nursing staff in primary healthcare in planning for the further care of patients at home after leaving hospital; communication during the planning sessions between nursing staff working in primary healthcare and nursing staff working at the hospital and, finally, their concerns about introducing an IT solution, consisting of a video conference system, into the discharge planning session. Participants were eligible for the study if they had given their informed consent and if they worked with providing healthcare to patients in their homes and were district nurses, occupational therapists or physiotherapists.

2.2 Data collection

Interviews were conducted during working hours on a one-to-one basis and took place in a small conference room at the healthcare centre. Each interview lasted 30-50 minutes and took the form of a dialogue. The questions were open, with a focus on the main areas covered by the study and with the support of an interview guide. The two main questions were: Could you tell me about your experience of discharge planning sessions? Could you tell me about your concerns regarding the use of video conferencing in the discharge planning session? The supporting questions were: Can you go into more detail? Can you tell me more about this? Can you elaborate? The supporting questions were used to help the informants gain a grasp of their narrations. The interviews were then transcribed verbatim, and an understanding of the text was gained from an initial reading. To gain an overall understanding, the text was read repeatedly by the researcher. The minimum number of participants for our study was 10, which is one-third of the 30 persons working with discharge planning and who have the primary healthcare centre as their place of work. The number should also include at least one person from each of the professional groups working at the primary healthcare centre with discharge planning, i.e. a district nurse, an occupational therapist and a physiotherapist. District nurses accounted for the largest number of persons involved in discharge planning at the centre. Of the 30 employees in question, 19 were district nurses, five were occupational therapists and six were physiotherapists. The nursing staff declared their interest in participating a few days after being informed about the study and the specified number of representatives from the different professional groups was achieved. In total, seven district nurses, two occupational therapists and one physiotherapist participated in the study. The participants had been working in their profession for 3-15 years. They had all worked for more than three years at the care centre. The age range of the participants was 30-65 years. All of them were in the near future about to participate in a distance-based discharge planning session, where a video conference system would be used in the planning sessions. All participants gave their informed consent before participating in the study.

2.3 Data analysis

A qualitative, phenomenological hermeneutical method for interpreting interview texts was used in this study. The method has been elaborated on by Lindseth & Norberg ^[26], who are inspired by the theory of interpretation presented by Paul Ricoer ^[27]. The analysis process includes three phases: naïve reading, structural analysis and comprehensive understanding. The starting point of the analysis is the experiences related by the respondents in the interviews. In the naïve reading, the researcher confines the meaning to the whole of the narration in the text, linked to its context. To gain an overall understanding, the text is read many times by the researcher. The structural analysis of the text validates or invalidates the researcher's overall understanding of the text as acquired in the naïve reading. The structure of the text is in focus in this phase, while units of meaning in the text are being sought that explain what the text is saying along with the meaning of the lived experience. The third phase, comprehensive understanding, is the researcher's final interpretation of the text, and is a movement between interpretation and understanding of the lived experience, based on pre-understanding, literature, the naïve reading and the structural analysis.

2.4 Ethical considerations

To guarantee anonymity, no names, neither real nor fictitious, will be revealed in this article. The participants gave their informed consent before the study was made. The authors have been in contact by phone with the Ethics Committee in South East Sweden (Etikprövningskommittén i Sydost) about the study to observe the ethical aspects. Permission for the study was granted by the Committee and no further application was needed.

3 Results

3.1 Naïve reading

The naïve understanding of this paper presents unified material in which all respondents (irrespective of their profession, age and work experience) narrated their professional experience of discharge planning. At the same time, the respondents talked about their experience of lack of consideration and knowledge on the part of the hospital nursing staff involved in discharge planning. The respondents agreed that discharge planning has received an unwarranted stamp of being a trivial matter due to the many uncertainties and the schism within the context. The respondents also agreed that IT always improves the status of an activity. However, all the respondents felt unsure about how IT would facilitate understanding and communication in the discharge planning process due to the respondents' uncertainty regarding implementation and use of this new working tool. Despite insufficient knowledge about distance-based discharge planning on the part of the respondents they all agreed that in the main, staff would be supported by it while the patient would not benefit as much if discharge planning were to be done on a distance basis using video conferencing.

3.2 Structural analysis

The structural analysis resulted in two themes, each with four sub-themes, which are presented in Table 1. The results are presented and exemplified with quotations. The number following each quotation denotes the interview.

Table 1. Themes and sub-themes identified through structural analysis of the gathered data

<p>Nursing staff in healthcare construed discharge planning as an activity marked by communication problems</p> <ul style="list-style-type: none"> • Experiencing discharge planning as time consuming • Experiencing lack of respect • Experiencing each other's ignorance • Experiencing the insignificance of the discharge planning situation
<p>Feelings were ambiguous about video conferencing and discharge planning</p> <ul style="list-style-type: none"> • Experiencing uncertainty and indifference about using a video conference system in the planning session • Expectations that the professionals will be the winners if a video conference system is used in planning sessions • Expectations that the patient will be the loser if a video conference system is used in planning sessions • Hopes that IT will enhance discharge planning

3.3 Nursing staff in healthcare construed discharge planning as an activity marked by communication problems

The respondents gave the impression that discharge planning represented lived experience of lack of communication, respect and knowledge. As a result, discharge planning has become an insignificant activity.

3.3.1 Experiencing discharge planning as time consuming

Discharge planning is perceived as an activity that takes up too much of the respondents' time. Several of the respondents noted that discharge planning is time-consuming or, as one of them said: "A time thief" (Respondent 4).

All respondents indicated, in one way or another, that discharge planning was stressful:

"I think it can sometimes feel very chaotic inside the hospital, that the nurse can only ... they can only take part for, like, five minutes (...) I get so frustrated!" (Respondent 1)

The hospital nursing staff decide when it is time to prepare a discharge plan for a patient. According to the respondents, they are also the ones who book a time for the discharge planning session. Our respondents felt that discharge planning is arranged at very short notice, and this makes it difficult to fit it into the schedule of the nursing staff in primary healthcare. It is constantly "hurry, hurry!" (Respondent 2)

The respondents thought that the short planning horizon could be attributed to the fact that the nursing staff at the hospital want to send patients home as quickly as possible when they are considered healthy enough to be discharged. The respondents implied that there is an inherent problem in the discharge planning activity and the time it takes.

3.3.2 Experiencing lack of respect

The respondents experienced a lack of respect between the nursing staff at the hospital and the nursing staff in primary healthcare. According to the respondents, nursing staff at the hospital not only show a lack of respect for the time aspect but also a lack of understanding of the daily routine at the primary healthcare centre:

"They have no understanding of what we do, and we forget what it's like at the hospital. It's a delimited world of its own, isn't it? ... Yes, (...) you don't have any understanding whatsoever of the other world" (Respondent 6).

When the nursing staff at the hospital are unprepared for discharge planning, the respondents felt irritated and interpreted this behaviour as an outcome of non-involvement and a lack of interest by the hospital nursing staff. The respondents felt that a lack of interest is also shown towards the patients.

3.3.3 Experiencing each other's ignorance

According to the respondents, a kind of ignorance has emerged, both of each other's professions and of what a discharge plan should include. This ignorance creates misunderstandings and uncertainty. The interviews showed explicitly that nursing staff in healthcare are unsure of what a discharge planning session should include. Sometimes there can be an inventory error in discharge planning and the patient's needs are not listed at the hospital.

"It is vital that you know how to perform discharge planning (...) and that is not always how it is ... Now, you don't think. You just do it" (Respondent 8).

This ignorance is also evident among nursing staff in healthcare and in hospitals, who have minimal knowledge of each other's professions and roles in a discharge planning situation. Furthermore, the respondents indicated that in a discharge planning situation, the nursing staff at the hospital know very little about the patient. The respondents commented that the ignorance displayed in a discharge planning situation "diminishes" the patient (Respondent 8). According to the respondents, the ignorance of each other's profession results in misconceptions about who should do what in a discharge planning situation and about who has the responsibility for a discharged patient.

3.3.4 Experiencing the insignificance of a discharge planning situation

The nursing staff in healthcare found discharge planning to be insignificant due to a lack of knowledge and respect and also due to different views of the time associated with discharge planning. The respondents maintained that discharge planning becomes 'inaccessible' and thus negligible for the staff involved, both in primary healthcare and at hospitals. "It could be an optimal situation but now we don't get all the pieces (...) it is meaningless ..." (Respondent 2). "The experience of meaninglessness results in a 'diffuse' discharge planning situation" (Respondent 3). Hence, the respondents found it meaningless to go to a discharge planning session. They would rather stay at the primary healthcare centre and not

participate at all or send someone else to the session. According to Respondent 1, the information received from the discharge planning session is not always explicit. The respondent explained that sometimes it is necessary to translate the information into something more significant.

Ambiguities and the sense of insignificance of a discharge planning session result in uncertainty when the patient comes home after a hospital stay. It all ends with no one knowing what the patient really needs and therefore a second planning meeting is often necessary. According to the respondents, this increases the sense of meaninglessness of discharge planning at the hospital.

3.4 Feelings were ambiguous about video conferencing and discharge planning

The respondents related lived experiences of discharge planning to the forthcoming change in work practice in which IT would be implemented in this process. The respondents were not convinced that this would work out.

3.4.1 Experiencing uncertainty and indifference about using a video conference system in the planning session

The respondents felt that there have been very few meetings about the implementation of a video conference system in the planning session at the primary healthcare centre. There were no meetings at a later date for those who did not have the time to attend the initial meeting. Due to lack of interest and lack of time, the respondents who had missed the initial meeting had not bothered to obtain information about the ongoing implementation process. Several respondents said they would like to try out the new way of working with planning sessions to “Get it done and then we’ll know” (Respondent 1), while others expressed more reluctance to the idea of an IT solution: “Why do we need to change everything?” (Respondent 4)

3.4.2 Expectations that the professionals will be the winners if a video conference system is used in planning sessions

Although they voiced ambiguous feelings and lack of commitment concerning distance-based discharge planning, the respondents were of the opinion that they would actually be the winners if/when a new way of discharge planning is implemented. Several respondents indicated that the greatest benefit of a video conference system was the time they would save. Respondents also agreed that it was primarily the time it took to drive to the hospital and back that would be saved with distance-based discharge planning. Nevertheless, some respondents noted that the time spent driving together in a car together to and from the hospital was a great opportunity for the staff from primary healthcare and the municipality to discuss the patient and the discharge planning. Several respondents emphasised the problems that would occur when nursing staff in healthcare and nursing staff at the hospital do not meet in person when/if distance-based discharge planning takes place. The respondents did not want to comment on whether there would be an overall gain or loss in that question in that area. However, several respondents pointed out that the staff involved in the planning are bound to communicate if the discharge planning takes place at a distance, since they must all be in place at a certain time to be able to attend the discharge planning session.

3.4.3 Expectations that the patient would be the loser if a video conference system is used in planning sessions

The respondents were convinced that the patient would be the loser if video conferences were used in planning sessions. According to Respondent 7, the new discharge planning process has “lost sight of the patient and the patients are precisely the ones who should come in (...) in this new type of discharge planning”. From a patient perspective, the human touch in the activity would be lost. The respondents expressed concern that:

“Without a face-to-face meeting it will be different (...) and for the patient, it is the patient who should be the centre of our interest... I am very doubtful about it. What is going to happen now...?” (Respondent 7)

3.4.4 Hopes that IT will enhance discharge planning

Many of the respondents were hopeful that IT would provide added status to discharge planning. Respondent 4 pointed out that IT would assign higher status to discharge planning since it is associated with “manliness” and “people do look respectful as soon as you start talking about megabytes and gigabytes, hard disks and processors, don’t they...”

3.5 Comprehensive understanding

The participants’ accounts point out that communication within the context, both in definitions of concepts and within the group, is rather poor. The experiences of this communication are not seen to be important and time is not allocated to make improvements. The participants’ concerns about using video conferencing in the discharge planning session were ambiguous and illustrated their apprehension that nursing staff would be the winners and patients would be the losers if an IT solution were implemented.

4 Discussion

The aim of this study was primarily to highlight the experience of nursing staff in primary healthcare regarding discharge planning. The results of our study indicate that discharge planning sessions as they are carried out at present are perceived as complicated and time-consuming. This seems to be a persistent problem. According to a number of earlier studies, nursing staff state that discharge planning sessions are complicated due to differences in perception and shortcomings in the flow of patient information between the professionals involved^[6-8]. It can be seen that the nursing staff in our study underestimate their need to participate to make discharge planning really work. Even if they know how important the planning session is for further care at home, they do not really see the benefit of their own participation in relation to the time they spend on it. Our study also shows that the respondents experience a lack of respect between them and the nursing staff at the hospital. Spence Laschinger’s^[28] description is similar, and she points out that a positive organisational environment increases the nurses’ perceptions of respect, resulting in positive outcomes for both the nurse and the organisation. This lack of respect could perhaps be connected to ignorance of each other’s professions, about the stakeholders involved and about what a discharge plan should include. Both Robinson & Street^[11] and Nazarko^[13] describe perceived inequality between different parties’ responsibilities within the discharge planning activity and its outcome. This lack of power to negotiate and change an unsatisfactory situation seems to be confirmed by our study. Consequently, none of the respondents expressed any intention of taking steps to reconstruct their own role and gain better control of their own knowledge within the discharge planning process, such as developing and using some kind of checklist to gain a better feeling and overview of what a planning session should include. Nor did they seem to explicitly require given rules from the county council or mention ongoing discussions with the nursing staff at the hospital about what would be proper content for a discharge planning session. Such requirements and discussions could conceivably be part of making discharge planning a less frustrating and more co-constructive, effective and sustainable activity. Our study implies a lack of communication within discharge planning and that there may be insufficient time to improve it. Even if there is a lack of time, there is a need for the nursing staff to prioritise communication. Making communication work ought to be an extremely important issue for the nursing staff who work with discharge planning. Williams & Gossett^[29] argue that communication between patients and nursing staff is a key component of effective healthcare and lays the foundation for a safe and secure nursing environment. McCormack^[21] also underlines the importance of functioning communication and being patient-centred. With this in mind, we argue that it is important for nursing staff who take part in discharge planning to communicate and cultivate interorganisational spaces for sharing professional knowledge, experiences, expectations and concerns in order to sort out and elaborate on new working routines for discharge planning. If implementation of new information and communication technologies can be deliberately attuned to highlighting and providing workable solutions for knowledge-sharing and ongoing negotiations of roles and responsibilities – not only within and between different nursing staff but also including patients and their next of kin as active stakeholders – then new tools such as video conferencing in the discharge planning process might have truly revolutionary potential.

The aim of this study was also to pick up the concerns among nursing staff in primary healthcare about using video conferencing in the discharge planning session. The respondents consider the information they have received about the video conference system to be inadequate and poorly managed. This is confirmed by Holmberg & Tyrstrup^[24], who state that sufficient time and space for discussions is needed when a new way of working is to be successfully implemented at a workplace. It must begin with a successful communication process, including iterative and easy-to-understand information. Furthermore, the respondents all voice concerns that the patient will be left outside the interaction and communication, when video conferencing comes into the picture. However, this study declares that the patient already has difficulties in today's discharge planning due to the dysfunctional interaction between different stakeholders. Efraimsson et al.^[30] state that discharge planning in its present form does not enhance the possibility for the patients to express their personal wishes in a dignified manner. It also interferes with a caring perspective that protects patients' integrity. As Rogers^[22] states, seeing the patient as a wholeness is not possible when the patient's perspective is being overshadowed by dysfunctional interaction. Somewhat surprisingly, the respondents all shared the opinion that they would be the winners and the patients' would be the losers when a video conference system is implemented. None of the respondents reflected on the fact that patients are already not actively involved in the planning session, which makes it seem like an activity that only involves the professionals. The respondents' expectation was that video conferences could save time and improve interaction in discharge planning. They regard the use of technology as positive, while Aanesen et al.^[31] explain to some extent the opposite way in their study that even if appropriate technology is available, there is general resistance to substituting 'warm' hands with 'cold' technology in the healthcare sector. However, Berg^[32] notes that a technical solution will not always be the best solution in a heterogeneous context because of the complexity of the context where the patient, not the technology, should be the focus of communication in a caring context. The results of our study show that even if there might be a poor flow of information about the technology that is being implemented, the respondents believe they will gain from the introduction of video conferences into the discharge planning sessions. With a distance-based solution, the system and the control within the activity must change in order to ensure everyone is equally involved. In an earlier study, Sawyer^[33] argues that IT solutions may strengthen the interaction between different stakeholders, as IT elucidates the need to work out rules and norms in communication. Sawyer^[33] also points out that technical solutions often reveal conflicts and divided opinions. It would seem that rules and norms are a problem that needs to be sorted out between the nursing staff in primary healthcare and the nursing staff at the hospital. Implementing a new discharge planning procedure by using video conferencing will not solve the communication problems, which seem to be quite severe. When implementing new working routines, Holmberg & Tyrstrup^[24], state that one of the most distinctive characteristics of everyday leadership is the need to be event-driven. This, as well as the ability of the leader to understand and lead organisations in challenging processes of change, is seen to be an important success factor^[24, 25]. Accordingly, it might be important for the nursing staff in primary healthcare to gain the active support of their manager in order to be able to introduce discharge planning with a video conference system as a common routine. The ability of professionals to discuss and influence new ways of working can be seen as an underestimated success factor when the focus is on improvement. In combination with understanding why decisions are made to change the work being done, this might also be seen as important.

Methodological considerations

The phenomenological hermeneutic method^[26] used in this study was a suitable method to illustrate the meaning of nursing staff working with lived experiences in healthcare. A deeper understanding was gained as they expressed their thoughts, feelings and concerns about discharge planning, as well as their concerns and expectations about introducing video conferencing in the discharge planning session. The participants recruited for our study were all voluntary and all of them were currently taking part in discharge planning and were in the near future going to participate in discharge planning where a video conference system would be used in the planning sessions. It must be taken into account that the participants may have been persons who were more able to express themselves and were more interested in making their voice heard, than the ones who chose not to participate. The participants are addressed as nursing staff throughout our study, a group in which occupational therapists and physiotherapists are not normally included. Nevertheless, in this study we choose to

address everyone as nursing staff as there were no differences in the respondents' answers due to their professional affiliation.

The researchers' perspectives as nurses, teachers and managers should also be considered an influencing factor in the process. To be aware of the pre-understanding and being able to handle this is important in hermeneutic research [34]. However, a qualitative research interview can be seen as a way of acquiring descriptions from the respondents' life world, followed by an interpretation of the phenomenon and the meaning of the narrations [26]. In qualitative research, trustworthiness, described by both Graneheim & Lundman [35] and Lincoln & Guba [36], is also highlighted as being important to achieve. This could be supported in our study by strict structural analysis, similarities with the results of earlier studies and discussing our results with other colleagues.

5 Conclusion

Planning for patients' further care after discharge from hospital is an activity that is regulated in health and welfare legislation. Despite this, our study indicates that this activity is not working out as intended and it is not taken seriously by the nursing staff in primary healthcare and at the hospital. Interpersonal communication, combined with the ability to focus on the patient, might be a success factor where video conferencing would seem to have the potential to enhance the discharge planning process. However, there might be difficulties in the process if the nursing staff involved do not understand why a new working routine is to be implemented, especially when it seems that the staff have difficulty seeing the importance of discharge planning generally. When new working tools are to be implemented, there is need for accurate preparatory work, both by the nursing staff involved and their managers. Our study implies that there is a need to support both nursing staff in primary healthcare and nursing staff at the hospital to help them understand the importance of collaboration around the patient and the patient's needs in the discharge planning process, and how new solutions, such as video conferencing, might be used in this context.

6 Further research

Preliminary results from the implementation of a video conferencing system in discharge planning indicate that by redesigning work practices in combination with implementing new IT solutions, discharge planning could be made more accessible and transparent for patients, next of kin and professionals. However, the results indicate a need for further studies to obtain a broader understanding of the experiences of the nursing staff in primary healthcare, the patients, the next of kin and the nursing staff at the hospital, and to explore how these experiences can be brought to bear on design-in-use of supportive IT solutions for enhancing discharge planning. At the same time, it may be important to investigate the support of managers and organisations when new working routines are to be implemented in the future.

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Competing interests

The authors declare that they have no competing interests

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Framing the Implementation Process of Video Conferencing in Discharge Planning – According to Staff Experience

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Abstract

Challenges of improving discharge planning have been an area of concern for many years, including problems related to lack of time for professionals to participate. In a county in South East Sweden, video conferencing was implemented in discharge planning sessions to enable distance participation of the professionals. To examine the implementation process, interviews were conducted with the implementers, who were project leaders, discharge planning coordinators in the hospital, and in home-care. The interviews were analysed qualitatively, using directed content analysis with a deductive approach to a theoretical framework that was composed from theories about implementation processes to be suitable for the healthcare sector, consisting of the factors: implementation objects; implementation actions; actors; users; inner context and outer context. The results of this study are consistent with the framework but with the addition of a new dimension – time, i.e. time to prepare; time to understand; time to run through and time to reflect. It is suggested that implementation frameworks are useful when IT is introduced in healthcare. Framing the implementation process supports the exposure of factors and highlights relationships and states of dependence between those factors which may affect implementation.

Key words

Discharge planning, Implementation process, Qualitative study, Video conferencing

Introduction

In comprehensive discharge planning both healthcare professionals' and managers' experience that calls for participation at short notice, along with long driving distance by car to the hospital for the professionals working in home-care, are a problem. Therefor the use of video conferencing in comprehensive discharge planning sessions was introduced in the studied healthcare organisation in 2009. However, the video conferencing system in 2014 is not yet fully implemented and in use, in spite of affirmative decisions about implementation taken by managers and financial help with equipment. In this context the term *comprehensive discharge planning* should be seen as a common arena for stakeholders to participate in the planning of how to attend to a patient's future need of care following discharge from hospital [1]. It is a way to reach agreement between the professionals representing the care provided in hospital and the professionals representing further care after discharge, in order to make further care safe and suitable for the patient after discharge [2]. In addition to the patient, professionals from hospital and home-care, such as occupational therapist; nurse; physiotherapist; physician and social worker, and, if possible, also the next of kin, should participate in discharge planning [3, 4]. Although planning for patients' further care after discharge from hospital is a regulated procedure in Sweden [3], lack of time frequently prevents participation by the professionals who ought to participate [1, 5]. This means that even if discharge planning ought to take place, many discharge planning sessions fail to materialise because of time constraints [1, 6]. An interview study made as a first part of this study about the implementation process using video conferencing in comprehensive discharge planning mentions a lack of respect, between the professionals and for each other's competence, as a factor that has a negative impact on discharge planning [5]. Also difficulty addressing communication between professions involved in the planning session is described as a problem in a survey study from Sweden [7], as well as in a comparative study based on data from Sweden and the UK [6]. Qualitative studies from Hong Kong, the UK and Ireland also describe communication problems as a barrier to improving the discharge planning process [8-10], along with lack of co-ordination of the discharge process, resources and time [9, 10]. The need to improve overall discharge planning is thus a cause for concern in many countries, and has been so for more than 20 years [6]. Earlier research on video conferencing as a new tool to enable professionals in Sweden to participate in discharge planning, highlights certain technical problems but does not detract from the beneficial experience of the time saving achieved through reduced travel and the opportunity for participation by more staff categories [11]. Another study from Sweden, which evaluates the use of videoconferencing in the planning session, states that the main reason for testing the use of video conferencing was the efficiency aspect – saving time [12]. The same study also describes the existence of technical problems as well as the negative effect on communication related to lack of eye contact between the participants [12]. Even a qualitative study on teleconferencing highlights technical difficulties related to awareness issues and coordination in video-mediated communication [13]. On the other hand, literature describes that a discharge planning tool in the electronic health record may improve interdisciplinary communication

[14], and that the use of IT-based systems is a success factor in ensuring and improving communication between different stakeholders [15, 16]. Organizations that encourage knowledge sharing as well as reflections and observation are described to be more successful at innovations and implementation [17]. At the same time, a comparative study dealing with organizational change projects on a more general level reports that implementation and changing to new working routines fails in an estimated 60% of the organizations [18]. This could, according to a systematic review study focusing on the healthcare domain, indicate the need for understanding the healthcare professionals' behaviour and the wide range of factors that can influence their clinical practice [19]. Also a Canadian study in telehealth describes barriers to successful implementation, not only as technical, but also related to issues of culture and trust in that the desired outcomes will be achieved [20]. According to a study of evidence-based policy and practice, certain difficulties in the implementation of new working routines depend to some extent on the overall centralization of guidelines and strategies instead of allowing the guidelines to be developed by the organization itself [21]. This centralization of the development of guidelines and their use should be seen as a shift towards a more top-down perspective of implementation [21]. Earlier research also points out the difficulty for professionals in the healthcare sector to actually accept and apply new working routines if the routines are prepared centrally [22]. Thus, it appears that this systematization of knowledge in connection with implementation of new working routines in the healthcare sector has become a major research field, where previous research in implementation science attempts to define certain overall factors for success [23]. There has subsequently been an openness for exploring the significance of these overall factors, especially concerning the various and shifting contexts in which implementation occurs [23, 24]. The meaning of the word *context* has become particularly significant in implementation science and this makes it difficult to sanction certain general advice on how implementation ought to take place [25]. In an attempt to elucidate and describe the various factors that affect the implementation process in the healthcare sector, a framework was developed by Nilsen et al. (Figure 1) [26]. The framework is inspired by classifications of explanatory factors presented by Rogers [27], Greenhalgh et al. [28], Grol & Wensing [29] and Nutley et al. [30]. The framework describes six components with underlying descriptions that should be ranked and estimated separately from each other.

Component	Description
Implementation object	Attributes of the implementation object with significance for the outcome of the implementation process
Implementation activities	Strategies for influencing potential users to change their practices in accordance with guidelines and best knowledge. The efforts of users and other actors to implement the improved practice
Implementation actors	Actors of importance to the outcome of the implementation process, e.g. patients and decision-makers on different levels
Users	Attributes of the potential and actual users can be understood. Could be individual users and/or groups of users
Inner context	Circumstances and conditions, which affect the outcome of the implementation process, in the operation or organization where the implementation takes place
Outer context	Outer context refers to conditions in society, which affect the implementation process. E. g. Laws, regulations, social norms and demographical circumstances

Figure 1. Framework by Nilsen et al. Reprinted with permission (including approval of the English translation by authors of this paper).

The framework is a compilation of several models and it should be seen as a way to sample different factors that influence the implementation process. It is an attempt to systematize possible affecting factors to the implementation process, and thus improve the possibility to analyse and understand the implementation process and the outcome of the implementation. There is no ranking between the described factors or any grading of which the factor ought to be the most significant. The framework also shows that specific success factors are difficult to identify due to the fact that some aspects seem to be possible to influence although they can be surrounded by structures that limit aspects that are responsive. The framework could be helpful as a platform, to reflect upon and reason about implementation processes in healthcare [26].

In 2014, i.e. more than five years after the start-up, the video conferencing system has not yet been fully implemented. The project leaders and the discharge coordinators in hospital and in home-care consider their personal experience of this quite extended implementation process to be of considerable benefit in acquiring knowledge and understanding of the use of an IT system in discharge planning. In order to evaluate the implementation of video conferencing in the discharge planning session, the framework by Nilsen et al. [26] was used for acquiring knowledge of the process as well as knowledge and understanding of overall implementation processes in the healthcare sector. In the study we also investigated if, according to the framework by Nilsen et al. [26], there are any “unknown” factors in the implementation process that do not fit within the given theoretical framework but would be of interest to elucidate.

Aim

The aim of this study was to gain knowledge and understanding of how the different factors in a framework developed by Nilsen et al. match involved staff's experiences of the implementation process when video conferencing was introduced in the discharge planning session. A further aim was to determine whether, in relation to the applied framework, there were any unknown additional factors that influenced the implementation process.

Research design and methods

The implementation of the video conferencing system was run jointly by the County Council and the Municipalities in the region, and was part of a larger IT-project in the region with focus on developing and testing new solutions to improve healthcare. The leaders of the project were individuals with skills in nursing, IT and project management. Before implementation started, the audio and visual quality of the system was tested. A checklist of how to run a video conference was developed, including a dialogue structure and deciding which participants ought to lead the discussion. When the project leaders felt that the above conditions were fulfilled and the system was ready for use, discharge planning sessions – using the video conferencing system – were run on a pilot ward. When the pilot ward was up and running, all the other wards had the opportunity to follow suit by contacting the project leaders or by the project leaders contacting the persons responsible on the wards. In total there were 2 project leaders, 16 discharge planning coordinators working in hospital and 5 discharge planning coordinators working with home-care, involved in the implementation process. The project leaders were responsible for the overall implementation of the technical solution, and for supporting the work places during the implementation process. The discharge planning coordinators in hospital and in home-care were responsible for the implementation at their own work place, and for the ongoing contact and communication between them and the project leaders.

Data collection

The approach of this study was qualitative and data was collected by means of interviews with 11 participants about their experiences of the implementation process. In total there were 23 implementers, and to achieve a manageable amount of data that also was sufficient enough, we decided to interview half of them. The number should also include at least two from each group of the project leaders, discharge coordinators working in hospital and discharge coordinators working in home-care. The 11 participants were randomly sampled, and all of them chose to participate voluntarily and gave their informed consent for the study. Two of the participants in the study were project leaders (Respondent 1 and 2), six were discharge coordinators working in hospital (Respondent 3-8), and three were discharge planning coordinators working with home-care (Respondent 9-11). Each interview lasted 25-70 minutes and took the form of a dialogue, using an interview guide combined with open questions, about their experience of the process of implementation when a video conferencing system was used in the planning session. The interview guide was used to ensure the questions highlighted the content of the framework developed by Nilsen et al [26], and thus focused on the six components

described above and their underlying descriptions (Figure 1). The main question in the guideline was: Could you tell me about your experience of the implementation process of using video conferences in discharge planning sessions? The supporting questions were as an example: Can you tell me more about this? The supporting questions were used to help the informants gain a grasp of their narrations.

Data analysis

The interviews were recorded and transcribed verbatim. The text was then analysed using qualitative, directed content analysis with a deductive approach [31], with the purpose of evaluating and theory testing [32] the already existing framework developed by Nilsen et al. [26]. The analysis process proceeded by identifying key concepts and variables (Table 1) as initial coding categories [33], to enable understanding of the signification according to the applied framework. Every part of the text in the transcribed interviews was validated to be a part of the framework or to present findings that were new and unknown, as the deductive approach is based on an earlier theory or model and moves from the general to the specific [32]. The findings from directed content analysis offer supporting and non-supporting evidence of a theory [31], which means that data that could not be coded was identified and considered to be either a new key concept, a new variable of a key concept, or a new dimension. During the analysis process a new dimension surfaced that we could not tie in with the other six key concepts and variables in the framework by Nilsen et al. [26].

Table I. Key concepts and variables according to the framework developed by Nilsen et al.

Key concepts	Variables
1.Implementation object	1a.Has its benefits and is a better alternative
	1b.Corresponds to needs and values
	1c.The innovation is sufficiently understandable to implement
	1d.It is possible to conduct tests concerning work/involvement/money
	1e.The benefits are significant or visible
2.Implementation activities	2a.Training and clarifying guidelines and policies
	2b.Strategies to influence norms and values
	2c.Strategies for relations and interchange between people
	2d.Influence practitioners through rewards and incentives
	2e.Strengthen with feedback and reminders
	2f.Technical, organizational and emotional support
3.Implementation actors	3a.Change actors and change leaders of importance
	3b.Opinion leaders with a considered position and a large network
	3c.Influence by being a precursor and role model
	3d.'Gatekeepers' provide their colleagues with information
4.Users	4a.Innovators
	4b.Early adopters
	4c.Early majority
	4d.Late majority
	4e.Laggards
5.Inner context	5a.Organizational culture and work routines
	5b.Organizational structure and size of the organisation
6.Outer context	6a.Circumstances in society that affect the innovativeness

Ethical considerations

To guarantee confidentiality, no names, either real or fictitious, are revealed in this article. The participants gave their informed consent before the study was conducted. Permission for the study was granted by the Ethics Committee in South East Sweden (*Etikprövningskommittén i Sydost*) and no further application was necessary.

Main outcomes and results

On the whole, the findings from the analysis supported the framework by Nilsen et al. [26] and the new dimension *time* brought another dimension to the framework, which ought to be compared and analysed further for in-depth evaluation. This new dimension *time* was seen as an overall aspect that influenced all of the six key concepts in the framework, rather than representing an additional key concept or variable. To demonstrate the dimension *time* as an aspect that affects the outcome of the implementation process, this aspect has been added to the framework developed by Nilsen et al. [26], as is illustrated in Figure 2.

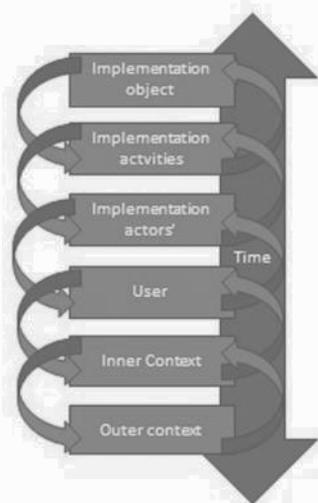


Figure 2. Model for framing the implementation of video conferencing as a tool to improve discharge planning in healthcare. Elaborated from the framework by Nilsen et al.

The results from the analysis are presented in the text with quotations to consolidate the findings.

Implementation object

The attributes of the object discharge planning using videoconferencing, which is a new working routine using an IT system, affect interpersonal meetings in many directions. When the meeting takes place in a virtual way instead of in the hospital, the way of communication is an issue of concern that affects the adoption of videoconferencing, according to the respondents. They state that the communication seems to be more structured and take less time for the discharge planning session, when using videoconferencing.

“There is a great difference in the gain of time... and the meeting, the actual meeting does not take as long as usual, and becomes more structured... that’s the way it is!”
(Respondent 7)

With its relevance for use in everyday work, as a way to save time, videoconferencing has an attribute that is of significance for its adoption by the professionals.

“According to social workers, when a discharge planning session takes place at a distance, the session could be held earlier because their schedules often are full.”
(Respondent 1, implying that discharge planning at a distance saves so much time for those involved that it is easier to find and agree on a time for a distance session)

in people's busy schedules than it is for finding time for a traditional "live" discharge planning session at the hospital.)

Another valuable attribute that affects the adoption of videoconferencing seems to be the ability to make it understandable and possible to manage. The respondents verified that the use of a video conferencing system seems to be a better approach for discharge planning, following suitable testing, and that it will probably be used even more in future.

"We should manage as many as possible this way...because we can avoid delays when home-care staff don't manage to come [to "live" discharge planning sessions at hospital] and thus avoid making patients bed-blockers." (Respondent 4)

Implementation activities

Implementation activities involving information and preparation with the aim of professionals acquiring a greater understanding of video conferencing were of value in the process. The project leaders organized information meetings at different times, for the professionals to ask questions about the videoconferencing system and the use of it. Developing strategies to enhance relationships, communication and the sharing of information, as well as promoting cooperation between professionals, were also stated to be of importance. The respondents experienced the need for common information, and also the need for ongoing support from the responsible persons at those work places which were already up and running with the use of videoconferencing.

"It's not just about introducing [video conferencing]...there's so much more... educating [those involved], creating a good feeling and promoting the whole project." (Respondent 2)

Providing the professionals with technical, organizational and emotional support was a further factor in the implementation process, stated to be needed, by the respondents. The project leaders highlighted the importance of influencing those who acted as role models, thus affecting the norms and values that prevailed at the workplace.

"The discharge planning coordinator, at the time, on the ward was the one who really wanted us to adopt it... a project leader was here to show her the system... perhaps we, the others, were a bit frightened in the beginning..." (Respondent 5)

Implementation actors

The term *implementation actors* refers to decision-makers and leaders on different levels who affect the implementation and adoption of video conferencing in the discharge planning session. All of the respondents in our study had the role of implementation actors, as they were designated to implement the new working tool at their work place. Even the identification of those who actually present their positive opinion about video conferencing, so-called *role models*, seems to have been of value according to the respondents. The respondents stated that the attitudes of

the involved professionals were crucial if the videoconferencing system should succeed in being implemented successfully at a work place.

"It was crucial what kind of person you met... the attitudes of the contacts are so important."

(Respondent 1)

The so-called gatekeepers seem to be important in the identification process, as they could keep abreast of new developments and mediate selected information about the system to their colleagues. Gatekeepers are of great importance for promoting innovations to patients, the healthcare system and society.

"It was one of the project leaders that showed me the system... and we were on track immediately. I think we were early [adopters]... it was so obvious for me to start it out!" (Respondent 4)

Users

Users in this study are the nurses, physiotherapists and occupational therapists in both home-care and hospital as well as care managers from the municipalities in the region, who become users of the new video conferencing system in their daily work, not only as users in the sense of attitudes and knowledge about the video conferencing system but also as adopters of a new innovation, which is reflected in their change in behaviour. There are five types of users described in the framework by Nilssen et al. and they are all identified by the implementers in our study. First there are innovators, who are active and risk takers as well as enterprising. They are characterized by their willingness to try out new ideas, and their positive approach to trying the use of video conferencing.

"Our manager was very positive about the system, and all of us were involved... we often try out new ideas here at our work place..." (Respondent 10)

Early adopters are characterized as being respected opinion formers that show early interest in the videoconferencing system, and easily adopt the new working tool, while the early majority makes carefully considered decisions and interacts with others, before they adopt the videoconferencing system.

"When they saw the benefit [of using the video conferencing system] they became representatives [for it], or whatever you might call it...they became my contacts. And that's when it became possible to push it through." (Respondent 2)

The late majority are sceptical towards innovations and adopt the videoconferencing system as it becomes the social norm, a common and obvious tool in the planning session. Finally, there are laggards, who are more socially isolated and are suspicious about innovations and only adopt when there is no other option than using the videoconferencing system in their daily work.

Inner context

Inner context involves relationships and attributes within and between the work places that were affected by the use of videoconferencing. This inner context was

divided into soft and hard aspects, where soft aspects include which organizational culture prevails in the work place and also what kind of attitudes the professionals have towards adopting new working routines. Also their attitude towards knowledge influences the implementation process.

"It was much easier to implement the system...The managers' attitudes definitely influenced the professionals' attitudes! The way you act in response to changes and new ideas...I have that feeling for sure." (Respondent 2)

"We had an open attitude and discussed what we really thought about the video conferencing" (Respondent 8)

Hard aspects include quantifiable things, such as organizational structure in the clinics and sizes of the work places. Implementers working in small work places describe possibilities to act in different ways than those working in larger ones, concerning information meetings, education and start-up phase.

"There are so many colleagues in our work place... the start-up has been tough and we aren't really managing it well yet." (Respondent 9)

The inner context can also be seen from different levels in an organization, such as the sociologically defined levels of practice referred to as *micro*, *meso* and *macro*, where the *macro* level is the political level, the *meso* level is the management level and the *micro* level in this case is the everyday work practice level of the implementers. These levels affect and are affected by the implementation process in various and sometimes contradictory ways, depending on the culture and the attitudes within and between these levels in the organization. Communication not only within but also between the different levels is important for the implementation process, according to one of the project leaders:

"Every manager within the different levels is very important...because if it [the implementation process] causes trouble somewhere in between these levels, then how will the operational manager know what to do?" (Respondent 2)

Outer context

The term *outer context* is used here in the sense of the particular rules that control responsibilities and which are valid for healthcare and welfare in the regulations governing transmission of information in discharge planning situations. The implementers describe the need of consensus between the involved stakeholders concerning the implementation and use of videoconferencing in the comprehensive discharge planning session and clear mandate pursuant to the responsibility to accomplish the mission.

"If this was a collaboration project where all the local authorities and the county council were participants, the conditions would have been different...with a different mandate to actually carry it through...so to speak" (Respondent 1)

Nowadays, the whole of society uses IT systems. Using video conferencing for discharge planning sessions ought to be accepted and expected as a natural part of on-going organizational change and innovation. However, the fast technological development nowadays in relation to the standards that prevail in health and welfare, can cause video conferencing in discharge planning to be seen as either useful or threatening. The implementers describe the need for shared innovation processes between stakeholders to achieve a new working routine, which is accepted and possible to implement and use by the involved professionals. This ought to be built on common interest and mutual conditions where the liability ratio is investigated and determined.

“One of the Municipalities demanded that we use the video conference system in all the discharge planning sessions, because they wanted it this way!... But we must develop this together...” (Respondent 3)

A new dimension – Time

During the analysis, another dimension surfaced that we could not tie in with the other six components in the framework by Nilsen et al. This was the concept of *time*. The dimension time was further divided into four variables and time to prepare implementation properly, and the understanding that implementation takes time to prepare and carry through, was central for the implementers. The lack of understanding and acknowledgement from management concerning the necessary time required for the implementation process mostly emerged as a feeling from the implementers themselves. None of the implementers talked about this as comments from other colleagues or managers, but rather as an own feeling they had experienced.

“It’s like this the whole time... my work took so long ...You think that...God, have you worked on this for a year and a half without getting any further?...Hell no, when you have to set aside a whole week just to persuade people to allow you to pay a visit...to attend a meeting...no wonder it takes time.” (Respondent 1)

When everything was done in a hurry, there was no time to understand either the process itself or the technology and the new routines. The implementers spoke about the various functions of their role as implementers and that every part of the process took time. Their role was dual in the implementation process, involving both directly enabling the technology to be tested and put to use in the work places, and supporting the users and making them feel secure with the new technology and routines in a more psychological way.

“There has to be a person who works with the process... full time... because it’s not only the introduction...there is so much that follows [after that] ...training, cultivating and sustaining good moods and so on...it takes so much time.” (Respondent 2)

The implementers also talked about lack of time for testing the new video conferencing system. They had a feeling that individual circumstances were hard to

take into account and cater to, even if the work places in fact were starting from very different levels and contexts, and in some cases would have needed more time to actually understand the system and the supposed benefits of it. The possibility to plan and direct the process together was described as valuable, even if it took time.

“First, we were quite negative about the video conferencing system... but after we had tested it in our own way together with the project leader, we changed our minds... It took a while...” (Respondent 11)

Neither was there time for reflection concerning what the use of new technology in the discharge planning sessions might implicate in the way of need for support and additional knowledge about using the equipment, nor was there enough time for evaluation and reformulation of existing work routines and communication processes or to manage a completely new way of working.

“In the beginning I was so nervous that the equipment wouldn’t work ... but now one has become more... confident... I felt more confident after a while, because it took time to get used to it” (Respondent 6)

Discussion

This study showed that the framework developed by Nilsen et al. [26] covering factors that influence the implementation process may be of assistance in analyzing and gaining a better understanding of the rather lengthy process of implementing video conferencing as a tool to facilitate discharge planning in Swedish healthcare. The framework highlights important factors that influence the implementation process, from the start to the outcome of the implementation, which could contribute to a richer understanding about what is needed in order for a new tool to actually be adopted in everyday work practice and to function in an everyday work context. The results of the study indicate that it is of importance that these factors are taken into account when Swedish healthcare introduces a new way of performing well-known tasks in everyday work. The framework by Nilsen et al. [26] is just one model which could be used when examining and gaining a better understanding of the implementation process. There are other theories and models that could have been interesting to use in this kind of study, as well. One example is the normalization process model, which is a model developed by May et al. [34], that focuses on the ways that the implementation of complex interventions is shaped by problems of workability and integration.

This study indicated that there were different kinds of users when video conferencing was implemented, and that they could be categorized depending on the users’ ability to adopt innovations. When users saw the advantages of the new tool, such as saving time when the meetings were more effective than those held in a traditional way, and that the communication seemed to be more structured, it was easier for them to adopt the use of the video conferencing system. At the same time, entire local authorities totally rejected the new video conferencing tool, and refused to even consider to adopt the working tool, or to participate at all. Nilsen et al. [26] point out that there are different kinds of users in the implementation process, including for example

early majority and laggards. According to Rogers [27], the early majority has close contact with earlier adopter categories while laggards are isolated from other adopter categories and emphasize tradition in the way things are made and done. Pinch [35] and Nilsson et al. [36] indicate that tradition in a social context is important to understand and respect when technology is implemented within that context. If a whole local authority is included in an adopter category, discharge planning could be a task in everyday work that is associated with traditions and habits, as well as culture [20], regarding how the task ought to be performed. Even if video conferencing, in respect to the technology itself, is a very good tool and easy to use, the tradition of how the professionals are used to managing the discharge planning sessions affects the implementation process and the adoption of the innovation. Hence, in order to make video conferencing a tool that is used by everyone, implementation processes need to take the social context of tradition and culture into account, as is recommended and exemplified in the implementation framework developed by Nilsen et al.[26].

Inner context also influenced the outcome of the implementation of video conferencing. In this study, the soft side of inner context [28] is explicit with regard to how attitudes to each other and to other work places affect the implementation process. Greenhalgh [28] and Bang [37] describe the organization as a platform for how knowledge is maintained, shared and incorporated into tasks in everyday work. The way an organization deals with knowledge will thus influence the implementation process [15]. In this study, this plays out in the way that the attitudes of managers and co-workers to video conferencing are an important source of guidance regarding the outcome of the implementation process. The way managers discuss the use and implementation of the video conferencing system with their staff might affect the adoption process at their work place. Also the way managers are having a dialogue with other managers about the use and implementation of the video conferencing system can affect the overall implementation process. Even the fact that some kind of rivalry arises between the work places, when there is a massive ongoing process, implementing video conferencing in the discharge planning session, could have a negative effect on implementation and need to be taken into account. When there is rivalry, the sharing and use of relevant knowledge could be ignored, delayed or perhaps even evaded altogether.

The aim of this study was also to explore if there are any unknown aspects, i.e. factors not included in the framework by Nilsen et al. [26] but which we have succeeded in identifying in our interview material, that have influenced (or have been perceived to influence) the implementation process. The dimension *time* was discovered to be an important aspect that affected the outcome of the implementation process, according to our respondents. When a new tool, such as video conferencing in discharge planning, is to be implemented, individuals need time to prepare themselves in order to understand the advantages of the tool. They also need time to test the tool in everyday work and reflect on how it might interplay with existing routines and tasks. In the light of a stressed implementation process and given the vision that information technology (IT) will immediately render healthcare more

effective [38], realistic timetables that include time for reflection and rethinking of work practice are considered a success factor in the implementation process, although this is not always taken into account [39]. To demonstrate the importance of the dimension *time* that will inevitably affect the outcome of the implementation process, this aspect has been added to the framework developed by Nilsen et al. [26] (Figure 2). *Time* influences all the other factors in certain ways and ought to be seen as an aspect that needs to be consistently present in discussions on the outcomes of the implementation process. The model describes the major factors that influence the implementation process. It takes in to account that each factor affects the others in different ways, but the different factors are not graded or prioritized vis-à-vis each other. This interrelationship between the implementation factors is represented by the arrows linking the factors, while the broad arrow indicating the dimension *time* is to be seen as an overall aspect that permeates all of the other factors. This study indicates that individuals need time to prepare and understand the implementation object and the implementation activities. Implementation actors also need time to go through the implementation of new tools on every level of the organization in order to maintain the organization as a knowledge platform. Users need time to reflect on and incorporate the new tool into the inner context along with the regulations of the outer context, such as differences in social norms and the lack of balance between the pace of IT implementation in Swedish healthcare and the laws that regulate implementation. Forsner et al. [17] state that organizations that encourage the staff to reflect on their everyday work are more successful when it comes to implementation of new innovations. Reflection as a concept is known to be one of the most valuable elements when it comes to both individual [40] and organizational learning processes [41]. Schön [42] argues that ‘reflective practice’ can be an important tool in professional learning, where individuals learn from their own professional experiences, which can be seen as the most important source of personal professional development and improvement.

Concerning the aspect of time, it also seems to be important for other levels in the organization to be prepared and informed about the process (which takes time), when a new working routine is to be implemented. In a report from a Canadian study, Balka [43] describes the importance of linking micro, meso and macro aspects together, by discussing micro-level problems in relation to macro contexts, such as provincial policy developments. If there is knowledge and understanding on the political (macro) level of the organization about which factors may influence the implementation of for instance a video conferencing system in the organization, and if this level also understands and acts upon the importance of communicating with the management (meso) level, as well as with the implementers (the micro level), the implementation process could have a better chance to succeed. This understanding and communication should be cultivated in both directions between levels. To achieve this, the everyday leadership on each and every level ought to be of considerable importance. Holmberg & Tyrstrup describe the characteristics of everyday leadership on each level to be based on different parts of the managerial work, as well as the perceived lack of understanding of how managerial work relates to the organizations’ overall working processes. Thus, everyday leadership mostly

consists of sets of activities; interpretations, constant adjustments and formulations of temporary solutions, instead of dealing with the overall processes [44]. This means that the more integrated job of managing, which is to understand and lead organizations in challenging processes of change,[45, 46] seems to be of subordinate significance. But without leaders with the knowledge, ambitions and willingness to see this “bigger picture” of the process, implementations of innovations, whether technical or not, will probably have difficulties to succeed in Swedish healthcare.

Methodological considerations

Content analysis is a widely used qualitative research technique. It has three approaches that should be seen as separate distinct approaches, rather than being a single method [31]. In this study, directed content analysis was used with a deductive approach. The use of this method was chosen to validate, and, if possible, conceptually extend an existing theoretical framework [31]. Directed content analysis is a more structured process than the one used in the conventional approach [47]. The method guides the findings towards already existing codes and categories [31]. In qualitative research trustworthiness, described by Lincoln & Guba [48], is highlighted as an important factor. By using directed content analysis, trustworthiness can be achieved, as the interviews are compared with a theoretical framework, which in turn has gone through several reviews and publication processes. This together with the systematic way of working with the analysis, strengthens the trustworthiness [48]. Besides this, we as authors and colleagues analyse and discuss the different parts of the study, which both Mishler [49] and Burnard [50] state is important in order to achieve trustworthiness. Participation in the study was voluntary and all of the participants recruited for the study were involved in the implementation process where a video conference system was intended to be used in the planning sessions. The use of quotes and the consistency between the answers from various respondents in our study can be seen as a way of demonstrating the reliability of the study results [48].

Conclusion and implications for practice

This study has important implications for the implementation process, when video conferencing is implemented in discharge planning. Implementation frameworks, such as the one developed by Nilsen et al., need to be regarded as useful guidelines when IT is introduced in healthcare contexts. Not only do they expose important factors which may affect the outcome of implementation, they also highlight that there are relationships and states of dependence between those factors which need to be considered. In this study, the influence of time (as in “*lack of time*”) in the implementation process kept surfacing in ways which were closely linked with all the factors in the applied framework. Finally, the issue of time became so ubiquitous in the empirical material that we decided to visualize it as a backbone in an adapted version of the framework model (Figure 2). In order to achieve efficient workflows and well-functioning work practices with IT and effective implementation strategies, the time aspect *always* needs to be considered. It takes time to save time, especially in healthcare contexts where new tools in everyday work need to be meticulously tested, corrected and approved, not least for ethical reasons.

Future research

The study we have presented was carried out as a way to document and analyse experiences from implementers and thus gain a better understanding of an extended implementation process of a video conferencing system in discharge planning in a Swedish healthcare context, an implementation process that after five years is still on-going. In future research it could be of interest to study a similar implementation process in relation to the framework by Nilsen et al. [26] and compare this framework to other existing models, such as the normalization process model by May et al. [34], to evaluate and elaborate the understanding of implementation processes in healthcare.

In our study, we found that time - an “unknown factor” in the applied framework by Nilsen et al. [26] – was an issue that kept surfacing in its very absence (“*lack of time*” in the interviews, and invisibility of time as an important factor in the implementation evaluation framework). It could be of interest to explore further what the implementers’ perception of time, or lack of time, really stands for. According to the implementers, the time aspect played a crucial role when video conferencing was being implemented. However, lack of time could be seen as an excuse for not accepting the change and the adoption of a new working tool. It could be a handy excuse, because it is hard to measure and evaluate, and is based on the implementer’s personal opinion. Further research could also focus on leadership and how time is managed on different levels in the organization, during the implementation process of IT in healthcare, because the leaders and their perception of how to manage time, influence the meaning of time as it materializes in work practice for the actors in the implementation process and between the managers and leaders on different levels of the organisation as well.

Deeper reflection on the meaning and goals of discharge planning and ways in which video conferencing may improve this activity ought to be incorporated into future research, as well. Patients’ and next of kin’s reflections on video conferencing as a tool in discharge planning also need to be included in future research. At present, there is reason to presume that healthcare staff takes for granted that patients would prefer a traditional meeting and not to participate in discharge planning sessions using video conference. This assumption needs to be challenged and examined further to create broader understandings among all participants in a discharge planning session and to be able to make use of technology in ways that are supportive and enabling for all who are involved in this context.

Declaration of interest

The authors report no conflicts of interest

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Healthcare managers' experiences of leading the implementation of video conferencing in discharge planning meetings – An interview study

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ABSTRACT

This paper sets out to describe healthcare managers' experiences of leading the implementation of video conferencing in discharge planning meetings as a new tool in everyday practice. Data collection took place through individual interviews and the interviews were analysed using qualitative content analysis with an inductive approach. The results from this study indicate that managers identified two distinct leadership perspectives when they reflected on the implementation process. On one hand, they described a desired way of leading the implementation process and communicating about the upcoming change; understanding and securing support for decisions as well as ensuring sufficient time is available throughout the change process. On the other hand, they described how they perceived that the implementation process was actually taking place, highlighting the lack of planning and preparation as well as the need for support and to be supportive and having the courage to adopt and lead the implementation. It is suggested that managers at all levels require more information and training in how to encourage staff to become involved in designing their everyday work and in the implementation process. Managers, too, need ongoing organisational support for good leadership throughout the implementation of video conferencing in discharge planning meetings, including planning, start-up, implementation and evaluation.

KEY WORDS

Discharge planning, Implementation, Leadership, Management, Qualitative study

Introduction

Although the use of video conferencing in discharge planning meetings was implemented in a region in south-east Sweden in 2009 it was still not being used to its full extent in 2014 [1]. Video conferencing as a working tool was an attempt to enable the discharge planning meetings to actually take place, as experience and the literature confirmed that many planning meetings fail to take place due to time constraints [2-4]. Another reason for implementing video conferencing in discharge planning meetings was the desire to give many different professionals the opportunity to participate, which could be made possible if video meetings were held and there was no need to travel [3]. Discharge planning is a meeting that takes place before patients are discharged from hospital and return home in order to determine if any form of healthcare or social activity is needed that the patients are unable to manage alone. The purpose of the meeting is to determine the needs and decide who should be involved in meeting those needs [5].

According to Fayol [6], the function of a manager is to forecast, plan, organise, command, co-ordinate and control in order to achieve goals. Thus management practice (and ostensibly, theory) should contribute to organisations being run more efficiently and effectively [7]. The fact that leadership matters in implementation is argued in a randomised controlled study from the USA [8], as well as in a qualitative study from Finland, which describes a model for leading change in healthcare that includes three dimensions – leading relationships, leading processes and leading a culture – which nursing managers need to take into account during the change process [9]. There have also been research studies carried out concerning the relationship between the different activities in planned organisational change implementation and managers' leadership competencies, as described in an interview study from the UK [10]. Where it is argued that leadership competencies might differentially influence the key activities in planned organisational change. Leadership in change implementation is considered a complex, multi-dimensional task made up of different activities, such as communicating, mobilising and evaluating [10]. A systematic review study highlights the role of leaders in providing a structure for the innovation process; the authors argue that in the early stages of innovation leaders may need to adopt an explorative approach to problem construction and ideation in which knowledge and ideas are broadly integrated [11]. In larger organisations with different managerial levels, the task of providing a structure for the innovation process takes on another dimension due to the need for alignment between different management levels [8]. The leaders on all levels are important for the innovation process; the more a workplace perceives that its leader supports a new strategy, the greater the likelihood that the new strategy will be implemented at that workplace [8]. The more co-workers see that leaders, aggregated across hierarchical levels, support a new strategy, the greater the likelihood that the new strategy will be implemented [8]. Co-workers in an organisation need to understand why behaviour and routines need to change for the new strategy to be adopted [12], and during implementation leaders need to mobilise co-workers to accept and adopt proposed change initiatives in their daily routines [12]. This means that leaders who are more transaction-oriented may be more successful in promoting innovation when they work towards the refinement of existing products and increase the efficiency of existing practices and processes [11]. Together with supportive leadership, effectiveness across organisational levels [13] and hierarchical levels

influences the implementation of new systems, [8] with leaders adopting dual roles and providing support to teams and individuals as they turn their efforts into innovations and focus on innovation when managing the organisation's goals and activities [11, 14]. Literature describes three key activities in planned organisational change implementation: communication, mobilisation and evaluation. Communication refers to the activities leaders carry out to convince themselves and their co-workers about what needs to be done and to share their vision of the change with their co-workers. Mobilisation refers to the actions leaders take to encourage co-workers to support and accept the new working routines. Evaluation refers to the measures leaders take to monitor and assess the impact of implementation and organisational changes [10]. This three key activities model is based on Lewin's three-phase model of change: the unfreezing phase, where existing values and frameworks need to be phased out, the change phase, and the freezing phase, where new frameworks are trusted [15]. Bearing in mind that leaders manage the strategic innovation goals and activities in their organisations as part of a top-down process [11], it appears to be important to examine the process in which leaders influence change by examining the power of the context, together with its contingency factors [16, 17], and the "mechanisms of action" of the process through which leaders affect organisational performance [18]. In the light of these leadership aspects and the impact the cited research implies they may have on innovation and change in organisations, it was deemed of value to examine the implementation of video conferencing in discharge planning meetings based on the experiences of the managers involved in leading the change processes.

Aim

The aim of this study was to describe healthcare managers' experiences of leading the implementation of video conferencing in discharge planning meetings.

Research design and methods

The implementation of video conferencing in discharge planning meetings was part of a larger IT project in a region in south-east Sweden where the focus was on developing and testing new IT solutions to improve healthcare [3]. Project leaders and discharge planning coordinators were responsible for implementing the technical solution, while managers from the County Council and the five municipalities in the region were responsible for managing the decisions that were reached about the implementation process, not only from an overall perspective but also in terms of the technical solution and the new working routine. To investigate the managers' experiences of leading the implementation of video conferencing as a new working tool in discharge planning meetings, a qualitative interview study was carried out with managers working in the region in question. Interviews were used as a means of gaining insight into the managers' particular circumstances [19, 20]. Participants who were eligible for the study were chosen based on their managerial role at various levels in the organisation, and the fact that they were in some way responsible for the implementation of video conferencing in discharge planning meetings.

Data collection

Data were collected through interviews with ten healthcare managers. Two of the managers were on an overall level (macro level) in the organisation, three were on an

intermediate level (meso level) and five were first-line managers (micro level). The managers working on an overall level are responsible for leading long-term work and reaching decisions far removed from the everyday healthcare workplaces. Managers working on the intermediate level are responsible for leading communication and the preparation of these overall decisions together with the first-line managers, who are in turn responsible for the execution of the decisions that are reached. The interviews lasted 45-65 minutes and took the form of a dialogue. The questions were open and had one main question, followed by three supporting questions, which helped the informants to gain a grasp of their narrations. The main question was: Would you like to tell me about your experience as a manager when leading implementation of video conferencing in discharge planning meetings? The supporting questions were: Can you go into more detail? Can you tell me more about this? Can you elaborate?

Data analysis

The interviews were recorded and transcribed verbatim. The text was thereafter analysed using qualitative content analysis [21] with an inductive approach [22]. Content analysis was considered suitable, as it is a method used to analyse written and verbal communication systematically, focusing on differences between and similarities within parts of the text, which then results in categories and/or themes [21]. The analysis was performed in several steps. Firstly, the interviews were read through to gain a sense of the whole. In this step, the tape recordings were also listened to in order to validate the text. The analysis process moved on to dividing the text into units of meaning, which are words, sentences and paragraphs related to each other by content. The units of meaning were then condensed while still preserving their core and they were coded. This was done by means of open coding and by writing notes and headings in the text while reading it. The written material was read through again and as many headings as deemed necessary were written in the margins for the purpose of describing all relevant aspects of the content [22]. After the open coding, the codes were compared for differences and similarities and arranged into six categories, where a category answering the question “what” can be identified as a thread throughout the codes and refers mainly to a descriptive level of content [21]. Creating categories is the core feature of qualitative content analysis and the purpose was to provide a means of describing the phenomenon in order to improve understanding and generate knowledge [23]. When formulating categories, the interpretation of the text determined which items should be placed into the same category and subcategories with similar events grouped as categories [21]. In the next step, arriving at an interpretation of the underlying meaning, each category was read, critically analysed and compared, and two sub-themes were identified as describing an aspect of the structure of experience. These themes answer the question “how” and can be identified as a thread of underlying meaning running through codes and categories on an interpretative level [21]. After several discussions among the research team, the categories and the sub-themes were further abstracted and a theme was formulated. The categories, sub-themes and theme are presented in Table 1.

Ethical considerations

To guarantee confidentiality, no names are revealed in this article. The participants gave their informed consent before the study was conducted. Permission for the study

was granted by the Ethics Committee in South East Sweden (*Etikprövningskommittén i Sydost*) and no further application was necessary.

Results

The results from this study show that the managers were ambiguous about their way of leading the implementation of video conferencing in discharge planning meetings. They swayed between *knowing the right way but also being lost* by stating that there was a shift from knowing what form leading the implementation process ought to take and feeling lost in their attempt to find a suitable way of leading implementation according to what was really expected of them. The sub-themes were identified as **a desired way of leading** and **an actual way of leading** when implementing video conferencing in discharge planning meetings. The desired way of leading was described in terms of what the implementation process ought to include and what the managers ought to be doing as the persons responsible for the process. It was described as a desired condition and had nothing to do with how the process actually took place. All the participants described this in one way or another, although it was mostly the managers on the overall level or on the intermediate level that spoke in terms of a desired way of supporting the implementation process. The actual way of leading was described in terms of how the implementation process really took place when implementing video conferencing in discharge planning meetings. All the participants described this but it was mostly the first-line managers that described themselves in terms of the way they actually led the implementation. The sub-categories, categories, sub-themes and theme are presented in [Table 1] below. The results are then presented in text form, supported by quotations from the participants.

Table 1

Categories, Sub-themes and Theme revealed during the analysis process

Categories	Sub-themes	Theme
Communicate about the upcoming change	The desired way of leading	Knowing the right way but also being lost
Understand and secure support for the decisions		
Sufficient time throughout the change		
Lack of planning and preparation	The actual way of leading	
Need for support and to be supportive		
Courage to adopt and lead the implementation		

A desired way of leading the implementation process

The participants described a desired way of working with implementation processes in general as well as the specific process of implementing video conferencing in discharge planning meetings. The desired way of leading the process was described from an

overall perspective and was spoken of in terms of “best practice” and how it should take place. The desired way of leading the process was not linked to the position held by the managers and it was described in a more general way, using the words “it” or “they”.

- Communicate about the upcoming change

In the desired way of leading, the participants described the need to communicate at all levels in the organisation about what the implementation should include and how to plan and work through the process, as a way of creating trust and confidence in the upcoming implementation. Communicating about the implementation of the video conferencing system, in the desired way of leading, ensured that everybody perceived that they were made part of the process, and being part of the process also helped them to understand why implementation must take place.

“Understand it... and communicate it, then see your part of the chain” (Respondent 7).

They also stated that as managers they should communicate the fact that using video conferencing has already been decided upon. They should state that everyone is in the change process together and that everyone must work to make it possible and they must really work well together. They described the need to encourage the staff to reflect and ask questions within their team at the workplace about the discharge planning process and how they should learn about and manage this new working tool.

“You shouldn't start by saying that now everyone should begin using video conferencing. Instead they should start by asking... how the discharge planning meetings are managed at present.” (Respondent 2).

There was also a perceived need to generate motivation and a positive approach to change among the staff, despite the fact that they are struggling to change their habits and make video conferencing an efficient tool in their work. There is a need to communicate that changing habits can be difficult to manage for the staff involved as they would need to step out of their comfort zone and change the way they are used to dealing with discharge planning.

“Staff are breaking the patterns for how they meet each other in real life with this new system... Meeting each other in real life is mostly a pleasant experience. It's about shaping a new structure” (Respondent 4).

- Understand and secure support for the decisions

The managers described the need for clarifications during the decision-making process to make it clear to all concerned what was going to happen. If implementation of the video conferencing system is to succeed, the decision must be confirmed at every management level in the organisation, and no level should be sidestepped if clearance in the decision-making process is to be achieved. The managers used the word *loyalty* and *“the need for loyalty to reach decisions”* (Respondent 10), when they were talking about understanding decisions in the organisation. However, in contrast to this need for loyalty, they also spoke about a tradition in the organisation of not following decisions, even if they were taken at a higher managerial level. *“There is a strong tradition of ‘options’ in the organisation... this is definitely a decision but I don't think we should do this kind of thing”* (Respondent 3).

In the desired way of leading, the managers described the need for everyone involved to understand why the decision to implement video conferencing in the discharge planning meetings was taken. Understanding was important at every level to ensure that the decision did not take the wrong direction or go missing in some part of the organisation. *"To make the implementation process a success, it must be confirmed at all managerial levels"* (Respondent 9).

- Sufficient time throughout the change

The respondents demonstrated an awareness of the fact that change processes take time and that there was a need for the managers themselves to have sufficient time to formulate a plan for the implementation of video conferencing in discharge planning meetings. *"One has to start somewhere...but if it could have been managed in a structured way...starting with good planning...a lot of things would have been easier"* (Respondent 5).

They also described the staff needing sufficient time throughout the implementation process and having the opportunity to learn how to use the video conferencing system and to try it out with support from the IT department. *"Staff need time... to prepare before the start"* (Respondent 7). The managers stated that the implementation process would be easier and quicker if the video conferencing system was used on a small scale first and then gradually increased to full scale, as this would help the staff to become acquainted with the video conferencing system as a tool in discharge planning meetings.

"You should try it out in one place first...and provide the right opportunities and enough time...then when it is found to be working there, it [the implementation process] can proceed..." (Respondent 1).

An actual way of leading the implementation process

The participants stated that when video conferencing was implemented in discharge planning meetings, the way they worked with the implementation process was based on their experience as a manager in their particular position. Their way of leading was described in a directed way and was spoken of in terms of "the job" and how it proceeded. It was linked directly to the position held by the managers, using the words "I" or "we".

- Lack of planning and preparation

The respondents stated that the planning process prior to implementing video conferencing in discharge planning meetings was too short following the implementation decisions that were suddenly taken from one day to the next. *"I would prefer more planning time...to reach this common objective"* (Respondent 1).

There was no preparation and planning for how the video conferencing system would work together with the existing daily routines and software. Rapid decisions together with little support for the decision made the implementation process difficult to plan and work through.

"We should have been part of this earlier... then I would have been better prepared" (Respondent 9).

The respondents perceived the difficulties as being a result of the decision and a lack of scope to provide the staff with a good foundation by supporting the implementation process to ensure its success.

“Everybody must be part of the planning process and must act according to the plan. I think it is extremely important... that everybody is a part of the process” (Respondent 5).

- Need for support and to be supportive

The respondents described the need for the implementation process to be an opportunity to learn more along the way; an opportunity to practise using the video conferencing system. As manager and the person leading the implementation process, they stated that practising and facing the problems that arose and supporting the staff were helpful. *“It was really important in my role as leader to provide support... we must try to deal with the problems.”* (Respondent 8).

They also expressed a need for common structures when implementing video conferencing in discharge planning meetings. When the directions were vague and there was no support from their manager on how to conduct the implementation process, the respondents felt uncertain about their leadership and how to proceed in the implementation process.

“My manager didn’t really know... and that made it difficult for me to know how to manage the implementation” (Respondent 6).

The respondents felt frustrated when some of the members of their management team did not support the implementation process, which created uncertainty about the decision among many of the ward staff. They expressed a need for a common structure in both planning and implementation in order to create a stable process. The respondents had to be clear in their decision process, even if in the overall decision process they did not feel certain about what was going to happen with regard to implementation of video conferencing in discharge planning meetings.

“I had to do it that way... I had to put my foot down and tell the staff - just do it! ... Even if other first-line managers didn’t do it” (Respondent 7).

- Courage to adopt and lead the implementation

The respondents cited difficulty acting as manager in the implementation of video conferencing in discharge planning meetings due to uncertainty about how to adopt the decision and uncertainty about how to lead the implementation.

“There was a decision from top management that we should do it... but as I see it... it hasn’t been adopted at the lower management levels” (Respondent 4).

They also spoke about the difficulties they experienced in their leadership, as the general decision from management did not include a clear list to intermediate managers and first-line managers of what they should actually work with and stating what would be the best way to start and follow the process. This led to the managers acting on their own initiative and creating an implementation process of their own. *“I had to find my own way...because my own manager wasn’t sure about what to do and he didn’t really state how we ought to run the implementation”* (Respondent 10).

The respondents expressed a need for courage to ask questions at different levels during the implementation process, both among the staff and among other managers, to develop a feeling that the implementation process was ongoing and that it was an implementation that a large number of people were working in unison to bring about.

“What should we do? When should we do it? Who should do it? These are the most common questions... yet they didn’t exist in the way that they should” (Respondent 9).

Discussion

This study showed a difference between how the respondents wanted to act when leading the implementation process and how they actually acted. This was stated as *knowing the right way but also being lost*, where the managers expressed a division: between on the one hand knowing what leading the implementation process ought to be like and on the other hand being lost when attempting to find a suitable way of leading the implementation in line with what was really expected of them. This could be seen as related to what Denti [24] states, i.e. that leaders are faced with the fundamental challenge of dealing with dual roles based on the top-down and bottom-up roles they have been assigned when managing innovation goals and strategies. In our study this conflict, when leaders become caught between the top-down role and the bottom-up role, leads to frustration, as the respondents needed to be clear in their decision-making process, even if they did not feel that the overall decision-making process was clear with regard to what was going to happen regarding the implementation of video conferencing in discharge planning meetings. There was a decision that video conferencing needed to be implemented and yet there was uncertainty about how to adopt the decision and thus uncertainty about what their role as manager really ought to include. Both Ahrenfelt [25] and Sellgren [26] state that the role a leader plays is a reflection of the leadership style a person represents and that leadership style is related to the personal value system of the individual and is shaped by his or her culture, society and life experience [26]. Battilana [10] partly confirms our results, stating that the role of leadership in change implementation is considered to be a complex, multi-dimensional task composed of different activities, and the manager's leadership competencies could differentially influence the key activities involved in planned organisational change. But the role a leader plays should also depend on how the organisation deals with organisational change and, as Salmela et al. [9] state, there is a need for leaders to receive guidance and know what is expected of them during a structural change process. With parallel roles in actual and desired leadership when implementing video conferencing in discharge planning meetings, the participants did not know how the implementation should proceed and what it was supposed to be like in relation to generally accepted models of organisational change, such as for instance Lewin's three phases [15], i.e. unfrozen, changed and frozen.

The participants in our study addressed the kind of organisational culture they are part of, reflecting on the word *loyalty*, and *“the need for loyalty towards decisions that have been reached”*, when talking about decision processes. However, in contrast to the need for loyalty, they also spoke about a tradition that exists in the organisation of not following decisions even if they were reached at a higher managerial level; a tradition of not following decisions that do not appeal to their own belief about how to deal with a particular subject or area. The choice made by an individual not to follow the decisions made by each of the leaders at different levels and positions could explain to some extent why implementation of video conferencing in discharge planning meetings became such a protracted process. When the organisational culture legitimizes and allows for the interpretation that participating in a change process is a choice for the individual leader, there is a risk that decisions made at a higher managerial level will fail to materialise. Our results are supported by Salmela et al. [9], who state that the culture of an organisation must always be taken into account in change processes. As

change requires learning, and continuous learning is the cornerstone of the organisational culture when dealing with change processes, it is vital that ideas, opinions, values and the change in thought patterns are shaped if genuine change is to come about. Our findings are also supported by Denti [11], who states that the relationship between leadership and innovation would appear to be strongest in organisations that have a culture that supports innovation and establishing this creative knowledge environment is the responsibility of the leader. In addition to organisational culture, Nilsen et al. [27] state that habits are a critical variable in understanding change in clinical practice, as healthcare professionals' daily practice is predominantly habitual and therefore difficult to change through implementation interventions [27].

The participants in our study stated that they wanted sufficient time to prepare for the change, as in the case when implementing video conferencing in discharge planning meetings. They expressed an awareness that change processes take time and that there was a need for the managers to have sufficient time to formulate a plan for the implementation of video conferencing in discharge planning meetings as well as a need for the staff to be given sufficient time throughout the implementation process to learn how to use the video conferencing system and to have an opportunity to try it out. In an earlier study [1], a framework developed by Nilsen et al. [28], consisting of classifications of the explanatory factors that influence the implementation processes described by Rogers [29], Greenhalgh et al. [30], Grol [31] and Nutley et al. [32], has been studied using a deductive approach and applying the framework on the project leaders' and discharge planning coordinators' experiences of implementing video conferencing in discharge planning meetings. The framework was elaborated on and a new dimension was added [Figure 1] by explicitly articulating the concept of time, i.e. time to prepare; time to understand; time to run through and time to reflect [1].

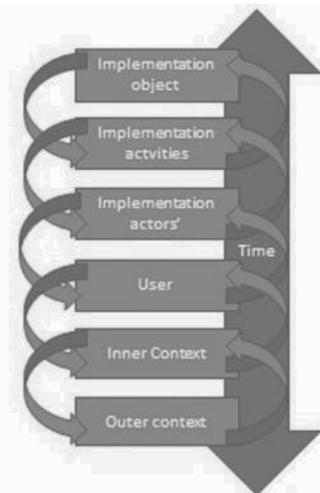


Figure 1.
Model by Hofflander et al. for framing the implementation of video conferencing as a means of improving discharge planning in healthcare.

The elaborated framework supports the results from this study, as the time dimension also influences the managers who are leading the implementation process. The

perception of time as an influencing parameter in change processes is also highlighted by Ahrenfelt [25], who describes organisational power as being hierarchically allocated, which means that everybody in an organisation has a problem when the highest managerial level in an organisation does not understand that change processes and development processes take time and cannot simply be ordered off-the-shelf.

The results also revealed two very different perspectives that were applied when the participants talked about ways of leading the implementation process. When the managers described *a desired way of leading*, they distanced themselves, using the words “it” or “they”. This desired way of leading was not referred to as being linked to the managers’ positions; rather, it was described in general terms. It was mostly the managers on the overall level (macro level) or intermediate level (meso level) who spoke in terms of a desired way of supporting the implementation process. When the managers described *the actual way of leading*, they referred to themselves as being present, using the words “I” or “we”. This actual way of leading was linked directly to the position held by the manager and was mostly expressed by first-line managers (micro level). According to Balka [33], it is important to attempt to link up micro, meso and macro aspects and create knowledge and understanding about these levels within the organisation. It is also important to be aware of the way these different levels could affect the managers’ perception of their leadership approach, depending on their understanding of their position and the responsibility and authority that ensue from the position, by discussing micro-level problems in relation to meso and macro contexts [33]. If there is knowledge and understanding in the organisation about these different levels and management roles, the implementation of new IT solutions and new ways of working in the organisation could have a better chance of success. This understanding and communication needs to be cultivated in both directions between the different levels [33].

The respondents also experienced a need to communicate the fact that using video conferencing is a decision that has been taken and clarify that everyone is a party to that decision. Both managers and staff need to contribute to making the change process possible and ensuring a good outcome. They described the need to encourage the staff to reflect and ask themselves questions about the discharge planning process and to learn how to use and manage this new working tool. According to Yukl [34], effective leaders are concerned about people and production and they attach importance to both relational and task orientations. Implementation is more likely to be successful if it is knowledgeably managed in a reflective and supportive way throughout the organisation

Methodological considerations

Content analysis is a widely used qualitative research technique and includes three approaches that should be seen as separate, distinct approaches rather than a single method [35]. In this study, conventional content analysis with an inductive approach was used. The purpose of using conventional content analysis was to provide descriptions of a phenomenon, to increase understanding and to generate knowledge about the research area [21]. In qualitative research, trustworthiness, as described by Lincoln & Guba [36], is highlighted as a key factor. When using conventional content analysis, trustworthiness can be achieved by working systematically during the analysis [36]. The fact that several researchers were involved in the study, and that as authors and colleagues we also analyse and discuss the different parts of the study, reinforces

the trustworthiness, which both Mishler [37] and Burnard [38] state is important.. Participation in the study was voluntary and the participants recruited for the study were involved in implementation of video conferencing in discharge planning meetings. The use of quotes and the consistency between the answers from various respondents in our study can be seen as a demonstration of the reliability of the study results [36].

Conclusion and implications for practice

It is suggested that managers at all levels need more information and training in how to support and encourage the staff to participate in the design of their everyday work, as well as in the implementation processes. Managers themselves also need continuous support throughout the entire implementation process, including planning, start-up, implementation and evaluation. It is suggested that the difference between how the respondents wanted to act in their supportive role and how their supportive role was actually managed is highlighted and addressed in the information and training. If there is a marked gap between how we feel we ought to act and how we actually act, this gap needs to be acknowledged, addressed and diminished in order to support the implementation in everyday work in nursing practice of the visions and intentions that are being articulated in theories, frameworks and policies.

Further research

More studies need to be conducted in order to develop a richer understanding of the difference between how leaders in healthcare organisations say they want to act and how they actually act. The notion of time, mainly articulated in the negative, as perceived lack of time, needs to be examined in order to understand its importance in implementation frameworks. Finally, implementation, design and leadership processes need to be studied simultaneously when new working tools are implemented in daily practice. The processes influence each other and the way leaders think they ought to act and how they actually act in relation to tools and co-workers.

Declaration of interest

The authors report no conflicts of interest

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Professionals' perceptions of how to design a new best practice for using video conferencing in discharge planning

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ABSTRACT

This paper sets out to describe the reflections of professionals working with discharge planning about what is needed in order to develop a new best practice concerning use of video conferencing in discharge planning sessions. A Participatory Action Research approach was used in the study. Data collection and analysis were carried out through workshop discussions with professionals responsible for discharge planning in hospital and in home-care.

The results indicate that the professionals experienced lack of knowledge and understanding about each other's everyday work and that absence of well-functioning common routines was obstructing the process. They experienced a lack of common arenas to enable discussions, negotiations and working agreements when the discharge planning process is changing over time. It is suggested that it might be useful for the professionals to gain more and deeper understanding of each other's everyday work. It could also be useful for the professionals to learn and understand how different ways of discharge planning - regarding issues such as what to include in the planning sessions and where the planning session ought to take place - can affect the results of the patient's further care at home, after discharge.

KEY WORDS

Best practice, Design, Discharge planning, Participatory Action Research

INTRODUCTION

Hospital nurses relate in several studies that discharge planning sessions are complicated and time-consuming, which prevents the in-depth planning that is needed to render a well-functioning care after discharge [1, 2]. In an attempt to raise the quality of discharge planning by enabling the discharge sessions to actually take place, the use of video conferencing in the planning session has been implemented in a region in southeast Sweden [3]. The decision to implement video conferencing was based on the success factors that had been identified for discharge planning sessions, described in earlier studies as a guarantee for both patient and home-care professionals to participate and also for a solid appraisal of the patient's need of further care after leaving hospital [4-6]. But when video conferencing is introduced and used in the planning session, the everyday work practice is no longer what it used to be, and there is need for the work process as well as the daily routines to be changed. It becomes necessary to consider the design of a new best practice in everyday work [7].

An important part for managers when a new best practice is being introduced in a work place, is the need for critical thinking. Achieving change of work practices is not only about the adoption of a guideline developed through the lens of evidence-based knowledge and craving elaborate individual competence to critically appraise the research behind the guideline in order to make sense of it [8]. An alternative or complementary approach, according to Rycroft-Malone [9], could be that a few individuals at different levels of the organization could lead the work of developing evidence-based practice. By applying standards and clear policies [10], and evidence-based interventions inspired by best practice guidelines [11], along with communication between healthcare workers, patient and family, ongoing support after discharge [12] and interdisciplinary communication and coordination across various healthcare parties [13], the outcomes for the patient's further care and wellbeing can be influenced [11]. In a randomized trial study published in 2009, one of the most important issues when discharge fails is described as lack of standardization, along with difficulty of ensuring patient data to be transferred to those responsible for the patient's further care after discharge [14]. When discharge planning sessions fail, this results in a bad start-up for the patient's further care at home, which in turn often leads to readmission to hospital [15]. Thus, as shown in a review study from 2009, there appears to be an inverse correlation between the quality of discharge planning and readmissions to hospital [12].

A patient-centered model of care for hospital discharge highlights that patients have a desire for information and for being involved in their further care [16]. But according to a study from 2003 concerning consumer feedback on discharge planning, there is a gap between patients' expectations and the actual result after discharge, concerning resources provided to help the patients to be better prepared for discharge and everyday life thereafter [17]. Social workers and hospital nurses usually focus on the immediate discharge needs rather than on long-term goals and plans for the patient [18]. Hospital-based nurses who have not practiced in home-care may also find it difficult to anticipate patients' needs during the transition from hospital to home and thereafter [19]. A qualitative study from 2002 describes that hospital discharge plans "fall short of the mark" because they fail to reflect on the complexity of the patient's

further needs after discharge, by focusing primarily on basic needs rather than on the reality of the patient's recovery [6].

To improve the planning-session, there is need for education in discharge-planning methods, such as design of realistic scenarios and practical advice about communication and documentation [20]. Another requirement which has been expressed is the involvement of a discharge planning case manager that could collaborate with community-based providers, which could reduce unmet treatment needs for the patient after discharge [21], as well as reduce readmissions to hospital [22]. The complexity of the discharge planning process, addressing social, cultural, organizational and technological perspectives, highlights the need for more cooperation between the different healthcare professions involved [23] as well as the need for enhanced adoption of information and communication technologies as a means of achieving more effective information sharing and communication between different healthcare professionals, but also with the patient and patient's family/informal caretaker(s) [23]. A Swedish participatory action research study from 2009 describes the need to see the planning situation as a system including three interconnected areas: patient participation; practitioners' competence and organizational support [24]. All of these three areas need to be developed, but to achieve a change when the issue is complex, there is a need to clarify the core problem and be aware of and see the bigger picture and not just the parts [24, 25]. To better understand and elaborate this bigger picture as the healthcare-relevant context within which discharge planning takes place, it would be of importance, together with the involved professionals, to take a deeper look into the parts that include practitioners' competence, their understanding of each other's roles and their ability to achieve organizational support, when video conferencing is being introduced and used in the discharge planning sessions.

AIM

The aim of this study was to investigate involved professional healthcare workers' perceptions of how to design a new best practice, when video conferencing is implemented in the discharge planning sessions in collaboration between multiple different healthcare professionals in hospital and in home-care.

METHODS

Sample and procedure

This study has a Participatory Action Research (PAR) approach, with in total thirteen professionals working in hospital and in home-care that were involved in discharge planning. All of the participants were working either in one of the hospitals in a County Council in southeast Sweden, or in the health- and welfare sector in the Municipality where the hospital was geographically located in the region. Participants were chosen to be part of the research based on their expert role in discharge planning and were aware of the ongoing implementation process of using video conferencing in discharge planning. PAR is a systematic, participatory approach used in this case to enable professionals to extend their understanding of problems or issues regarding discharge planning using video conferencing, as well as to formulate actions that are directed towards the resolution of those problems or issues [26]. PAR is also an

approach to develop research and knowledge - rather than simply a research method - where practitioners and researchers work systematically together, with the aim of exploring issues that directly concern practice [27]. The methodology is based on a conviction of an inherent equality, where the knowledge and experience of the different participants is equally valuable [27]. Traditionally, research is seen as an activity performed by people from different research institutes, with research as part of their profession. Researchers, too, are practitioners [33], but traditionally, researchers have mainly done research on practitioners in other domains than their own. However, collaboration between researchers and practitioners is a way of closing the gap between research and practice [28]. All formulations of PAR have in common the idea that research and action should be done 'with' people and not 'on' or 'for' people [29]. This is, we argue, a viable approach for studying socio-technical systems, i.e. for gaining knowledge and enhanced understanding of technology in use – or not in use (though seemingly available and useful for a particular work practice) [30].

In this study, data was collected through workshop sessions where participants and one of the researchers (MH) got together for in all five sessions. The role of the researcher was to lead the workshop sessions and to facilitate the process by participating in, as well as offering support during, the different phases - *look, think and act phases* - in PAR [26]. The *looking phase* involves gathering of relevant information and defining the research question; the *thinking phase* involves exploration of the information, together with analyzing and theorization; finally, the *acting phase* involves planning of the desired change, and also of how to implement and evaluate it [26].

At the first workshop session, the *looking phase*, first-line managers and their discharge planning coordinators working in hospital and in home-care got together with the purpose of discussing the results of an evaluative survey [Figure 1], where 70 nurses working in hospital and in home care in the region had graded propositions about what characterized a non-functioning discharge planning session in traditional discharge planning. The discharge planning coordinators working in hospital were all nurses, but in home-care the coordinators were one nurse and one occupational therapist. The purpose was also to discuss the relevance of the evaluation results in relation to the implementation of video conferencing in the discharge planning sessions. Additionally, the aim was to define a relevant research question (or questions) to address in the next step of our research, where we intended to have more of a focus on the implementation process itself.

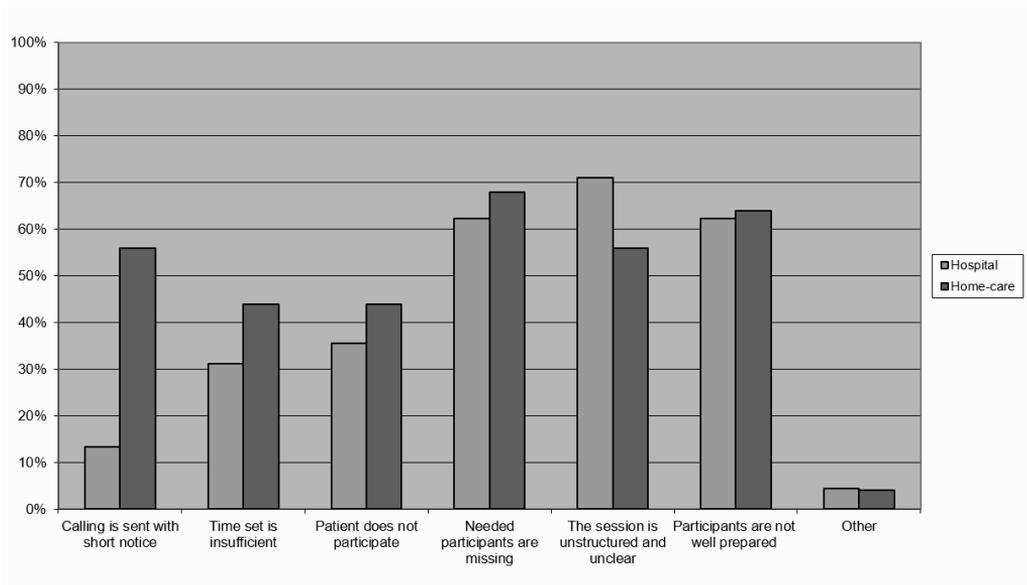


Figure 1
Compilation of answers to a questionnaire about nurses' perceptions of what characterizes a non-functioning discharge planning session (n=70)

The participants of the first workshop found that there were similarities but also differences between the answers from nurses working in hospital and nurses working in home-care. The statements “Needed participants are missing” and “Participants are not well prepared” were evaluated similarly by both groups. However, there were distinct differences between the groups concerning the statements “Calling is sent with short notice” and “Time set is insufficient”. When the results from the questionnaire were discussed in the group, the workshop participants agreed that these answers matched their own experiences well. Through the discussions, the participants gained a more comprehensive understanding of why there were similarities and differences between nurses working in hospital and nurses working in home-care concerning perceptions of what characterizes a non-functioning discharge planning session. The differences between the two groups’ answers could largely be traced to dissimilar roles in the discharge planning process and what the nurses perceived as necessary in their respective role. They were convinced that those similarities and differences reflected longstanding perceptions that had influenced the discharge planning process further back in time as well as the ongoing implementation of video conferencing in the discharge planning sessions. The participants also discussed and agreed on the opinion that representatives from all the different professionals that participate in discharge planning sessions ought to take part in this kind of work, to collaborate and thus create a more comprehensive and shared view of how the discharge planning sessions ought to be developed from now onwards. The *looking phase* resulted in the research question: How can a new work practice be designed, to enable well-functioning discharge planning using video conferencing in discharge planning sessions?

The participants of the first workshop session reflected on what mixture of professionals that ought to be aimed for in the next workshop in order to constructively address the research question they had formulated. The participants came to the conclusion that the following workshop composition ought to be multi-professional and include one participant from every contributing group of professionals, with representatives from both hospital and home-care, with the addition of a social worker from the municipality. None of the managers were going to participate in the workshops in the next phase, as they do not work with discharge planning in their everyday work. This resulted in a reconstruction of the group, where three of the participants from the first workshop continued to be a part of the following workshop group. Those three were one nurse working in hospital, and one nurse and one occupational therapist working in home-care. The new participants who joined the group for the next phase were chosen by the first-line managers that participated in the first workshop. They were chosen based on their experience and knowledge about discharge planning.

Data analysis

In PAR, data collection and data analysis go hand and hand during the entire PAR process. However, it was mainly during the four following workshop sessions that participatory data analysis took place, with the aim of developing a shared, comprehensive understanding and enhanced knowledge about the discharge planning process and how it is perceived by professionals from hospital and from home-care who are involved in it in their everyday work practice. The aim was that the data analysis as well as whatever it resulted in should evolve out of the PAR process and be seen as meaningful and making sense for the healthcare professionals who were involved in the study as well as for us researchers.

In the following four workshop sessions, there were seven participants; one nurse, one occupational therapist and one physiotherapist working in hospital, one nurse, one occupational therapist and one physiotherapist working in home-care and a social worker from the municipality. The *looking phase* now shifted over to the next phase, *the thinking phase*, which consisted of three workshops. In the first *thinking phase* workshop, the new participants in the group were informed by the others and by the group leader (MH) about the research question that had been decided on and what it was based on, i.e. the results from the survey and the discussions from the *looking phase* workshop.

After the information about the previous workshop had been shared in the new group, the participants started to discuss and reflect on how to design a new best practice, in order to enable well-functioning discharge planning using video conferencing in discharge planning sessions. This discussion was thus based on 70 nurses' perceptions of characteristics of non-functioning discharge planning, according to the answers gathered via the survey, and on the discussions during the *looking phase* workshop, but also included new contributions from both the participants who had taken part in the first workshop and from the new participants in the group. The group leader took notes during the session and also encouraged the participants to share their perceptions with each other during the first *thinking phase* workshop. In the second *thinking phase* workshop, the workshop participants were invited to write down their perceptions and

thoughts on how a new work practice ought to be designed, to enable well-functioning discharge planning using video conferencing in discharge planning sessions. They were instructed to write individually, on separate Post-it notes [Figure 2]. One by one the notes were then presented and pasted on the wall by the participants, to allow all workshop members to take part of each other's notes and to take part in the analysis. During the remaining time of the second *thinking phase* workshop, we discussed and reflected on the content of the Post-it notes. Through reflective dialogues, facilitated by the participating researcher, the workshop members then started to sort the Post-it notes into common themes. The group leader (MH) asked naïve questions about issues that the workshop members possibly took for granted, to invite the participants to questioning their perceptions of the current best practice in discharge planning. After these discussions and critical questions among the workshop members, the Post-it notes were sorted to construct main categories and subcategories.



Figure 2
Post-it notes from a workshop designing a new best practice using video conferencing

At the following workshop, the third in the *thinking phase*, the group leader had made a compilation of the discussions and the sorting of the Post-it notes from the previous workshop as a starting point for the continued work in the group. This session was used to review the results from the previous workshop, allowing the participants to reflect once again on the material and to make desired corrections [Figure 3]. The participants indicated that they felt satisfied with the results from the previous workshop and no further changes or additions were made to the categories. The remaining time of this third *thinking phase* workshop was used to discuss the content of the main categories and subcategories. The group leader (MH) took notes during the discussion and put additional questions when necessary to strengthen the analysis process.

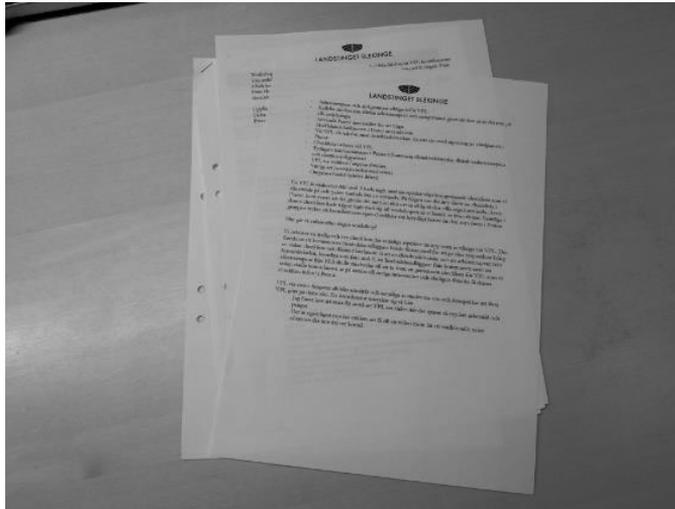


Figure 3
Compilation of the Post-it notes discussions used during the second workshop in the thinking phase

By collaborating with the workshop participants in both gathering of the data, and in the analysis phase, the intention was to enable reflection together on the discharge planning process in general and on the design of a new best practice, using video conferencing, in particular [27].

RESULTS

The workshop participants reflected on and came to conclusions about what was needed in order to design a new best practice using video conferencing in the discharge planning sessions. The needs could be seen as a cohesive system consisting of two main categories, with underlying subcategories [Table 1].

Table 1 Main categories and subcategories

<i>Need of knowledge and competence</i>	<i>Need of support</i>
<ul style="list-style-type: none"> • <i>Comprehension of the discharge planning process</i> • <i>Comprehension of the information supplying systems' usability</i> • <i>Comprehension of the wanted information from colleagues</i> • <i>Comprehension of other professionals' roles in the process</i> 	<ul style="list-style-type: none"> • <i>Support and understanding from managers</i> • <i>Guidelines elaborated by involved professionals that are correct and easy to follow</i> • <i>Ability to discuss with colleagues about what went wrong</i> • <i>Trust in the video conferencing system to actually work as intended</i>

Need of knowledge and competence

The first main category, *need of knowledge and competence*, encompasses the professionals' perceptions of what they need in an interpersonal and inter-professional way, based on their different knowledge and competence levels, in order to design a new best practice using video conferencing in discharge planning. The overall perception was that there was both a lack of knowledge and understanding about the different professionals' roles in discharge planning sessions, and a lack of understanding about what kind of competence the different professionals could contribute with to the process when designing a new best practice. This was stated to be the case not only in discharge planning using video conferencing, but in discharge planning sessions overall, which the participants felt has been proved over the years of practicing discharge planning sessions in a traditional way.

- *Comprehension of the discharge planning process*

The participants discussed the overall understanding of what the discharge planning process involves and the importance of all involved professionals being aware of the purpose of the comprehensive discharge planning process. The word "comprehensive" seems to disappear when professionals talk about the process in everyday practice, which is reflected in the work practice of discharge planning itself as well. The lack of comprehension about the overall process makes the discharge planning session an activity where involved professionals are only doing their own part without asking for anyone else's perception and knowledge about the overall process. The session is perceived as something that just has to be done, with short notice and without any possible reflection on when and where the planning session should take place and how the use of video conferencing as a communication tool could enhance the comprehension of the overall discharge planning process.

- *Comprehension of the information supplying systems' usability*

The workshop participants expressed the importance of the reliability, functionality and usability of the supportive IT systems. This concerns the information supplying system, used to transmit data between hospital, home-care and social welfare before, during and after the discharge planning session, as well as the video conferencing system. The information supplying system that is used to transmit information between the involved professionals through recorded data about the patients has been in use for more than 10 years without reaching its full potential, judging by the fact that involved professionals from home-care seldom read carefully the data provided in the system by the professionals from hospital. The reason for not reading the information carefully before the discharge planning session is, according to our workshop participants, the voluminous amount of data provided and also the fact that the discharge planning session is perceived as including the same information narrated in a more concise and to-the-point format during the session by the professionals from hospital. It is actually a way of saving time – you don't read beforehand what someone after all will be telling you in a meeting. The design of a new best practice has to take in to consideration the establishing of a routine for recorded data to be read by involved professionals before the discharge planning session takes place, regardless

of whether the session is held in the hospital or via a virtual meeting using video conferencing.

- *Comprehension of the wanted information from colleagues*

The workshop participants discussed what kind of information the discharge planning should include in order to support achieving a shared understanding between the involved professionals about the patient's further care after discharge. The current way of providing information through the information supplying system, used to transmit recorded data between hospital, home-care and social welfare before, during, and after the discharge planning sessions, is mainly made use of in ways that each person decides for him- or herself. There is no effective agreement or commitment between involved professionals working in hospital and professionals working in home-care about what kind of information that would be valuable to transmit. Thus, the workshop participants recollected that some kind of decision about the information transmission had been made many years ago, without involvement from professionals working in everyday discharge planning practice. This lack of involvement of the professionals who are doing the actual work implies that even when all the needed information is recorded and seemingly available as a common knowledge base for everyone involved in the discharge planning session, this does not always ensure well-informed decisions during the discharge planning session and safe and secure care for the patients after discharge. The workshop participants shared the perception that each professional group needs to determine what kind of information that is of importance to be transmitted throughout the whole discharge planning process – before, during and after the discharge planning session – to enable the design of a new best practice.

- *Comprehension of other professionals' roles in the process*

The workshop participants expressed that there was a lack of comprehension about the different roles that different professions play in the discharge planning process. For example, a nurse working in hospital might have very little knowledge about the work environment and work situation in home-care and vice-versa. A similar lack of comprehension of the roles of the other professions involved was expressed, and all of the workshop participants acknowledged their ignorance about the everyday work practices of the involved healthcare professionals working in other contexts than their own, despite the fact that they were expected to share information across different professions during the discharge planning session in order to take well-grounded decisions concerning the continuing care and wellbeing of the patient who was being discharged. This ignorance about each other's roles and work practices was obstructive for the discharge planning process, due to feelings of uncertainty about what kind of continuing care that would be possible to establish outside the hospital. The participants also expressed the need for a designated coordinator to be responsible for the discharge planning session, based on their experiences of that the process otherwise has a tendency to not include all the necessary steps and information-sharing, which makes the session inconclusive and the definition of what further care will be needed after discharge unclear.

Need of support

The other main category, *need of support*, encompasses the professionals' perceptions of what they needed in the way of support, to design a new best practice using video conferencing in discharge planning.

The overall perception of the workshop participants was the need of support and understanding from managers on different levels in handling the different perspectives of the discharge planning process, as well as the need of reliable support from the IT department concerning the functions of the video conferencing system. This main category was expressed as of central importance not only in discharge planning using video conferencing, but in discharge planning sessions in general, which has been proved during the years practicing discharge planning sessions in a traditional way.

- *Support and understanding from managers*

The workshop participants discussed the perceived absence of definitions and clarity from their managers about what the discharge planning sessions, using video conferencing in the planning session, actually should contain and in what way or ways there should be a new routine to follow. There was a perceived need of understanding from their managers about the complexity that surrounds the discharge planning process using video conferencing, a complexity which has increased due to the short length of stay in hospital nowadays and the fact that patients leaving hospital are in poor condition needing many different arrangements in their home. The calls for participation in discharge planning are sent with short notice from hospital professionals to home-care professionals. This requires both fast decisions and fast actions by the involved professionals, which should be considered when creating a new best practice using video conferencing in discharge planning sessions.

- *Guidelines elaborated by involved professionals that are correct and easy to follow*

The workshop participants expressed the absence of common rules and approved guidelines as aggravating and of obstruction for the discharge planning process in general. There are of course common rules and different forms of legislation that regulate the overall discharge planning process, but these mainly regulate the cost allocation between involved stakeholders and are perceived as difficult to follow and to fully understand. The workshop participants expressed the need for involved professionals to actually collaborate and create some kind of guideline that is correct, based on what is decided upon to be the most important data to transmit before, during and after the discharge planning session takes place. This would mean that only what is deemed as necessary and relevant information for the discharge planning process is transmitted in the information supplying system, or at least that such information is highlighted, which in turn would enable and encourage involved professionals to actually read the information before the session and thus be better prepared, instead of waiting for a colleague from the hospital healthcare team to share the information orally during the discharge planning session.

- *Ability to discuss with colleagues about what went wrong*

The workshop participants discussed the need of common arenas, being able to meet and discuss if something after all goes wrong in the discharge planning process. The only time a meeting between involved professionals is held at present, is when there are severe problems. This is the case both when it comes to traditional discharge planning sessions and concerning the ones using video conferencing. When there are severe problems, even managers and medical directors are involved. The professionals expressed the need for another, alternative kind of meetings,, to enable discussions, negotiations and agreements in a collaborative way, based on the experience that one or more minor problems could be recurrent and in need of being addressed by involved professionals and solved on a common arena. Also the fact that the discharge planning process is changing over time, should indicate the need of inter-professional meetings, where representatives from both hospital and home-care are able to participate, with a focus on the overall discharge planning process using video conferencing.

- *Trust in the video conferencing system to actually work as intended*

The workshop participants expressed the need of reliability of the video conferencing system to actually work as intended in everyday practice, to make this way of performing discharge planning sessions a natural and well performing way of doing the work. Based on previous and current experience of problems with the audio and video functions, the participants expressed it as embarrassing towards patients and next of kin to participate in a session with poor technical functionality. Feelings of uncertainty about the video conferencing system were described as a recurring experience that influenced the discharge planning session in a negative way. The participants stated that the video conferencing system basically is – or is at least intended to be – easy to use, but that it creates anxiety among the participating professionals, as it is unreliable in its functionality. If a new best practice using video conferencing in the discharge planning session should be designed and successfully implemented, the video conferencing system itself has to be perceived as reliable and well-functioning.

In the final, fifth workshop, which shifted from the *thinking phase* into the *acting phase*, , the participants summarized the results from the earlier workshops and created an action plan in order to present this as a suggestion for further work to their managers in charge. The participants had no formal assignment from management to plan or implement the desired changes at this time, therefor they handled the suggested changes and action plan over to their managers for further action.

Ethical considerations

To guarantee anonymity, no names are revealed in the study. The participants gave their written voluntary and informed consent after receiving information about the study at an initial information meeting. Participants were guaranteed anonymity and the possibility to conclude their participation at any time if they decided they did not want to continue participating in the study. The authors had a dialogue via the internet with the Ethic committee in the Southeast part of Sweden (Etikprövningskommittén i Sydost) about the study so as to correctly observe and manage all the ethical aspects.

Permission was thereafter given for the study by the committee without any further application.

DISCUSSION

The study showed that the participants perceived a lack of knowledge and competence in an interpersonal and inter-professional way, based on their different knowledge and competence levels, about the overall discharge planning process, as well as a lack of knowledge and understanding about what kinds of specific competence the different professionals could contribute with to the discharge planning process and to designing a new best practice using video conferencing in the discharge planning sessions. This was expressed not only concerning discharge planning using video conferencing, but in discharge planning sessions overall, which has been proved during the years of practicing discharge planning sessions in a traditional way. Both Morris et al. [31] and Hofflander et al. [7] describe in their studies that nursing staff experienced need for improvement in both communication and understanding between nursing staff working in hospitals and in home-care in order to develop the discharge planning process. This need for improvement in both communication and understanding between professionals was also described by our participants as lack of comprehension about the different roles that each professional plays in the discharge planning process. The participants expressed that professionals working in hospital had very little knowledge about the workplace circumstances in home-care and vice-versa. This was expressed as ignorance about the everyday practice of healthcare professionals working in a different context than one's own. This unclear understanding of each other's competencies, work practices, work situations, resources and staff roles is stated by Wong et al. [13] as a barrier to effective discharge planning. Efraimsson [4], and also Hegney [32], describe similar findings as uncertainty and inequality between different parties' responsibility within the discharge planning process, which creates frustration and troubled feelings among nurses working in hospital and in home-care.

The results of our study also show that involved professionals clearly perceive the need to collaborate and create some kind of standardized guideline that they can all commit to and follow, based on what is decided to be the most important information that needs to be transmitted before, during and after the discharge planning session takes place. This would enable that only what is perceived as necessary and relevant information is transmitted (or at least highlighted) in the information supplying system, which in turn would enable and encourage involved professionals to actually read the information beforehand and thus be better prepared, instead of waiting for a colleague to relate the information orally during the discharge planning session. Similarly, Han et al. [10] and Hill Bailey et al. [11] describe the perceived need to apply standards and clear policies and interventions inspired by best practice guidelines. It would be valuable for the patient's further care if relevant and correct data is transmitted during the discharge planning process, in order to provide safe and secure care after discharge. Damiani et al. [33] takes the argument for this even further, stating that using a standardized discharge-planning method, followed by a long-term care plan, even reduces mortality rates. The participants in our study also expressed the need of a designated coordinator to be responsible for the discharge

planning session, based on their experiences that the process otherwise has a tendency to not include all the necessary steps and information-sharing, which makes the session inconclusive and the definition of what further care will be needed after discharge unclear. As early as in 1998, Nazarko [34] describes the role of a discharge coordinator as a way of improving discharge planning. However, this role in itself is not enough to solve the multifaceted challenge of discharge planning.

The results further indicate need of support and trust in the video conferencing system. The video conferencing system is described as important to achieve well-functioning discharge planning, but feelings of uncertainty about the video conferencing system were described as a recurring experience that influenced the discharge planning session in a negative way. The participants stated that the video conferencing system was – or was intended to be – easy to use, but that it created anxiety among the participating professionals, as it was unreliable in its functions. If a new best practice using video conferencing in the discharge planning session is to be designed, the video conferencing system itself needs to be reliable and well-functioning. This need of a robust, reliable and well-functioning video conferencing system to be used in discharge planning, has been stated in earlier research by both Helgesson et al. [35] and Grundén [36], which supports our results in this study.

Furthermore, the information supplying system that is used to transmit recorded data between the involved professionals has been in use for more than 10 years, without reaching its full potential, judging by the fact that involved professionals from home-care seldom read carefully the data provided in the system by the professionals from hospital. The reason for not reading the information carefully before, and in preparation for, the discharge planning session, is according to our workshop participants, the voluminous amount of data that is recorded and also the fact that the discharge planning session includes the same information narrated in a more concise and to-the-point format by the professionals from hospital. It is actually a way of saving time – you don't read what someone after all will be telling you in summary during the meeting.

It is interesting to note that in discussing professionals' perceptions of how to design a new best practice using video conferencing in discharge planning, it is not the new technology *per se* that is in the foreground in the discussions, but rather the work system and the work practices into which the video conferencing is being introduced and implemented. Nor is the existing information system, which has been in use for more than 10 years, discussed as a serious problem *per se*; rather it is how it is used or not used, and how it is understood or not understood as a support in and for practice, that surfaces as obstructive to good practice in discharge planning. What needs redesigning from within, it seems, is the socio-technical system, with a focus on the activity of discharge planning and the emergent practices of using video conferencing in this context [37]. And what the participants in our study underlined was the lack of a shared arena for ongoing discussions, negotiations and agreements concerning the cross-organizational activity of discharge planning. The implementation of technology for supporting information and communication processes has increased during recent years, which has created a growing need for understanding how social factors relate to technology [38]. According to Mackenzie & Wajcman [39] the shaping of these kinds of systems, in what is called the "Social Shaping of

Technology” ought to be understood by studying processes and practices of design, development and use of technology, and including political, social and cultural factors in such studies, in contrast to the more traditional approaches and methods of studying technology in society, which focus on the consequences of technological changes.

Methodological considerations

The PAR approach involves the participants from the start, intertwining data collection and data analysis in a process of shared sense-making. Pragmatic validity is essential in the methodology of PAR. In this study the aim was to investigate involved professional healthcare staff’s perceptions of how to design a new best practice, when video conferencing was implemented in the discharge planning sessions in collaboration between multiple different healthcare professionals in hospital and in home-care. In order to develop new knowledge which is meaningful and manageable in their own work practice and context, professionals need to participate from the very beginning of the process. Ontologically and epistemologically, the assumption of PAR is according to Heron [29] that there is a reality, but people interpret this reality differently. By letting the workshop members discuss and reflect on their different experiences and knowledge, they were able to view the discharge planning sessions in a new way, using their own stories and analyzing them together. Whether the participation in this project or workshop will lead to some kind of change in everyday work in discharge planning is still unknown and depends on whether the managers in charge are striving towards carrying through the suggested changes and action plan that was handed over to them for further action. Participatory validity is another aspect which is central in PAR according to Stringer & Genat [26], who state that a rigorous study requires prolonged engagement and trust. It is not easy to reflect on your own work practices, since everyday reality often is taken for granted. This requires the researcher to establish relationships and trust to make participants feel secure and have the courage to talk about what they want and not what they think the researcher wishes to hear. In this research project, which involved five workshops, the participants created the research question, produced data by telling their stories about discharge planning sessions and analyzed this data. This cyclic process provided the participants with an expanded understanding about the discharge planning sessions in general as well as the use of video conferencing in discharge planning in specific. Through continuous dialogues, the participants confirmed the findings by recognizing them in their everyday practice, which is what according to Polkinghorne [40] is validation of claims. The participants also expressed that they had never reflected in this way before and that this kind of reflections had given them a deeper understanding about discharge planning overall.

CONCLUSIONS

Based on the results from this study, we suggest that it might be useful for the professionals to gain more and deeper understanding of each other’s everyday work, and that it would be helpful to develop a corporate and standardized guideline with a check list to support the staff in developing new work practices for making the planning-session work out well. It could also be useful for the professionals to learn and understand how - regarding what to include in the planning sessions and where

the planning session ought to take place - different ways of discharge planning can affect the results of the patient's further care at home, after the discharge.

FURTHER RESEARCH

Planning for the patient's further care after discharge is an activity that traditionally takes place in the hospital, where the planning-session focuses on the patient's supposed needs after leaving hospital. There is perhaps a need to improve the traditional way of planning for the patients' further care after leaving hospital, by focusing less on the assessment of capacity based on how it works in the hospital for the patient and more on how it really works out in the patient's home. Discharge planning using video conferencing with focus on a short meeting where every participant is well prepared, ought to enable fast decisions about appropriate immediate further care, followed by early meet-up by home-care professionals to make assessments and take decisions depending on patients' needs in a more long-term objective.

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ABSTRACT

The overall aim of this thesis has been to study the implementation process concerning the use of video conferencing in discharge planning, during and after a development project in a region in southeast Sweden. The research approach has been developed within a new interdisciplinary research area, Applied Health Technology. The main focus of the research has been on how the new IT solution has affected everyday work, and in what ways management supported staff during the implementation process. The study design has a qualitative approach. Phenomenological hermeneutics, content analysis and Participatory Action Research (PAR) have been used in the analysis process. Study I aimed to describe primary healthcare nursing staff's experiences of discharge planning, along with their concerns about using video conferencing in discharge planning sessions. It was found that there is need for improvement in communication and understanding between nursing staff working in hospitals and in primary healthcare, and need for nursing staff to obtain more information about how IT solutions could support their work. The aim of Study II was to examine the implementation process of using video conferencing in discharge planning, according to a theoretical framework composed from theories about implementation processes. It was found that implementation frameworks can be useful, and that framing the implementation process supports the exposure of factors and highlights relationships and states of dependency between those factors which may affect implementation. Study III set out to describe managers' reflections about leading the implementation process of using video conferencing in the discharge planning session. The results indicate that managers experienced

two leadership perspectives when they reflected on the implementation process. On one hand, they described a desired way of leading implementation, on the other hand they described an actual way of leading implementation. The aim of Study IV was to describe the reflections of professionals about what is needed in order to create what should become a new best practice using videoconferencing in the discharge planning sessions. The results indicate that the professionals experienced lack of knowledge and understanding about each other's everyday work and that the absence of well-functioning common routines obstructed the process. The results also indicate that there is a lack of common arenas to enable discussions, negotiations and agreements about adopting new routines as the discharge planning process changes over time. This thesis contributes to the much-needed discussions about how to manage the many ongoing IT implementation processes in Swedish healthcare organizations, by highlighting challenges and difficulties that both healthcare professionals and managers have experienced during an implementation process. The results indicate that implementation frameworks can be useful when new IT solutions are introduced in healthcare, and that there is a need for dedicating time, space and support for involved professionals in designing their everyday work.

Key words: Applied Health Technology, Discharge planning, Healthcare, Implementation, IT solutions, Video conferencing, Qualitative research.

