

Et sic operatur?

Exploring outcomes of organizational change in
contemporary hospitals

by

Gunhild Bjaalid

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“No action without research, and no research without action”

Kurt Lewin

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Gunhild Bjaalid, Stavanger, September 2017.

Summary

Et sic operatur?

Exploring outcomes of organizational change in contemporary hospitals

Background and aims:

Emergent trends in society and the expectations of authorities influence activities in public hospitals. The thesis has an overarching aim to contribute to knowledge on how changes in task management and organizational design influence individual and organizational outcomes in hospital setting.

The first part of this thesis is based on qualitative studies, including interviews and observations of meetings in a health region project called; 'Implementing an advanced task planning system'. This new health ICT-system should improve long term planning for clinical personnel and physicians, and be compatible with other ICT systems such as the electronic patient journal system (DIPS) and Outlook. The rationale behind this change-project was if one succeeds in developing and integrating better health information systems one can save time and money, distribute work tasks more efficiently and treat patients with complicated diagnoses acquiring medical help from different departments and professions in a more streamlined and effective way (Kellermann and Jones, 2013). Task planning is an important strategic and operational management function that is decisive to the efficiency of an organization. Task planning enables management to respond to needs for change, to prioritize scarce resources, to allocate the right resources to the right place at the right time, to stimulate knowledge transfer and learning and to distribute a sensible division of tasks between leaders, professionals and patients. The qualitative interviews

done in this early phase of the project revealed something interesting; top management used a very special type of goal-setting regime when implementing the advanced task planning system, a type of goals called hairy goals. They also used a special type of project implementation style, called agile project management. The purpose of article 1 was to examine the role of big, visionary hairy goals on employee motivation in change management. We followed the implementation of an advanced ICT task planning system in eight pilot departments in a hospital region. Hairy goals are a type of goal setting that might be useful in multi-rational organizations consisting of different professions with different work situations such as a hospital, because this type of goal setting is visionary in what it wants to achieve, but vague in how to get there. This allows different professions in the organization to interpret the goals according to their own values and visions. The top management had developed this type of goal setting to avoid professional conflicts and different institutional logics to stop the change process prematurely.

Article I in the thesis focuses on what types of goal setting strategies and project implementation style are most useful in implementing an organizational change, with focus on individual work motivation and organizational outcomes.

The participating action research in the second article in this thesis was also a result of top management going new ways to succeed in organizational changes. The development of day care surgery as a field, and establishing a new day care surgery department, had been a goal for this hospital for decades. Top management for the surgical department realized that it was going to be hard to develop an efficient multidiscipline department with an improved and patient-centered workflow, without a process which involved breaking up of professional cultures and traditional management structures. This was met with considerable resistance from different professions, not only from the physicians, but also from the anesthesia nurses.

The study in article 2 explores how task responsibility changes when setting-up a new day care surgery department (DCS) at a Norwegian University Hospital. The goal was to establish a multidisciplinary work environment with sustained focus on the safeguarding of patients and their needs, and on the creation of management principles that support this focus.

The qualitative interviews in article 1 and 2, allowed us to get a deeper insight in where task planning and workflow stopped up, what problems different professions experienced in collaboration within their professions and with other professions, what types of work tasked they found stressful, and what motivated them at work. We got information of how they experienced their psychosocial work environment and what types of negative acts and ethical dilemmas they had experienced at work. This information was vital for us in developing the survey that article 3 and 4 in this thesis are based on. This survey was not only a data collection process for research purposes, it was also a work environment survey for the 22 883 employees in the health region. The interest for the type of stress we label as ‘institutional stress’ and how this was related to job performance, came early in the data analysis process. In the qualitative interviews, several informants had complained that the hospital had been too focused on numbers, business and reports. ‘Quality’ was measured by the wrong parameters and they informed us that they did not think their organization developed in the right direction.

Change processes can be experienced as physical, environmental or psychological stressors and lead to strain among the employees. The aim of the study in article 3 is to investigate if stress related to disagreement on the strategy, policy and management practice of the hospital, what we label institutional stress, is related to perceptions of job resources and job demands, and how this stress influences organizational outcomes such as job performance.

In work environment surveys it is normal to include questions about self-perceived bullying, experienced negative acts and psychosocial work environment in general. Workplace bullying is not expected to exist in a vacuum, as it is influenced by and evolves from different characteristics of the organization (Einarsen, 1999; Leymann, 1996). In article 4 in this thesis, our focus is to increase our understanding of workplace bullying in relation to work climate and different outcomes among one profession in the hospital setting, the nurses. In this article, we examined a proposed bullying model including both job resources and job demands, as well as nurse outcomes reflected in job performance, job satisfaction and work ability.

Methods:

The empirical data in this thesis is based on both qualitative and quantitative methods.

Article 1 is based on a qualitative single, case study with 46 in-depth interviews with employees of four different hospitals in eight pilot departments.

The study in article 2 is based on a single case study and participating action research. In this case, the researchers used the following methods; stakeholder analysis, document studies, observations of meetings, semi-structured interviews and participating group methods. The data collection involved 23 in-depth interviews with key-personnel, observations made in the project and steering group meetings over a period of one year, and three half-day seminars with all permanent employees over a period of one year.

In article 3 a self-completion survey was distributed to four public hospitals in a Norwegian health region and the response rate was 40% (N=9162). Two

target groups were defined. Structural equation modeling was used on hospital workers with (N=795) and without (N=8367) managerial responsibilities.

In article 4 a sample of 2946 registered nurses from four public Norwegian hospitals was collected during October 2014. Data was analyzed using descriptive statistics, correlations, Cronbach's alpha, confirmatory factor analyses and structural equation modelling.

Findings and Discussion:

Our findings in article 1 indicated that hairy goals motivate employees to act at the beginning of a change project and hinder goal conflicts, resistance and frustration. However, hairy goals need to be transformed into learning goals at some point in the implementation process, if employee motivation is to be maintained during the project period, and to secure feedback and engagement following the milestone attainment. Agile project implementation, which is typically used in bottom-up software development organizations, seems to be a useful strategy, useful also in bureaucratic organizations such as public hospitals. Is type of goal-setting practices important in organizational changes? If so, what types of goals are most useful in which situations and organizations? This was the overarching aim to examine in the first article in this thesis. According to goal-setting theory, specific high goals lead to higher performance than no goals or even an abstract goal such as "do your best" goals. Hairy goals are both abstract and not normally linked to performance targets or feedback routines.

The results in article I suggest that being aware of the type of goals used in the different phases of implementing organizational changes is crucial, because our results indicated that vague goals must at some point be transformed into more specific goals, to provide the behavioural requirements that ensure action.

Goal-setting practices must change with the different phases of a change process if goals are to be useful, and to keep up employees' motivation to participate in the change process.

The study in article 2, focuses on the establishment of the new day care surgical department (DCS) outside the hospital setting. The findings suggest that the hospital achieved the vision of creating an efficient multidisciplinary work environment with a new distribution of work tasks across organizational and professional boundaries, while at the same time the culture of tribalism between professions was reduced, and a work environment with a high degree of knowledge transfer was created. Employees in the new day care surgery department report on new ways of working together as a team where they are allowed to contribute to important decisions in task planning, organizing and running the department, experiencing responsible autonomy and having a close relationship to their formal leaders, and a good working environment in general.

The action research change principle used in article 2 is drawing on the socio- technical approach. The socio-technical approach stresses that an effective and efficient work place requires an optimal interrelationship between humans and technology. All employees should be able to develop multi-skills, have task variety, decision-making autonomy and shared goals, and a management structure that supports all of these. Crucial to achieving this is the ability for all staff to participate in the change process and the design of the new system, and a senior management committed to creating and supporting this philosophy.

This study in article 2 involved many controversial issues such as moving the hospital department out of the hospital area, establishing a new management structure and breaking up professional groups. This was done to ensure a higher degree of multidiscipline services and improved surgical teams. Reorganizing work tasks, leadership responsibilities and creating a multidiscipline work environment also evoked strong

resistance, power struggles and conflicts among different groups of employees. The internal politics of the organization, and the strong professional cultures were seen as two of the obstacles in establishing the new day care surgery department.

Modern organizations are often characterized with disagreements and conflicts between managers and professional employees, in this thesis, stress related to the organization's policy, lack of influence on goals and important organizational decisions, is labelled as institutional stress.

In article 3, institutional stress had a direct negative influence on job performance on hospital employees without leadership responsibilities. Additionally, the findings indicated negative influence of institutional stress on psychological needs measured by competence development, autonomy and social support. Autonomy, competence development and social support had positive influence on job performance, as expected. Further, institutional stress did not have a direct influence on job performance among leaders, and social support from leaders had a non-significant influence on job performance in both target groups.

The findings in article 3, suggest that institutional stress has several negative effects on hospital workers' work motivation and job performance. Further research should explore different possibilities for organizations and leaders to manage institutional stress.

Institutional stress and ethical dilemmas were also research themes in article 4 in this thesis. Institutional stress and ethical dilemmas have significant negative influence on bullying, and they reduce job performance, job satisfaction, and work ability among nurses. However, job resources, such as competence and development, and colleague support, reduce bullying and increase job performance, job satisfaction and work ability among nurses. In this study, task oriented leadership is only significantly related to job satisfaction, which indicates that other forms of leadership probably are more efficient to reduce bullying.

In article 4, the majority of work climate characteristics confirmed to influence workplace bullying, and additionally had direct influence on nurse outcomes were; job performance, job satisfaction, and work ability.

Bullying plays a mediating role in the relation between the majority of job resources and job demands, and bullying negatively influences job satisfaction and work ability amongst nurses. Bullying does not have a direct influence on self-reported job performance amongst nurses. Future research should examine how organizational improvement programs can reduce workplace bullying by focusing on reducing institutional stress and dilemmas among hospital employees. These programs should focus on achieving higher levels of role clarity, transparent decision-making procedures, improving management conflict resolution skills, and structural ways to handle and reduce ethical dilemmas.

Table 1 – Overview of design, aims and approaches in the four articles in this thesis

<p>Hairy Goals in Change Management: The Case of Implementing ICT Supported Task Planning in a Hospital Setting.</p> <p>Design: A qualitative, single, instrumental case study. 46 in-depth interviews were carried out with employees of four different hospitals in eight pilot departments.</p> <p>Aim: Exploration of the impact of hairy goals and agile project management of an organizational change process that developed and implemented a new health ICT-system (advanced task planning system).</p> <p>Target group: Top management, administrative personnel and clinical personnel in the pilot departments.</p> <p>Theories: Goal-setting theories, Agile project management, Work motivation theories and Institutional logics</p>
<p>Utilizing participating action research design principles drawn from The socio-technical theory to establish a multidisciplinary day care surgery department</p> <p>Design: Single, case study. 23 in-depth interviews with key-personnel, observations in the project and steering group and three half-day seminars with all permanent employees. Target group: Top management, administrative and clinical personnel involved in the establishment or working in the new DCS-department.</p> <p>Aim: Develop an efficient multidiscipline work environment and focusing on the safeguarding of patients and their needs through reorganizing location, staff and management structures.</p>

Target group: All employees involved in the process of establishing a new day care surgery department. From top management, members of the steering group and project groups and all professions working with day care surgery.

Theory: The socio-technical approach

Institutional stress and job performance among hospital employees

Design: This study adopted a cross-sectional web based survey design. A quantitative study, self-completion survey was distributed to four public hospitals in a Norwegian health region (N=9162).

Aim: Broaden the understanding of how institutional stress influences job performance, and explore how some of these relations might be mediated by resources like autonomy, competence development and social support.

Target group: All employees in a hospital region.

Theory: The Job Demand Theory.

Work climate and the mediating role of workplace bullying related to job performance, job satisfaction, and work ability: A study among hospital nurses

Design: This study adopted a cross-sectional web based survey design.

Aim: To increase understanding of workplace bullying and its relation to work climate and different outcomes among nurses. Examine a proposed bullying model including both job resource and job demands, as well as nurse outcomes reflected in job performance, job satisfaction, and work ability.

Target group: A sample of 2946 registered nurses from four public Norwegian hospitals were collected during October 2014

Theory: The Job Demand Theory.

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1 Context, background and overarching aims of the thesis

1.1 Context

Norway's hospital reform began in January 2002. The Norwegian Parliament transferred the ownership of all public hospitals from the county governments to the central state. This was carried out to resolve major problems in the Norwegian health care system (Hagen and Kaarbø, 2006). Activity-based financing was implemented in the Norwegian hospital sector from July 1997, managerial focus has been increasing in the public sector in the 20 years since it was implemented (Magnussen, Hagen and Kaarbø, 2007). These types of changes in the hospital sector are often called NPM (New Public Management) inspired changes or reforms (e.g. Lægreid et al., 2003). In the Norwegian journal "Medicine Today", aimed at physicians and health workers, there has been a flow of articles about the negative side effects of NPM related reforms and leadership of hospitals. Our neighbours in Denmark and Sweden are now evaluating and implementing new healthcare reforms towards a different type of leadership in health-care, called a trust-reform (Knardahl, 2016). Medical authorities in Norway call for the same. Twenty years after the implementation of the NPM-reforms, they still remain highly controversial among health personnel. There is considerable concern about lack of trust from health-care professions in politicians and administrative top management at the health regions and enterprises; are they really leading and controlling the resources in the best possible way for both the patients and employees (Nyseter, 2016). This can lead to a decline in trust over decades that may undermine the public acceptability of new changes and hospital reforms and threaten the ability of government and managers to gain support for them.

Health-care inflation due to rising costs is worrying European politicians. Highly specialized medicines for diseases like cancer are entering the market at sky-high prices, forcing governments to choose between the need to treat their citizens and the need to spend wisely. Political decision can control what types of medicines to provide the population, but a hospital employee might be the one who has to face the patients and their families to inform them that they cannot be allowed optimal treatment due to economic reasons. This can potentially be a source of work related stress for clinical personnel.

At the same time, Europe's population is only getting older, straining an already stretched system. The greying of Europe also means more patients suffering from multiple chronic diseases needing a lifelong relationship with the health-care system (Paun, 2016). This means that state-cared funded health systems will be under a lot of pressure to organize their services in a functional and cost effective way in the future. This may lead to a continuous flow of organizational changes to maximize the production of medical treatment and still increase quality of health-care, but at the same time also cut or control the costs. Standardization of treatment and the development of patient pathways, reduction of hospitalization and increasing day care or polyclinic treatments, are all examples of organizational changes with a goal to increase efficiency and reduce costs.

Emergent trends in society and the expectations of authorities influence activities in public hospitals. In this thesis, I ask how leaders and professional groups respond to changes, emergent trends and expectations in hospital organization and how this materialize in task planning, goal-setting, organizational design, and the psychosocial work environment.

The studies in this thesis are a part of the larger research program called "Leadership and task planning in hospitals". The overall research question of the main project is "How can changes in task planning and

work distribution improve hospital performance?” The need to improve performance has been one of the driving forces behind major changes in health care policy. The studies in this thesis followed the outcomes of different short and long-term change projects that implemented new technology, new policies and new organizational and management structures. The improvement of hospital performance was a major driver behind all of these changes. However, as research on change processes have documented, changes do not always go according to plans and intentions (By, 2007; Beer and Nohria, 2000).

The healthcare sector in Norway is characterized by the consolidation of health care units, free choice of hospital within state borders and (from 2001) substituting the dual collegial management structure based on a pair of managers, a head nurse and a head doctor in each unit, with a unitary management model (Johansen and Gjerberg, 2009). The healthcare sector, due to the many different work situations and professions involved and to strong stakeholders both inside and outside of the organization, is distinguished by a higher level of inconsistent or conflicting demands. This also clearly distinguishes it from other sectors. The healthcare sector depends on technology-intensive services, technology that improves both clinical work and workflow. Healthcare is also distinguished by optimal success criteria, uncertainty due to different institutional logics and the powerful role played by both internal professions and external stakeholders (Gilmartin and D’Aunno, 2007).

The Norwegian Parliament and Government expect each hospital and the hospital regions to provide specified health services within their budgets. In order for the hospitals and their owner (the state) to monitor this activity, key performance indicators are deemed important. These are linked to activity volume (number of treatments and produced diagnosis-related group points), economic result (current costs compared to budget and results) and goal achievement (e.g. compliance with treatment deadlines, waiting lists, ‘corridor patients’ and ‘sick leave’).

Hospitals report regularly on these parameters to state authorities. The data for the studies in this theses are collected in a health region in Norway consisting of four local health enterprises that are legal entities and subordinated the regional authority.

1.2 Background

European policy makers broadly agree on the core objectives their health care systems should pursue. The list is strikingly straightforward; effective care for better health outcomes, efficient use of resources, high quality services and responsiveness to patient concerns (Mckee and Healy, 2002). Universal access for all citizens is normally on the same list. This goal is more controversial, since health care services in Europe are moving from “universal provision” to “financial participation”. This means more patient fees in public health services and a growing private market for patients who can afford to pay for their health services (OECD, Health at a Glance, 2015).

In *politics*, the major institutional trend has been “new public management” (NPM). This involves greater use of management contracts, increased professional and economic autonomy at the institutional level and greater emphasis on output control (Hood, 1991; Christensen and Lægreid, 2010). Ideas adopted from NPM have led to hospitals being granted more autonomy. They are, however, also subjected to stronger cost control (Lægreid et al., 2003). Increased autonomy leads to an increase in demands for accountability and also an increased need for the development of standardization in patient treatment and flow.

We see changes in treatment demands in an aging population. Many countries have introduced new collaborative models to try to ensure a better flow of patients between somatic treatment units, municipal caring units and home care schemes (European Hospital and Healthcare federation, 2009). Patients are, based on the ideas of NPM,

increasingly seen as being “users” of public services and not as just patients with specific needs. User involvement in Norwegian hospitals is codified in law, and studies show that user involvement has to a large extent been adopted in psychiatric hospitals (Storm, 2011) and in elective surgery (Heggland et al., 2012).

As a background for this thesis, and as a fundament of the larger project this thesis is part of, I will discuss how the ideas inspired by NPM have introduced a new competing logic in the health care sector called the “managerial or business logic”, and how this logic now competes with the traditional “medical logic” (Reay and Hinings, 2005).

In the *economic* field, we see the proliferation of performance pay and an increase in the use, throughout the public sector, of competitive tendering and sourcing. The Norwegian Parliament and government expect every hospital and hospital region to provide a specified range of health services, and that this is achieved within allocated budgets. Key performance indicators are considered to be important means for hospitals and their owner (the state) to monitor this activity. These indicators include activity volume (number of treatments and produced DRG points¹), financial results (current costs compared to budget and net operating result) and goal achievement (e.g. compliance with treatment deadlines, waiting lists, “corridor patients” and “sick leave”). Hospitals report these parameters regularly to regional and state authorities. Many questions around this economic and political reforms remain however unanswered in healthcare organizations. The economic pressure influences health-care in most European countries. Doctors have been threatening massive strikes in Britain to protest against pay and

¹ The abbreviation “DRG” refers to a “Diagnose Related Group” and is used to quantify hospital production. It was originally developed at Yale University in the 1970s. The system is now implemented with national adaptations in many countries. Nordic health authorities have agreed to share the development and maintenance work for treatments which do not exceed 24 hours. (See <http://www.helsedirektoratet.no>)

conditions, Italian regions are going bankrupt trying to fund medicines, and drug-makers are pulling diabetes drugs from Germany, blaming government-set prices that don't let them recoup their investments (Paun, 2016). According to health policy analysts state-funded health care systems can only survive with the right policies and economic control. This includes moving towards more efficiency in delivering health care, and having a focus on spending only on measures with proven results (Paun, 2016). Establishing more day care surgery to reduce hospitalization and introducing more efficient task planning systems to provide a better workflow are examples of changes implemented to save costs and improve efficiency.

New *technology* has, in the last two decades, transformed both clinical work and administrative processes. There have been great advances in fields such as information management, automated lab-tests, telemedicine, radiology, robot technology for sophisticated diagnosis and biotechnology.

One example is the development of standardized treatment procedures and patient pathways. A patient pathway is, in essence, the route a patient takes from their initial consultation with a healthcare professional through to the completion of their care. The objective of reorganizing patient pathways is to allow a patient to flow smoothly through the healthcare system, to improve clinical outcomes and patient satisfaction and to eliminate waste and delays, and so saving time, resources and effort for everyone involved (NHS, 2007a). A patient pathway is a system made up of people, technology and structures. Like any other system it can be mapped, analyzed and redesigned to make it more effective and efficient (NHS, 2007b, 2007c).

In this thesis, I follow the establishing of a new day care surgery. The goal of the surgery is to improve patient service by organizing the different professions around a day care surgery (service-based organization) and thereby create an easier treatment pathway for patients.

I will discuss the pros and cons of patient- centered organized hospital departments over the more traditional professional organized departments.

In the *managerial field*, new technology paves the way for new management models by introducing systems of real-time monitoring and administration and by reducing the need for manpower. This calls for a better understanding of the relationship between institutional context, goal-setting, decision making procedures and the specific clinical decision processes and outcomes (Orfali, 2004).

In the *social sphere*, we see that the very large amounts of information available to patients and their relatives on the internet contribute to higher expectations and demands. Patients' questions are more demanding, and they are better informed of their rights and obligations. Better informed patients, greater transparency through social media and the immense growth in the amount of information available on the Internet, contribute to an increase in critical reporting in the media. This can lead to a more demanding work situation for hospital employees. The strong role that professions play in the healthcare sector therefore means that it is important to study how different professional groups respond to the trends that affect healthcare at hospitals.

Hospital *culture* has been described as a culture that is full of hierarchies and professional boundaries (e.g., Bate, 2000). There are many stakeholders and complex levels of decision making authorities in a public hospital and public hospitals have been criticized for being too hierarchical and too bureaucratic. The focus on productivity and cost efficiency, has also increased while the focus on improved medical quality and care in the treatment of patients has decreased. The focus on productivity and efficiency, and top management's wish to improving hospital performance, may have unintended consequences, and leading to a gap between managerial and clinical worldviews and

understanding of goals, policies, values and prioritizing. This is what we labeled as institutional stress in article 3 and 4.

Employees with years of work experience in the hospital sector are raising concerns that the measurements used to evaluate the quality of their work are based on the wrong parameters. They are concerned about the heavy administrative burden pulling the focus away from patient care, and about health information systems which instead of being useful work tools are stealing time that should be allocated to patients. They are also concerned that reporting adverse events can be seen as being disloyal and punished, rather than being encouraged and used to solve problems. Public service outcomes include elements of quality of care that may be difficult to measure (Anderson et al., 2011), but which are still important to value.

Changes in hospital organization and management structures, implementation of changes, the role of professions, and the distribution of work tasks are themes in all of the articles in this thesis. Political, economic, technological, managerial, cultural and social factors all influence the performance, outcomes and efficient operation of a public organization. They also influence how valued, appreciated and motivated the individual employee feels in his or her day-to-day work situation, and how vulnerable the psychosocial work environment is to bullying and harassment.

1.3 Overarching aims of this thesis

The last decades, most European healthcare organizations have been subjected to New Public Management (NPM) reforms and increased attention to cost efficiency. We have seen organizational changes, mergers, downsizing, new reporting systems and digitalization. In the same period, there have been substantial changes in medical treatment and technology, opening for

standardization of treatment, the development of patient pathways, reduction of hospitalization and increased use of day care or polyclinic treatments (Lapsley, 2008, Opedal and Rommetvedt, 2010).

The overarching aim to the thesis is to contribute to knowledge on how changes affect organizational and individual outcomes in contemporary hospitals. Based on this the two main research questions are:

1. How did the implementation of advanced task planning management, and changes in organizational design and goal setting influence distribution of work tasks, work motivation and the psychosocial work environment in hospitals?
2. How can professional disagreements in policies and distribution of resources influence outcomes such as workflow, work motivation, the psychosocial work environment and job performance among hospital employees?

The first article explores how the top-management's hairy goals of implementing an organization wide system for advanced task planning, influenced employees' motivation and job performance.

The second article documents action research based on socio technical principles to improve task planning, workflow and multidisciplinary cooperation. In this case study, we follow the first 18 months of operation of a new day surgery unit. The aim of the organizational change was to build down the "silos" and "turf battles" between internal departments, and help to create better multidisciplinary cooperation. However, this organizational change did not come without resistance.

In the health services, many of the organizational changes and priorities following NPM and later reforms, have created resistance among professional groups. By using survey data, the third article in this thesis tests a theoretical model where we hypothesized a relationship between disagreement with the organization's policy and priorities, labelled institutional stress, and self- reported job performance among hospital

employees, and that resources like autonomy, competence development and social support mediate this relationship.

Controversial organizational changes, job demands, conflicts and disagreements among staff, may lead to a range of possible negative outcomes. In the fourth article, we study organizational antecedent of bullying among nurses. We hypothesized that institutional stress and ethical dilemmas would have a negative influence on bullying, and reduce outcomes such as job performance, job satisfaction, and work ability among nurses. We also hypothesized that job resources like competence development and colleague support would reduce bullying and increase job performance, job satisfaction and work ability.

1.4 The structure of this thesis

Chapter I presents the background and the overarching aims of this thesis. Chapter II presents the theoretical and empirical basis of the four articles. Chapter III is a summary of the four articles.

Chapter IV presents the ontological and methodological position of the thesis. The chapter also includes a short presentation of the research designs, participants, procedures and measures.

Chapter V includes a discussion of the results, the relationship between the articles and implications for future research.

Chapter VII contains references.

Chapter VIII contains the list of the four articles.

2 Theories and previous empirical

2.1 Introduction to the theoretical and empirical stand of this thesis

In this thesis, I use the JD-R model as the theoretical fundament in discussing the overarching research questions, as well as a special type of work related stress labeled as institutional stress in article 3 and 4. The job demand-resources (JD-R) model gives a theoretical framework for understanding how certain job demands and resources are predictors of certain outcome dimensions. Goal-setting theories (Locke and Latham, 1990; Collin and Porras, 1994) and agile project management (Highsmith, 2009) are used together with work motivational theories (Latham, 2012) in article 1. Stress theories and empirical studies on work place bullying (Ursin and Eriksen, 2004; Einarsen and Skogstad, 1996; Salin, 2003) are used in article 3 and 4. Institutional logics (Reay and Hinings, 2005; 2009) and job design theories (The Socio-technical approach; The JD-R model) in article 1, 2, 3 and 4.

The main motivation for the elective theory approach of this thesis is to obtain a broad picture of the research issues chosen. It is assumed that different types of knowledge can be gained by using different theories and perspectives. Thus, it is possible to more fully understand the processes and outcomes of changes in the contemporary Norwegian hospital context if these are studied from different viewpoints by using different theoretical approaches as embedded in the Job Demand-Resource-model. The different theories and empirical framework will be presented in the following section.

2.2 Perspectives on Change processes

The studies in the thesis contribute to knowledge on how to relate to different types of change processes. This involves long-term and short-

term change processes, with a planned and emergent approach to change, and with both intended and unintended outcomes.

The English Prime Minister Benjamin Disraeli is quoted saying ‘the only constant is change’, modern day organization may have to deal with change pressure in a different way than previous historical organizations, due to the rapid changes in technology, equipment and digitalization in our time, hospitals being no exception. The organizational dilemma between offering stability for staff and improve efficiency and control cost, seems to be a constant problem in contemporary health-care.

Planned changes are defined as the deliberate actions designed to move an organization or part of one, from one state to another; with a discrete beginning and to end points (Burnes, 2004). In this perspective, change is seen as something managers can plan, control, execute and implement. The first two studies in this thesis followed the intentional (and unintended) outcomes of a top management controlled planned change process. According to the Complexity theory, planned change is not even possible because of the complexity of entities in organizational life, where things do not happen in a linear fashion. Therefore, directed and hierarchical efforts of change will not be possible (Burnes, 2005). The theory claims while managers and leaders can decide what their next action should be, they cannot determine the eventually outcomes of those actions in future time. If complexity theory gives an accurate portrayal of organizational life and behaviour, then it is not possible to use hypothesis testing and theory generating to help succeeding in organizational changes. According to the complexity theory, you cannot control change in the sense that you cannot plan and control the outcomes of the change processes, no matter how clever and detailed plans made beforehand. The question is; to what extent are planned changes even possible, and when do they go in accordance to plans and intentions (Senior and Swailes, 2010)? Not very often, according to the most pessimistic empirical studies in the change

literature, failure rates between 60 % and 90 % are not uncommon depending on the type of change and reliability of research methods (Burnes, 2009, 2011), while other change theories give specific cookbook recipes to the ingredients necessary to perform a successful change operation (e.g. Kotter's 8 step model, 1995). The character of the changes can also vary, from a convergent type of changes, which can be seen as a fine-tuning of an existing system, to a continuous type of changes, a slow adaption of existing systems, which in turn can trigger radical changes. Emergent changes can arise from experimentation and adaption, and are seen as something the managers create the right climate for growing (Wilson, 1992).

'Emergent changes' are also described as 'bottom-up changes', this type of change description appears to nurture the idea that change offers the prospect of generating bright ideas and amazing innovations if only organizations could manage the right spirit and atmosphere. The key to successful organizational change was to have focus on and trust the creative capacities of people in organizations. Then flexibility and autonomy would allow these ideas to thrive. Flexibility means the ability to react fast, combine people across categories and create a climate that encourages new possibilities. This is not an easy task to manage, the art of becoming a flexible and innovating organization is a rare miracle, according to Kanter it 'is difficult to find any practical examples of organizations not born that way that have fully transformed themselves to attain this ideal' (Kanter et al, 1992, p.4). Kanter assumes that the main reason for this is that we implement the wrong type of changes.

In classical organizational theories, a detailed specification of particular organizational arrangements is the best starting point for action and changes (du Guy and Vikkelsøy, 2017). Good solutions are based on detailed descriptions. The tradition of 'organizational development' arose after the second World War, when social science had become focused on the small group as a unit of analysis, and democratization and societal prosperity were seen as two sides of the same coin (du Guy

and Vikkelsøy, 2012). ‘Organizational development’ became an umbrella for diverse sets of ideas and approaches to planned and management controlled organizational change with different interventions.

Within the field ‘strategic change management’, the work of Kotter is highly influential. Kotter (1996) argues that organizational change is a necessity in contemporary business life because of external pressure in macroeconomics pushing organizations to reduce costs, improve quality, increase productivity and find opportunities to grow. Kotter’s view on the necessity of organizational changes is very much in line with goals behind the NPM reforms that has been so influential in hospital management the past decades. Kotter argues that a lot of change implementations suffer from a lack of competent execution resulting in a vast number of failed change programmers and frustrated employees. Change leaders typically do a range of mistakes, and Kotter outlines the most common types of errors and how to avoid them. Among the typical mistakes Kotter outlined were failing to create a sufficient powerful coalition, underestimating the power of vision, permitting obstacles to block the new vision, and neglecting to anchor changes firmly in the cooperate culture.

Kotter creates a war-like perspective to change: to take a lead on change means to start a battle against complacency by evoking a sense of urgency and offering strong ideals (du Guy and Vikkelsøy, 2012). To manage this ‘leadership’ rather than management is needed.

Another reason why change processes do not always go according to plans and intentions is what has been called the humans’ tendency to fear all changes or feeling resistance to change regardless of intentions or expected outcomes. Resistance to change processes has typically been seen as the actions taken by individuals and groups when they perceive that a change is occurring as a threat. Researches have largely overlooked the potentially positive intentions that may motivate negative responses

to change (Piderit, 2000). Alternatively, they frame the reactions either as ‘resistance to change’ or as ‘support for a change’, but a change process may involve both positive and negative reactions on many different dimensions, and both individuals’ and groups of employees’ reactions may change on these dimensions during the process. An employee may see on a rational or cognitive level that a suggested organizational change is a good idea, but he/she might not like it on an emotional level, or act on it on a behavioural level. Human reactions and responses to organizational goals are far more complex than some of the studies on the topic suggest. Seeing this point very clearly, Piderit (2000) suggested a multidimensional view of responses to organizational changes, capturing employee responses (both negative and positive) along at least three dimensions: the emotional, the cognitive and the intentional levels. One benefit of using a dimension when understanding employees’ reactions to change is that ‘conceptualizing employees’ responses to proposed organizational change as multidimensional attitudes permits a richer view of the ways in which employees may respond to change’ (Piderit, 2000, p. 789).

2.3 The Job Demand Resource Model

In this thesis I use several theoretical and empirical contributions to explain outcomes of change processes on the work environment, task planning, workflow and job performance on a range of different employees in the hospital sector. Job characteristics supporting satisfaction of needs such as autonomy, competence development and social support, can be seen as mediators between work stress and outcomes such as job disengagement, low organizational commitment and reduced job performance (Latham, 2008). In this thesis, social support is defined as the desire of an individual to experience a sense of social connectedness or to be valued, helped or appreciated by other individuals (Van der Heijden, 1998). Competence development is defined as the desire to be able to complete one’s job tasks effectively and to interact

with a work environment that supports the expression and development of one's abilities (Kristensen and Borg, 2001). Autonomy is defined as the capacity of an agent to determine its own actions through independent choice within a system of principles and laws to which the agent is dedicated (Ballou, 1998).

If organizational changes or new policies are introduced in a way that allows job autonomy, skill use, participation in decision-making and support employees' well-being, work motivation will increase (Latham, 2008; Parker 2003; Karasek, 1996). Autonomy, competence and social support are all described in work motivational theories as basic, innate, universal human psychological needs (e.g. Ryan and Deci, 2000). In other theories autonomy, competence and social support are seen as job characteristics (e.g. Karasek and

Theorell, 1990), so work situations and structures that allow employees to use autonomy, competence and to experience social support, will increase employees' work motivation and well-being. Definition of work design characteristics is 'attributes of the tasks, job, social and organizational environment' (Humphrey, Nahrgang and Morgeson, 2007, p.1333). The psychological needs perspective is not necessarily in contrast with the job characteristic perspective, seeing that work motivation is both an internal psychological process and a transactional process (Latham, 2008).

The academic interest in work design has a long history. In the early days focus was typically on how to increase efficiency and productivity, then came a time for focusing on simplification of work tasks and procedures to increase workers' efficiency, followed by the socio-tech focus after World War II on the importance of autonomy, skill variety and collaboration in teamwork (Pasmore, 2006). In the seventies, the motivational aspect on work design was a focus area, and Hackman and Oldman (1976) developed their classic Job Characteristics model. It is still influential today almost 50 years later in spite of severe criticism

for focusing on a too limited set of motivational features such as skill variety and autonomy, and overlooking other important job characteristics such as the social environment and work context (Humphrey, Nahrgang and Morgeson, 2007).

The success of the Job Characteristic theory has also contributed to a decline in research and theorizing on work design in industrial and organizational psychology (Humphrey et al., 2007). One theory that has taken up the inheritance from previous job design theories such as the Job Characteristics model (Hackman and Oldman, 1976) and the Job Demand Control Support Model (Karasek and Theorell, 1990) to explain how job demands and job resources affect employees and organizational outcomes, is the Job Demand Resource model (Demerouti, Bakker, Nachreiner, and Schaufeli, 2001).

Since its appearance, the Job Demand Resource (JD-R) model has made an important contribution to research within job demands and strain, and is now recognized as one of the leading models within this field (Schaufeli and Toon, 2014). The JD-R model is a theoretical framework that tries to integrate two fairly independent research traditions, the stress research tradition and the motivation research tradition (Demerouti and Bakker, 2011).

Unlike previous models as the Job Characteristics model (Hackman and Oldham, 1976), the Demand-Control Support model (Karasek and Theorell, 1990), and the effort-reward imbalance model (Siegrist, 1996), the JD-R model does not limit itself to specific job demands or job resources; instead, it acknowledges that any job demand and any job resource can affect strain on employees' health (Schaufeli and Taris, 2014).

According to the JD-R model, job demands are initiators of a health impairment process, and job resources are initiators of a motivational process. The model also specifies how certain demands and resources interact to predict organizational outcomes.

In many ways, the JD-R model attempts to fill the gap of previous work-strain models. One central assumption of the JD-R model is that every occupation may have its own specific work characteristics associated with both engagement and exhaustion. It is, according to the JD-R model, possible to model these characteristics into two broad categories, job demands and job resources (Demerouti, Bakker, Nachreiner and Schaufeli, 2001).

The JD-R model defines job demands as physical, psychological, social or organizational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort, and is therefore associated with physiological and/or psychological cost. Examples can be a poor psychosocial work environment, high workload or conflicting roles.

Job resources on the other hand are defined as the physical, psychological, social or organizational aspects of the job that are 1) functional in achieving work goals; 2) reducing job demands and the associated physiological and psychological costs; 3) stimulating personal growth and development.

Resources may be located at the organizational level in form of salary and career opportunities. Resources may also be found in interpersonal and social relations in the work setting such as support from supervisor or coworkers. The organization may also provide resources by offering high degrees of job clarity and allowing staff to participate in important decisions regarding their work situation. Resources may also be found at the task level by offering staff skill variety, meaningful and important work tasks and autonomy in the performance of work tasks.

According to the JD-R model job demands will normally acquire use of resources. If, as an example, physicians in the hospital sector experience that the top management do not see the value of their work, or they feel they have to perform work tasks that are not according to their own ethical or professional standard, this will normally prelude the

mobilization of job resources (Bakker, Demerouti, De Boer et al., 2003). When workers become exhausted under prolonged influence of environmental demands, they will, according to the JD-R model, not be able to perform well because their energetic resources will be diminished.

When organizations do not provide or reward employees with job resources, the long-term consequence is withdrawal from work (Bakker, Demerouti, De Boer et al., 2003; Demerouti et al, 2001). If employees stand in a work situation with prolonged demands and lack of resources, a reduction of work motivation and withdrawal from work, can, according to the JD-R model, actually be an important self-protection strategy that may prevent future frustration of not obtaining work related goals (Hackman and Oldman, 1976; Bakker et al., 2004).

All work situations will have job tasks and challenges employees potentially can perceive as job demands. Job demands can potentially lead to increased work related stress, decreased work motivation and job engagement and reduced job performance.

Exhaustion and cynicism or disengagement from work, seen as core dimensions in burnout, can be observed in virtually any occupational group (Bakker, Demerouti and Schaufeli, 2002). In this thesis I focus on how job demands and resources in change processes affect hospital employees on various outcomes.

Work demands in this thesis include organizational changes, implementation of hairy organizational goals, implementation of new management structures and work procedures, institutional stress and ethical dilemmas. These job demands can possible be solved in a way that has a negative or positive effect on the employees or the work environment. When met with high work demands it is fundamental to have the resources necessary to cope with the demands. Previous studies have focused on social support, competence development and autonomy as important resources in the work environment (e.g. Latham, 2008; Humphrey, Nahrgang and Morgeson, 2007; Parker 2003; Karasek,

1996). Social support is a straightforward resource in that it is functional in achieving work goals (Bakker, Demerouti and Euwema, 2005). While social support from colleagues can include both instrumental help to solve job tasks, it can also be a type of emotional support to prevent health consequences of stressful job experiences (Bakker et al, 2005). Social support from supervisor or leader may also both aid the employee in coping with job demands, facilitate performance and act as a predictor against ill health (Vaanaaen et al., 2003; Bakker et al., 2005). The link between job autonomy and work stress is that autonomy is crucial for employees' opportunity to choose strategies for coping with stressful job situations (Bakker et al., 2005). In this thesis, resources are represented by autonomy, competence development and social support.

The job demand-resources (JD-R) model gives a theoretical framework for understanding how certain demands and resources are predictors of certain outcome dimensions such as job engagement, job satisfaction, the psychosocial work environment or exhaustion, cynicism and erosion of both work engagement and organizational commitment, as well as reduced job performance. The JD-R model claims that job demands and job resources initiate two psychological processes, which eventually affect organizational outcomes (Bakker, Demerouti and Verbeke, 2004). According to the JD-R model, two main processes can occur in work environments regarding demands and resources. First, a stress process initiated from job demands can result in exhaustion. Second, it can start a motivational process driven by the availability of resources and result in feelings of dedication to solve the demand. When resources are lacking, the result can be that individuals experience cynicism towards their job.

According to the JD-R model resources are important not only to buffer against demands, but in itself to ensure personal accomplishments at work. The model also purposes that an employee can be both exhausted and experience engagement at work, one is not automatically the opposite of the other on the same scale. This claim was first put forward

by Leiter (1993) and later supported in a meta-analytic study by Lee and Ashforth (1996), indicating that personal accomplishment develops largely independent of emotional exhaustion and depersonalization. This study also supported the claim made by Hobell and Freedy (1993) that individual employees may be more sensitive to demands placed on them than to the resources received. Work demands are, according to Hobell and Freedy (1993), generally perceived as losses because meeting the demands requires investment of valued resources, viewed as gains. In several of the articles in this thesis, we focus on how job demands and resources affect the organizational outcomes such as job performance. In Lee and Ashforth's meta-analysis, one of the more important organizational outcomes, namely job performance, was not even mentioned (Bakker, Demerouti and Verbeke, 2004).

According to the JDR model all job demands are not seen as losses to the individual. Imagine a work situation with no job demands; this would be a work situation where no one was ever expected to work in a high tempo, never had to work overtime, or asked to perform a work task out of their comfort zone. There was no important decisions to make that could influence important outcomes, all job tasks were easy, and no one was expected to perform over ability. This sounds like the description of a rather dull work situation where employees probably did not experience meaningful work task, and did not very often feel that they got to develop their competence. Therefore, work demands are important, it is when the demands over time are higher than the expectancy or ability to cope, strain occurs. The response can, according to the JD-R model, be either withdrawing or wishing to take control. Another important proposition of the JD-R model is that job resources particular influence motivation when job demands are high. This has been called the *coping hypothesis* and has been empirically tested among Finnish teachers (Bakker et al., 2007). The findings suggested that job resources were most beneficial in maintaining job engagement under high job demands. In another empirical study among a diverse group

of employees, Bakker et al. (2010) tested whether work attitudes like task enjoyment and organizational commitment are most positive when job demands and job resources are high. Results of the moderated structural equation modelling analyses provided strong support for this hypothesis. This empirical study indicated that job resources like skill utilization, learning opportunities, autonomy, colleague support, leader support, performance feedback, participation in decision-making and career opportunities predicted task enjoyment and organizational commitment particular under conditions of high job demands such as a high score on work load and emotional demands. The primary explanation offered for these empirical findings is that resources become most salient under demanding conditions (Demerouti and Bakker, 2011). So according to the JD-R model, there is a need for a challenge in order for job resources to be turned into task enjoyment and work engagement.

In the JD-R model, exhaustion is defined as an extreme form of fatigue as a consequence of prolonged intense physical, affective and cognitive strain caused by prolonged exposure to specific working conditions or stressors (Bakker, Demerouti and Schaufeli, 2002). Disengagement involves to distance oneself from either one's work tasks, the work environment or the work content. It can involve both emotional, behavioural and cognitive rejection of the job.

According to the JD-R model, employees can potentially engage in two different sorts of job performances called *in-role* and *extra-role* performance. In-role performance is defined as officially required behaviour and outcomes that directly serve the goals of the organization (Motowidlo and Van Scotter, 1994; Bakker, Demerouti and Verbeke, 2004). Extra-role behaviour is defined as behaviour that promotes the organization, without necessarily directly influence an employee's target productivity (Podsakoff and MacKenzie, 1994). The willingness to help colleagues with high workloads, and give colleagues social support to solve problems, are examples of extra-role performance, this type of

behaviour is also described as organizational citizenship behaviour (Organ and Paine, 1999).

The relationship between exhaustion and depersonalization and job performance has shown mixed results (Demerouti, Bakker, Nachreiner and Schaufeli, 2000, 2001; Bakker et al., 2004). According to the JD-R model one possible reason can be that most research on how different job demands affect job performance has not made a distinction between in-role and extra-role performance. While reduced effort on in-role performance can be easier detected and sanctioned by the organization, reduced extra-role performance such as employees being less willing to perform organizational citizenship behaviour would not necessarily result in direct consequences for the employees and also be harder to detect (Bakker et al, 2004).

Bakker et al. (2004) found that resources like autonomy, social support and possibilities for competence development increase extra-role performance. The JD-R model explains this finding with employees being willing to go out of their way to perform activities that benefit the organization in exchange for the availability of resources being given to them. This explanation and the results of Bakker et al.'s study (2004) are different from previous studies explaining organization citizenship behaviour in terms of having individual or personality variables such as being social agreeable or a high score on conscientiousness (Organ, 1994). Characteristics of the workplace that are associated with low job resources and high job demands have been demonstrated as risk factors for developing a poor psychosocial work environment and high levels of workplace bullying. It is important to know more about the organizational dynamics in a hospital setting that influence workplace bullying because bullying can negatively influence various outcomes, like increased mental and physical health problems (Nielsen, Magerøy, Gjerstad and Einarsen, 2014). In article 4, we explore which organizational demands and resources can influence bullying, and how

bullying mediates work climate dimensions and outcomes such as job performance, work ability and job satisfaction.

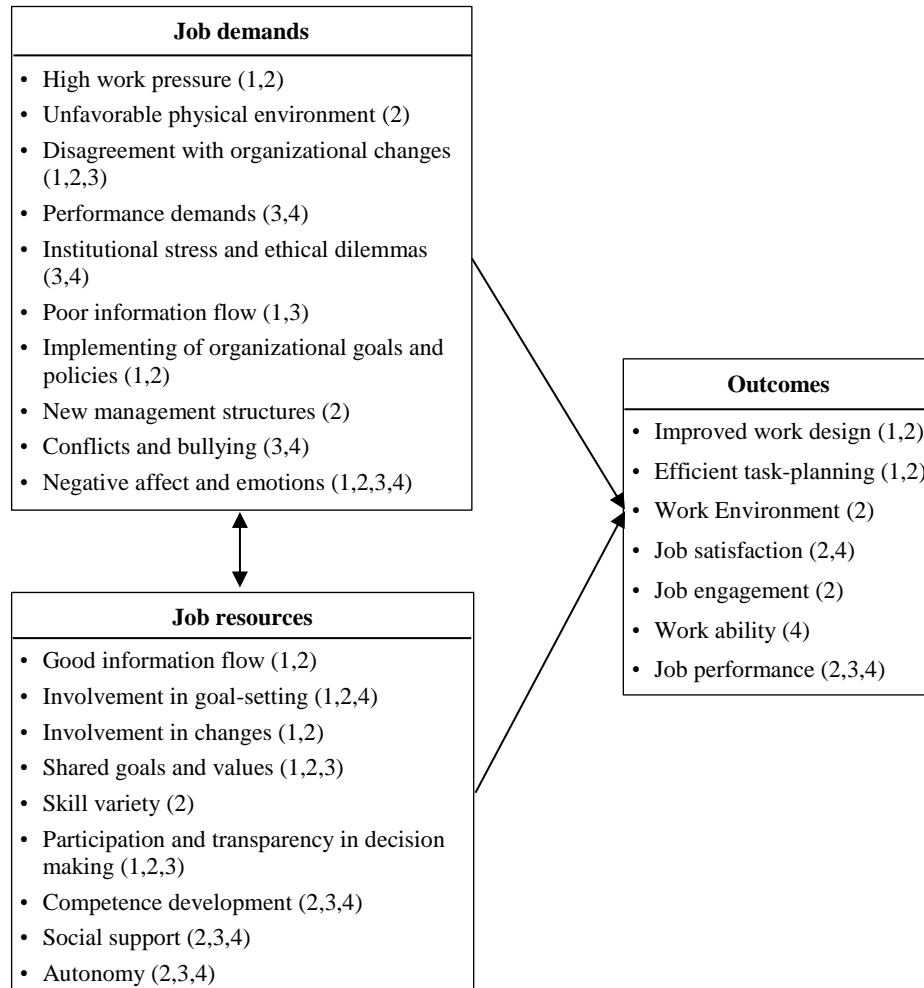


Figure 1 – Overview of job demands, resources and outcomes studied in this thesis. The numbers are the relevant articles. The figure does not indicate a one to one relationship with the theoretical models in the articles.

2.4 Work motivation

How can leaders motivate employees to participate in organizational changes, in order to achieve organizational goals, and what is the best job design to ensure highly motivated employees with excellent job performance? A motive is something that causes a person to act in a certain way. In the 1950's and 1960's behaviorists (e.g., Skinner) dominated the study of human motivation, and motivation was argued to lay outside the person in forms of reinforces and punishers (Locke and Latham, 2002). The few scholars arguing for the existence of internal motivational needs saw these needs as subconscious needs, and thereby out of the individual's control (McClelland, 1953; Locke and Latham, 2002).

The view on motivation as a conscious part of human behaviour with a focus on plans, intentions and tasks came with Ryan (1970). Years previously, Lewin and colleagues (1944) had also studied conscious goals, or levels of aspiration. However, they treated levels of aspiration as a dependent variable rather than an independent variable (Locke and Latham, 2000). In Lewin's view, level of aspiration is determined by two factors: 1) the person's relation to certain values, and 2) the person's sense of realism in regard to the probability of reaching the goal.

Most contemporary theories of human motivation assume that individuals initiate and continue practicing behaviours because they believe that the behaviours will lead to desired outcomes or goals (Deci and Ryan, 2000).

Porter and Lawler (1968) were among the first scholars to divide motivation into intrinsic and extrinsic work motivation. Intrinsic motivation is experienced by people who carry out an activity or work task because they find it interesting or because they gain satisfaction from carrying it out. Extrinsic work motivation is based on an instrumentality between the activity and the consequences, such as rewards. Any

satisfaction experienced is therefore not derived from carrying out the activity.

Motivational knowledge is a core competence in leadership and an important ingredient in most leadership theories (e.g., Yukl, 1981). Work motivation has, however, many interesting facets and components, an aspect that makes drawing such diversity together into a meaningful whole, difficult.

According to Latham (2012, p 133), it is possible to predict, explain and influence employee work motivation by taking into account seven variables. These are:

- 1) The need for physical and psychological well-being
- 2) Personal traits
- 3) Values
- 4) Context a) societal culture b) job design characteristics c) person- context fit
- 5) Cognition
- 6) Affect or emotion
- 7) Rewards and incentives

Latham's seven variables, which he used to explain work motivation, extend across theoretical and empirical data from many fields and across many psychological theories. They also cross the disciplinary boundaries of economics, organizational development, human resource management, sociology and biology.

It is crucial, both at the individual employee and organizational group level, to know what motivates a person to participate in organizational change and goal- setting and what makes them perform and improve their job tasks.

The first motivational factor on Latham's list is the *need for physical and psychological well-being*. Needs are both physiological and

psychological and a need is always the starting point for motivation (Locke, 2000). Different people are capable of prioritizing their needs in different ways. Some scholars (Turner, 1987; Haslam, Powell and Turner 2000; Haslam 2004; Latham, 2012) have stressed that work motivation is not just a product of the individual's qualities, but can also be predicted and explained by a person's need for a sense of identity and by what an individual feels compelled to do to maintain that identity. For example, belonging to a certain group or profession in a hospital setting can be an important part of an employee's work identity. Different professions can even have ethical guidelines that are not fully compatible with the organization's practice. If your work identity is primarily derived from your profession, then you may therefore only commit to goals or changes that are considered to be important or approved by your profession.

An employee who decides not to use a new standard treatment procedure or who decides not to use a new ICT tool because he/she has not had time to learn it properly, is normally not looked upon as practicing counterproductive behaviour. This type of behaviour can, however, be seen as being counterproductive by management and be seen to slow down organizational development. Employees would not necessarily feel their self-esteem threatened by this type of behaviour, as they feel it is justified or due to the new system being opposed by the group they identify with.

Employees can also avoid implementing changes in work procedures because they actively disagree with a change at an ethical, medical or professional level (for example, sending a patient home too early to avoid corridor patients).

Many group identities are grounded in different needs and values and are more likely to develop in work environments such as those found in a hospital, where there are many professions with specialized competence and work tasks.

Personal traits and individual differences is the second on Latham's list of factors that affect work motivation and the motivation to participate in change processes.

There has been a revival in focusing on individual differences in personality after the five factor model (FFM) was published (Wiggins, 1996). Individual personality traits predict and influence job searches, choice of education and profession, job performance and job satisfaction (Latham, 2012).

“Openness to new experiences” is a predominant personality trait. According to the big five theory of personality (Costa and McCrae, 1988), personality make-up means that some welcome change more than others. The level of information needed by individuals in a change process, the amount of time needed to prepare and the need for training and comfort will vary at the individual level. The literature on change management and individual traits has heavily focused on the type of personality traits that perceive change processes in a negative way (e.g., Oreg, 2006), for example those with high neuroticism scores and low openness to new experiences scores.

It is important to stress that many people have personalities that welcome change. Some theories look at resistance to change as a structural or organizational phenomenon (e.g., Coch and French, 1948; Burnes, 2015). Others see resistance to change as an innate part of individual psychological make-up (Oreg, 2013). Some employees can also have a psychological make-up that means they need change to feel they are “going somewhere”, that they are developing and to maintain high levels of work motivation.

The effect of the introduction of an organizational change, such as a new task planning system or establishing a new day care surgery department, may lead to a range of individual employee readiness or resistance to change (Oreg, Michel and By, 2013). If a change decreases a group of employees' control or freedom in their day-to-day work situation, then

there is a greater risk that this group will be against the change even where it is justified (e.g. because it reduces the risk of a mistake being made at an organizational level).

The third factor on Latham's list of factors that explain work motivation is *values*. Values reflect an employee's needs and personality (Latham, 2012). Values can be defined as the criteria people use to select and justify actions and to evaluate people and events (Shwartz, 1992). Work values are also related to personality traits. Traits are core qualities of a personality make-up and are largely inherited. Values are looked upon as being more malleable, developing through interactions with specific work and context (Blickle et al., 2011). Employees' work values and how these affect job performance, and their willingness to participate in organizational development projects, are important in all of the four articles in this thesis. When your work tasks and the way you are asked to behave in work situations match your values, job satisfaction and content will usually improve. But when these don't align with your personal values, this can be a real source of dissatisfaction, disengagement and unhappiness at work (Van Der Wal, Graaf and Lasthuizen, 2008; Jørgensen and Bozeman, 2007, Voss, Cable and Voss, 2006).

A number of authors has discussed a fear of decline in public service values (e.g. Lane, 1994; Frederickson, 1997, 2005), arguing that overemphasis on business administration values comes at the expense of the unique value set that is necessary in order to serve the public interest (Maesschalck, 2004).

Organizational identity is formed by top management's establishment of the core values and beliefs that guide and drive the organization's behaviour (Voss, Cable and Voss, 2006)

The assumed influence of business-like approaches on health sector values is a recurrent and contested issue among public administration scholars and practitioners (Van Der Wal, Graaf and Lasthuizen, 2008).

Discussions of problematic aspects of value intermixing often relate to the debate of the entrance of market values in public sector in general, and the difference between organizational values in public and private sector (Jørgensen and Bozeman, 2007; Van Der Wal, Graaf and Lasthuizen, 2008).

Work values are a part of the “institutional stress variable” in the third article on institutional stress and job performance. Institutional stress measures aspects that are negative for the employees, for example, not sharing the values of the organization you work for.

The fourth on Latham’s list of work motivational factors is *context*. Context influences employees’ motivation at three levels; a) societal culture b) job design characteristics and c) person-context fit.

Societal culture. The self is largely interdependent with a group in a society that embraces collectivism. The goals of a group have priority over those of an individual in collectivist cultures. The converse is, however, true in individualistic societies (Triandis, 2001). Hospitals can be seen as organizations where collectivism values rule (Shamir, 1990). The importance of every employee contributing to the caring and treating of all patients in the best possible way, is a core value that will serve as a guideline to many health professionals in a range of different situations. At the same time, a hospital consists of a strict hierarchical structure in which different professions have different levels of power and status (Bate, 2000). Strong individuals belonging to high-status groups that hold both knowledge and power, can affect and challenge the values of collectivism. Values can be strongly connected to professions or subcultures and it can therefore be very important how employees perceive and act upon new organizational goals. The theory of institutional logics (Friedland and Afford, 1991) can be used to discuss the findings in the articles included in this thesis. The theory of institutional logics focuses on how broader belief systems shape the cognition and behaviour of actors. According to this theory,

organizational conflicts and resistance to organizational changes are due to differences in values or worldviews of different groups in the organization.

A presentation of institutional logics and how it was used in article 1 and 2 is given in section 2.6.

Job characteristics There has been a longstanding debate between psychologists who believe that structural characteristics of the job are the primary determinants of job satisfaction and work motivation (e.g., Oldham and Hackman, 1976) and those who focus on personal attributes of the workers (e.g. Cattell and Kline, 1977). The implicit hypothesis underlying the study of individual differences is that a person's behaviour is predicted by measuring individual traits, needs, values and motives. In contrast to this position, the situationists (e.g., Herzberg, Hackman and Oldman, 1976) believe that job characteristics are a primary determination of an employee's behaviour and work motivation, hence the focus on job and organizational design (Latham, 2012).

Person-context fit. Truss and colleagues (2013) examined the influence of job design on task performance, organizational citizenship and counterproductive behaviour. Employees whose job characteristics included task variety, autonomy, significance and feedback were rated higher by their leaders, enacted more citizenship behaviours and engaged in fewer deviant behaviours. How job-design effects the work environment and job performance and the relationship between employees, workflow and the physical environment is the main topic of article 2, 3 and 4 in this thesis. In article 2, we explore the establishment of a new day care surgical department at a Norwegian university hospital, outside the hospital area. The top-management at the hospital had a vision of creating a work culture with more multidiscipline cooperation and teams, reducing the culture of tribalism

between professions and creating a work environment with a high degree of knowledge transfer.

Change principles drawn from socio-technical theory and inspired by participating action research were used to achieve this goal. The socio-technical theory developed by the Tavistock Institute (Trist and Murray, 2009) is a theoretical and a practical perspective for understanding the link between humans and technology at work. The socio-technical approach stresses the reciprocal interrelationship between humans and technology (Emery, 1978). It furthermore explores knowledge on how to shape both the technical and social conditions at work, with a goal of identifying solutions to cope better with theoretical and practical challenges of working conditions in all organizations. More than any of the other theories used in this thesis, the socio-technical approach focuses on the link between the physical context and the organization of work tasks.

A presentation of socio-technical theory and how it was used in article 2 is given in section 2.5.

The fifth variable on Latham's list of important factors that affect work motivation is *cognition*. In psychological literature, cognition is defined as being the mental process of thinking, including awareness, perception, reasoning and judgment (Latham, 2012). At a cognitive level, individuals need to understand why they should perform a certain job task or be a part of an organizational change and be motivated to act. The cognitive level may influence the evaluation of the change and whether the individual accepts or rejects the intention of the change. In organizational and economic literature, cognition and rationality have been closely linked (Eigidi, Marris and Viale, 1992). The hope was that decisions made free of emotions and based on cognition would be rational (and therefore of high quality). *Bounded rationalities* emerged in the 1980s and were coined by Herbert Simon (1982). Bounded rationality means that a decision maker always has to operate

under unavoidable constraints. For example, only limited and often unreliable information is available on possible alternatives and their consequences. The cognitive limitations of the human mind, such as limited short-term memory and analytical abilities, and the time available to make a decision, influence the quality of our decisions. The result of these limits, or *bounds*, is that even when individuals try to make a rational choice, they can choose the satisfying rather than optimal choice.

The “medical logic” that is centered on physicians’ worldview and as described in the hospital setting in article I and II of this thesis, can be seen as examples of how shared perceptions by individuals with similar backgrounds, education and work situations influence their worldview and their motivation to participate in organizational processes. All new information is filtered through this worldview. Examples of cognitive functions and how they influence the way individuals perceive the world, include the limits of our attention span, the limits of our memory and the brilliance, but also the pitfalls of human thinking and rationality (Kahneman, 2011). This knowledge is not only theoretically interesting, but it should also be a part of the practical toolbox used in organizational development and change projects.

Individuals set goals and make cognitive efforts to strategize ways to attain these goals based on needs, values and situational context (Latham, 2012). Goals are closely linked to cognition in the sense that they regulate the direction of action by focusing the attention on goal-relevant behaviour.

Goal-setting theory (Locke and Latham, 1990) is related to cognition in the sense that it is based on the premise that behaviour is regulated by conscious purposes, plans, intentions and tasks. According to this theory, type of goal- setting will influence employees’ motivation to attain the goals. Empirical results show that the highest level of effort occurred when the task was moderately difficult and that the lowest levels occurred when the task was either very easy or very hard (Latham, 2012).

We discuss, in article 1, what type of goal-setting is most useful when implementing a new health-information system in a hospital setting.

A presentation of goal-setting theory and how it was used in this thesis is given in section 2.5.

The *Affect and emotion* variable is the next on Latham's list of variables affecting work motivation. To be a worker in a modern-day organization requires highly competent social and people skills, the ability to relate to other people's demands and the ability to change, regulate or manage your emotions to make them appropriate or consistent with a situation, a role or an expected job function. *Affect*, which includes moods and emotions, influences goal level and commitment as well as the attainment of complex long term goals in the face of obstacles (Latham, 2012). A theoretical framework of work motivation that fails to take into account human emotion is therefore incomplete (Seo, Barrett and Bartunek, 2004). In view of the research emerging in neurobiology, it is clear that emotions are much more intimately involved in everyday thought processes than anyone previously had imagined (e.g. Li, Ashkanasy and Ahlstrom, 2014). Fisher and Noble (2004) reported that personal emotional processes play a key role in determining human performance. There is therefore an enormous potential for research that improves our understanding of the parameters of job performance within this paradigm (Fisher and Ashkanasy, 2000).

Keith and Frese (2005) found that metacognitive ability and emotion control are independent mediators of a person's job performance. We therefore, in article I in this thesis, code employees' reactions to an organizational change based on their emotional, cognitive and value based statements, to analyze their motivational reactions to the change process. Change processes and implementing of organizational goals, can influence the psychosocial work environment by evoking emotional reactions among employees. An emotional stressful work environment

can reduce work motivation and engagement, and increase conflicts and bullying in the work environment (Einarsen, Matthiesen & Hauge, 2009).

The last on Latham's list of seven variables affecting employees' work motivation is *rewards and incentives*.

Rewards and incentives are no longer considered, by most scholars as merely being materialized benefits such as higher pay or end of year bonuses (Latham, 2012). While financial incentives may be important determinants of worker motivation, they cannot in isolation resolve, and have not resolved all workers' motivation problems (Franco, Bennett and Kanfer, 2002). Rewards and incentives in the 21st century mean, according to Latham, something much broader and more unique to each individual employee. This variable is therefore now dependant on all the above variables.

2.5 Goal-setting theories

In this thesis, I wish to explore the relationship between organizational goal- setting, project implementation style, employees' ability to participate in both the formulation and implementation of organizational goals and changes on a range of outcomes (see Figure 2 for an overview).

In article 1, we focus on goal-setting strategies and project implementation styles that are the most useful in the implementation of organizational changes. Article I focuses on individual work motivation related to organizational goal- setting. Article 2 focuses on the importance of developing shared goals, and article 3 and 4 on unintended outcomes of organizational changes such as professional groups disagreeing with organizational goal-setting and change implementations. The following section describes the goal-setting theories used in this thesis.

Goals direct actions and behaviour. The right type of goal-setting is therefore important to organizational and personal goal achievement.

One of the dominant theories within cognition and cognitive motivational theories has been “the goal-setting theory” (Fried and Slowik, 2004). Psychology literature on individual goal-setting is highly developed and includes more than 400 empirical studies across the globe (Locke and Latham, 2002, 2006, 2013). Goal-setting theory explains the effect of goals and feedback on self-regulation, effort and planning. Goal feedback prompts people to engage in self-reflection and in self-evaluative thinking. Both goal-setting and goal commitment can be understood in terms of cognitive processes and self-efficacy (overall confidence in one’s ability to deal with a variety of situations in life), beliefs and outcome expectancies (Latham, 2012).

According to goal-setting theory, goals affect action in at least three different ways (Locke and Latham, 2002). Firstly, employees regulate their behaviour by focusing attention and behaviour on value-goal-relevant behaviour at the expense of non-goal-relevant action. Secondly, values and goals affect the intensity of one’s action. The more difficult it is to attain a valued goal, the more intense the effort will be to attain it. Thirdly, how highly goals are valued affects the level of persistence in attaining them. Locke concluded, from a review of goal-setting literature published in the 20th century (Locke and Latham, 2005), that all goal effects are mediated by knowledge and the ability to perform the requisite task. The research on goal-setting has, however, focused on how different types of goals effect performance. Specific and moderately challenging learning goals seem to be more beneficial than performance goals (Drach-Zahavay and Erez, 2002). The difference between a performance goal and a learning goal is that a learning goal is one which applies to an employee who has yet to acquire the knowledge or skill required to perform the task. A learning goal draws attention away from the result and emphasizes the importance of understanding how to perform the task (Seijts and Latham, 2005). The main difference between a learning goal and a performance goal can be seen in the strategies for solving the task.

Performance goals are mediated by the knowledge or skills the employee already possesses.

Learning goals, on the other hand, are mediated by knowledge or skills that an employee has yet to acquire. Both types of goals are moderated by ability.

It is crucial to know how, at the management level in an organization, to give employees the most efficient goals. Specific, high performance goals should only be given to employees that already have the ability and skills to attain them. Learning goals should, on the other hand, only be given to employees that lack the requisite ability to perform the task. According to goal-setting theory, employees without goal commitment will not strive to attain anything at all (Latham and Locke, 2007). Goal commitment is therefore particularly critical when the goal is difficult.

Achievable goals are more motivational (Fried and Slowik, 2004). Another factor that influences an individual's goal behaviour is task specific confidence, which is often referred to in the literature as "self-efficacy" (Bandura, 1994). Studies of goal conflicts indicate that personal goals mediate organizational goals (Latham, 2012). This can be seen in relation to how goal commitment influences performance. According to the goal-setting theory, two key factors are facilitating goal commitment (Locke and Latham, 2002). First, it is the importance of the outcomes that individuals expect as a result of working to attain the goal, and second, the belief that they have the ability (self-efficacy) to attain the goal. Therefore, an organizational goal that is both difficult and not important to employees, will according to this theory not create high levels of goal commitment.

Goal-setting and goal achievement studies carried out at an organizational level, should also consider the contextual condition of groups or individuals in the organization who believe that their goals are competitively rather than cooperatively related. This may be a very

relevant issue in a hospital setting of professional cultures and limited resources. Goals may be perceived as being cooperatively, competitively or independently related. Cooperation is most likely to occur if two or more people view the attainment of their goals as being positively correlated and the opposite if they view the attainment of their goals as negatively related. They will then be more competitive.

People are likely to withhold information and ideas where goals are viewed as being competitive between or among parties, professions or departments. They may even obstruct the goal process of others (Stanne, Johnson and Johnson, 1999). Integrating cognitive, psychological and organizational theory into understanding organizational goal achievements may increase the ability to explain heterogeneity, goal difficulty and goal commitment at the organizational level (Shinkle, 2011).

2.5.1 Hairy goals

The qualitative interviews done in this early phase of the project revealed something interesting; top management used a very special type of goal-setting regime when implementing the advanced task planning system in the pilot departments, a type of goals called hairy goals. The top management had developed this type of goal setting to avoid professional conflicts and different institutional logics to stop the change process prematurely. The purpose of article 1 was to examine the role of hairy goals on employee motivation in change management. In this article, we ask whether vague, visionary hairy goals can have a positive effect on change processes. We also examine whether hairy goals, performance goals or learning goals should be used by leaders in the implementation of organizational changes.

“Hairy” goals are associated with something which is “difficult to deal with, or to comprehend”. The term “hairy goals” was used by Collin and Porras (1994) in their best-selling book “Built to Last”. “Hairiness” is one

of the four elements of goals that are referred to by the abbreviation “BHAG”, “Big Hairy Audacious Goals” and requires “a certain level of unreasonable confidence”. Collin and Porras refer to the “man on the moon” speech by John F. Kennedy in 1961 as an example of the goal itself becoming the motivating mechanism.

The main characteristics of the hairy goals used in article 1, are that they are “big” in the meaning that they are considered difficult to achieve, the goal posts are moved while efforts are made to achieve the goals, there is little emphasis put on documenting the relationship between goals and performance targets, and positive effects are taken for granted or considered to be a long-term result of the project.

The goal-setting theory does not suggest that using goals that seem unrealistic, ambiguous and that do not document the relationship between goals and performance, can be advantageous. The common understanding of “hairy goals” does however consider these types of goals to be advantageous (see Collins and Porras, 1994, Ezekiel, 2013 and Nanji et al., 2013). Criteria relating to performance goals and learning goals are relaxed when using hairy goals, they are used to achieve a high degree of flexibility and to ensure the support of the employees.

In study 1 in this thesis, we explore how hairy goals are a type of goal-setting that might be useful in multi-rational organizations that consist of different professions with different work situations, as for example in a hospital. This is because this type of goal-setting is visionary in respect to what is to be achieved but vague in respect to how to get there. This allows employees to develop their own interpretation of why it is important to achieve the goal. This type of goal-setting might be useful in organizations where important stakeholders agree on the overall values and goals of the organization, but disagree on how to get there.

Hairy goals are very different from the type of goals recommended by goal-setting theory (Lock and Latham, 1990) because they are vague,

abstract and not linked to feedback and specific performance outcomes. We therefore, in this work, wanted to explore whether hairy goal-setting could, under certain conditions, be a useful change strategy. We also wanted to explore whether this type of goal-setting is sufficient to ensure that employees achieve the goals or whether hairy goals must be supplemented or changed into learning or performance goals at a stage in the change process.

2.6 Institutional logics

The roles of strong professional interests in organizational changes are a theme in article 1, 2 and 3 of this thesis. In article 1 we explore the different logics and rationalities of different professional groups to see how these affect their motivation to act to implement a new task planning system. We, in article 2 in particular, explore how professional identity and institutional logics affect organizational change. Actions and projects that serve medical logic are normally seen as legitimate and patient well-being is usually the dominant work value of hospital employees. However, self-serving actions, political influence and power struggles to protect individual interests or the interests of professions, departments or patient-groups do exist in a hospital environment (Chang, Rosen and Levy, 2009). This is shown, for example, by the employee-reporting of incidents in which professional conflicts threatened patient safety recorded in Article 2, the empirical case study of a new type of hospital organization. In article 3 and 4, we discuss the potential outcomes of a work environment where different professions do not share common values and worldviews on long term change processes.

The need to belong to and share the same worldview as a social group is also important in the theory of institutional logics (Reay and Hinings, 2005).

New-institutionalism theorists use the concept “institutional logics”. This concept focuses on how broader belief systems shape the cognition of behaviour of actors (Friedland and Alford, 1991). Thornton and Ocasio (1999, p.804) define institutional logic as the socially constructed, historical patterns of material practices, assumptions, values, beliefs and rules by which individuals produce and reproduce their material subsistence, organize time and space and provide meaning to their social reality. According to Denis, Langley and Rouleau (2010), the hospital is a particularly “messy” world in which multiple groups with different values, interests and expertise compete for influence. Even in a unitary management hospital, the influence of those with the highest level of professional expertise, experience or other forms of personal authority play a part regardless of whether these individuals hold formal management positions. This combined influence of multiple leaders constitutes the plural, or distributed, leadership of hospital units (Denis, Langley and Sergi, 2012).

We perceive information that supports our worldviews, our values, our work situation and our profession in a way that is very different from the way we perceive information that relates to other professions and other people’s opinions and work situations. How logics can focus the attention of key decision-makers on a particular set of issues and solutions has been emphasized by one variant of institutional logics (Ocasio, 1997). Logic can act as a bounded rationality because other important factors can be overlooked. Institutional logics can therefore collide in a change project, because the goals of the project are based on a different worldview than those of some professions or employee groups.

The Canadian researchers Trish Reay and Bob Hinings (2005, 2009) have carried out a number of studies on intuitional logics in the health sector. They focused on the importance of understanding organizational fields composed of actors who make up communities, and on the interaction between these actors and the differences in the way they and other actors perceive the world. They brought this together in the

concept of “*competing logics*” and used this to understand organizational change and employees’ motivational responses to the change process. Actors hold values, beliefs, cognitions and affective responses that are consistent with certain institutional logics and these affect their responses to organizational goal-setting and attempts to implement changes.

The dominant institutional logic in most health care systems throughout the western world has been the logic of “medical professionalism”, which is centered on the worldview of physicians (Scott, Ruef, Mendel and Caronna, 2000). Physicians are the only gatekeepers to the health system. Patients wanting to access any health service are required to visit a physician first. Only through their referral can patients get access to medical treatment (Reay and Hinings, 2005). Many countries have, since the 1990s, been going through governmental reforms inspired by new public management (NPM) practices.

These reforms include cost-cutting and improving efficiency through the introduction of new financial systems (Osborne and Gaebler, 1992; Douglas and Callan, 1993). According to Reay and Hinings (2005), these NPM inspired changes introduced a new language and a new logic to health organizations, namely “business-like health care” or “managerial logic” which focused on efficiency, effectiveness and customer satisfaction. Business-like health care logic can be in opposition to the logic of medical professionalism. The immense power of the logic of medical professionalism will therefore always be challenged as long as those who pay for services (government) determine how the funding system is to work. However, physicians are still key actors holding significant power in health organizations. A strong value for most physicians is to remain autonomous, accountable to their own profession and ethical guidelines. The role of competing institutional logics has been used as an explanation for conflicts among professional groups in a hospital setting (Reay and Hinings, 2006).

Recent studies argue that professions are not only mechanisms for, but also primary targets of, organizational change (Muzio et al., 2013). This is particularly true when professional identities are increasingly framed around logics of efficiency and commerce. The interaction of health professions in the hospital sector is therefore characterized by an authority structure based on health and managerial responsibilities.

2.7 Socio-technical theory

In contemporary organizational theory, it is common to view organizations as something that are never fully established, but always in the process of becoming (du Guy and Vikkelsøy, 2010), and tasks are not bundles of activity to be undertaken, but results of an interpretative process. Actors are not engaged in practical work, but are making sense of and enacting in an unstable environment. In a more traditional organizational design, change was viewed as specific modifications of an organization's key features, its core tasks, its authority structure or its allocation of resources (du Guy and Vikkelsøy, 2010). This view of organizational changes might be useful to keep in mind during change processes in the health sector, with so many different professional groups with so specialized work tasks.

The importance of focusing on the relationship between the technical and the human side of structuring a good workflow, and the value of shared goals, multi-skilling and autonomous work groups, are all drawn from the socio-technical approach and the change principles used in the case study in article 2 in this thesis. The goal was to use the change principles of the socio-technical approach in participation with action research, to establish a multidiscipline work environment with a focus on creating an outstanding work environment that achieves both the best possible patient treatment and efficiency and employee job satisfaction. The wealth of 'people approaches', very popular in organizational theory from the 1960s, place value on human growth and fulfilment as well as on job performance, with a tendency to believe that there is a causal

connection between the two (Leavitt, 1965; du Guy and Vikkelsø, 2012). As such ideas began to develop, the classic organizational theories such as the socio-technical approach, with focus on work tasks, structure and technology, became less dominant.

New organizational theories had different focal points, and organizations were now seen as cultures (Schein, 1985), learning systems (Agyris and Schon, 1978) or as sense-making systems (Weick, 1978), interest in the production side of organizations was left to researchers with organizational management and quality improvement focus (du Guy and Vikkelsø, 2012). The goal of the participating action research in article 2, and the agile project management style used to implement a new task planning system in article 1, can be seen in relation to bringing back some of the classic concerns in organizational theory, such as defining 'core tasks', 'distribution of work' and 'exercise of authority'.

Work behaviour is influenced by the work environment, the context within which it occurs (Lewin, 1951). The view that social and technical systems are closely linked, affecting each other both ways, was part of the new organizational knowledge that led to the paradigm shift brought about by the Tavistock group in organizational research and practice after World War II.

The socio-technical approach, developed by the Tavistock Institute as a theoretical and practical perspective for understanding the link between humans and technology at work, stressed the reciprocal interrelationship between humans and technology (Emery, 1978).

Emery (1969, 1978) defined technical systems as including all sorts of technology, materials, mechanization and automation of the organization. This included unit operations, centrality of operations, spatial layout, physical work settings, productivity and quality of the work as a whole. The social systems included tasks, task interdependency, occupational roles and grouping of roles into teams. It also included how work tasks were coordinated and controlled, the effectiveness of production,

delegation of responsibilities and the degree of reliance on worker expertise in complex judgments and decisions. It furthermore explored new knowledge on how to shape both the technical and the social conditions at work, a clear normative goal being to identify solutions that cope better with the theoretical and practical challenges of working conditions in all organizations.

The Tavistock Institute made its first major contribution to socio-technical theory in 1949, when its researchers began a number of field projects in the British coal industry (Trist, 1963; Trist, Higgin, Murray and Pollock, 1963; Pasmore and Khalsa, 1993). One of the main conclusions of these studies was that productivity increased when miners were allowed to perform a variety of tasks and develop multi-skills.

Work systems should be conceived as a set of activities making up a functional whole, not as a collection of individual tasks. The work group was also considered to be more central than the individual job-holders, and work groups with an internal regulation of the work system were preferable to external regulation. Following this, the design philosophy of work systems should be based on a redundancy of functions rather than on a redundancy of tasks. Groups need a variety of skills if they are to be flexible and able to respond to change. Multi-skilled workers and self-directing groups should therefore actively participate in the organization of work tasks and work flow. This will also increase the ability to adapt to changing external conditions, because the actors in change processes have first-hand knowledge of the challenges and problems in the work situations. The movement of power and influence should therefore not be a top down process, but a participating process at all levels in the organization.

In “The assembly Line: Its logic and our future,” Emery (1978) defined three main design principles for creating a socio-technical system. The first is that the best design for a productive system is the one in which each part of the system embodies the goals of the overall system. The

second is that the system should be self-managing to the point that work groups can cope with their problems by rearranging their own use of resources. The third is that the best design is the one that recruits and develops its constituent parts so that they have the intrinsic properties suited to the demands of the position they occupy. At the lowest level, this third principle would indicate designing-in a degree of multiskilling. At a more sophisticated level, the human potentialities for reasoning, creativity and leadership that might be expected in any group of human beings, would be taken into account (Emery, 1978). More simply put, a socio-technical design aims to create a system of multi-skilled members, so that they can help one another when problems arise and have the autonomy to solve problems at the lowest possible level (Pasmore, 1995).

The second design principle has proven to be the most important principle in distinguishing the socio-tech system's paradigm from other approaches to work design (Pasmore, 1995). Emery (1993) pointed out that only this second principle permits adaption to change by focusing on the development of democratization, participation, individual development, task variety and work autonomy. These are central tenets of this principle.

Emery (1978) was also a pioneer in specifying the psychological requirements at work. These included control over work processes and tasks, the aim of completion, the need for learning and variety and the need for perceiving your work tasks as being interesting and meaningful.

Herbst (1974) also contributed to the design of change principles for the socio-technical approach. He developed the principle of "minimal critical specification". Workers should be told what to do, not how to do it. This change principle has a clear normative goal of safeguarding employees' autonomy. Herbst also introduced a variety of alternative, non-hierarchical organizational arrangements, including autonomous work groups, matrix and networks.

Cherns (1976) published an article in *Human Relations* in 1976 describing the numerous socio-technical design principles. The principles of compatibility, variance control at source, multi-functionalism, boundary location, information flow, support congruence, human values and incompleteness have been used by, but have not, become the mantra of all who have been involved in socio-technical design (Pasmore, 1995).

The socio-technical approach was one of the first theories that focused on the importance of autonomy for employees and on the developing of a structural organizational model that makes democratic processes, autonomy and meaningful work tasks important elements in work motivation and performance. According to the socio-technical approach a detailed specification of particular organizational arrangements is the best starting point for action. Good solutions are based on detailed descriptions. Organizational development was a systematic description and evaluation of three equally important dimensions, the organization – environment relationship (in this setting hospital–society), the group-to-group relationship (professional relationship within the hospital) and individual-organization relationship (employee to hospital).

2.7.1 Agile project management

The qualitative interviews done in this early phase of the project revealed something interesting when it came to top managements use of both goals- setting and project implementation style. Top management of the regional health authorities decided to use agile project management instead of the traditional project management in the implementation of a health-ICT system. The purpose of article 1 is to examine the role of hairy goals an agile project management on employee motivation in change management. We followed the implementation of an advanced ICT task planning system in 8 pilot departments in a hospital region.

If one succeeds in developing and integrating better health information systems one can save time and money, distribute work tasks more efficiently and treat patients with complicated diagnoses acquiring medical help from different departments and professions in a more streamlined and effective way (Kellermann and Jones, 2013). Task planning is an important strategic and operational management function that is decisive to the efficiency of an organization. Task planning enables management to respond to needs for change, to prioritize scarce resources, to allocate the right resources to the right place at the right time, to stimulate knowledge transfer and learning and to distribute a sensible division of tasks between leaders, professionals and patients.

The combination of hairy goals and agile project management was a relatively new project management style for the public sector. We were therefore interested in examining how this influenced individual motivation and the change project results. A discussion of using agile project management versus traditional project methods in implementing organizational changes was therefore one of the research questions of article I.

Elements of the socio-technical approach have inspired other motivational, work design and change theories, especially the early focus on the importance of autonomy and democratic processes (e.g. the self-determination theory). The approach has influenced the project management style used in software implementation projects (Coiera, 2006).

Norway has, in recent years, invested heavily in major public sector ICT upgrading projects such as for the Norwegian police force, the Norwegian Labour and Welfare Administration (NAV) and the Norwegian Armed Forces. The problems that these projects have encountered have been widely reported in the media, including the NAV ICT system which has cost more than three billion Norwegian kroner, but is still not in use (E-24, 2014; DN, 2015).

Implementing a new ICT system in a public sector organization is a complex change project. The scope of these projects has a tendency to grow almost as quickly as any real progress is made. Surroundings change, budgets change, resources and schedules change and competence and customer needs change during the process (Karlesky and Voord, 2008).

A socio-technical approach to ICT system implementation is based on an understanding of, and takes into account, the unexpected consequences of bringing humans and technology together. Even the most intricately designed technical solutions can, when placed in human hands, end up performing in contexts undreamt of by the designers (Coiera, 2006) and in ways that were not intended. This can lead to a wide range of unanticipated errors, failures, unexpected costs, misuse and system breakdown or systems never being implemented.

The socio-technical inspired agile project management style views project failure as the greatest expense in new software implementation. The loss of all the time, energy and resources that have been invested in systems that will never be implemented or function as planned. Agile project management views too much planning, design and documentation as being unnecessary and has the goal of building a system that is closely aligned with feedback from customers and users (Karlesky and Voord, 2008). In contrast to agile project management, traditional project management emphasizes specific goals and methods, action plans, deadlines, project meetings, reports and feedback. Traditional project management involves disciplined and deliberate planning and control methods. Tasks are completed in a sequential order requiring a significant planning upfront (Hass, 2007).

Traditional project management is usually used in the public sector in new software implementation (Chin, 2004). Traditional project management views change and rework as the most expensive aspects of software development. A central element of this type of project

management is therefore extensive upfront planning, design and documentation to ensure unexpected changes are limited or prevented (Hass, 2007).

The definition of agile project management is a focus on continuous improvements of the product and processes, on team input and a close relationship with software developers to ensure that products reflect customers' needs (Highsmith, 2009). It is important to have short interactive cycles in a test-driven design like this. In this, the users of the ICT system (clinical and administrative personnel in a hospital setting) become actively involved in establishing, prioritizing and verifying requirements. It is also very important, in this type of project, to provide an ICT system that actually does support and help task planning and work flow in day-to-day work situations. A true agile process will take several cycles to complete. A finished product cannot be expected at the end of the first cycle. The project must therefore be self-organizing and the teams must be left to decide the best way to develop the ICT system and to achieve optimal advanced planning and work flow. This type of implementation allows effectiveness and methods to be continuously reviewed, allows employees' knowledge to be utilized and allows a close relationship between all important stakeholders to be maintained throughout the whole process (Boehm and Turner, 2005).

2.8 Work stress, bullying and the psychosocial work environment

Participating in an organizational change project that you as an employee disagree with, do not understand the point of or, even worse, which is a change that crosses your values and beliefs, can cause work related stress (Burnes, 2010).

Hans Seyle is frequently claimed to be the father of the stress concept, however, in his pioneer 1936 paper (Seyle, 1936), the term "stress" was

not used, but simply described as a non-specific adaption or maladaptation in rats exposed to various stimuli such as cold, surgical injury or shock (Ursin and Eriksen, 2004). The concepts “stress” and “stressors” appeared later in his work (Seyle, 1950), since Seyle used the word “stress” on the response rather than the more correct word strain, he had to invent a word for the load or stimulus that triggered the response, this is the origin of the term “stressors” (Ursin and Eriksen, 2004).

Ursin and Eriksen (2004) developed the cognitive activation theory of stress (CATS) after a long series of experiments and theoretical papers with data from both animals and humans. The term “stress” is normally used for four different aspects of “stress”; stress stimuli, stress experience, non-specific, general stress response and experiences of the stress response (Levine and Ursin, 1991). These four meanings of stress may be measured separately. The general response to stress stimuli is a non-specific alarm response, eliciting a general increase in wakefulness and brain arousal, and specific responses to deal with the response for the alarm (Ursin and Eriksen, 2004, p. 571).

The unpleasantness of the alarm is no health threat, but if sustained, the response may lead to illness and disease (Eriksen, Murison, Pensaard and Ursin, 2005). The alarm elicits specific behaviours to cope with the situation. The real concern is sustained arousal occurring when there is no solution to the problem (Eriksen et al, 2005). All stimuli are evaluated by the brain, and psychological and emotional “loads” are the most frequently reported stress stimuli (Levin and Ursin, 1991).

According to CATS it is the individual’s experience of the demands and the expectancies of the outcome, which determine whether the demands will cause stress responses (Ursin and Eriksen, 2004). Expectancy is a brain function of registering, storing and using particular information that one event (stimulus) precedes a second, or one response leads to a particular outcome. The response outcome expectancies are

defined as either positive, negative or none. This offers the formal definitions of coping, helplessness and hopelessness (Ursin and Eriksen, 2004). Coping is a positive outcome expectancy, and in the CATS model of stress it is not the act of trying to cope, but the results of coping that count (Ursin and Eriksen, 2004). *Helplessness* is the required expectancy that there are no relationship between responses and reinforcement, and *hopelessness* is the required expectancy that all or most responses lead to a negative result (Ursin and Eriksen, 2004).

The experience of feelings of stress is perhaps the most relevant in human stress research in working life, job stress questionnaires are often constructed for this principle (Ursin and Eriksen, 2004), asking whether a working condition or a relationship at work is a “source of stress for you” (e.g. Cooper’s stress questionnaire, 1996).

A constant stressor in a work situation which is due to something an employee perceives as being a negative situation is, in most stress theories, perceived as being unhealthy over longer periods of time (Lazarus and Folkman, 1984; LePine et al., 2005). Many scholars have focused on the importance of *uncertainty* in work related stress. Jackson, Schwab and Schuler (1986) went so far as to claim that stress is the uncertainty that occurs in the work environment. It is therefore not hard to see that a work environment fueled by conditions such as uncertainty around organizational decisions, strategic goals, ambiguity or disagreement about work performance expectations, procedures or roles and by the ever present dilemma of scarce resources, can create a high level of institutional stress among employees (Ferris, 2002).

How different stressors are measured will affect outcomes. More recent studies, based on the theoretical work of Lazarus and Folkman (1984), suggest that there are two basic dimensions in any stressor, the challenge and the hindrance dimension (Le Pine et al, 2005; Gilboa, et al, 2008). A meta-analytic test of how the challenge stressor versus the hindrance stressor affects job performance suggests that the stressors

associated with threat or hindrance will (under normal conditions) have a direct negative effect on performance. Strain and motivation will also have a negative indirect effect on performance. The second dimension, reflecting challenge stressors, tends to have a positive direct effect on performance, as well as offsetting indirect effects on performance through strain (negative) and motivation (positive) (LePine, Podsakoff and LePine, 2005).

Studies that operationalize stress as role ambiguity, role conflict and role overload, generally support the negative relationship between stress and performance (Sullivan and Bhagat, 1992; Gibola et al, 2008).

One of the worst psychosocial work climate an organization can offer an employee, is one consisting of high levels of conflicts and bullying (Einarsen, 2000). In this thesis, I define the term ‘psychosocial work environment’ as the socio-structural range of opportunities that is available to an individual employee to meet his or her needs of well-being, productivity and positive self- experience in the work setting (Peter, Siegrist and Hallqvist, 2002). Agervold (2009) found that poorer levels of psychosocial work environment correlated positively with workplace bullying.

The psychosocial risks described as risk factors for the psychosocial work environment, include psychological job demands (workload, work pressure), work decision latitude (control over the work tasks), lack of social support from colleagues and supervisors, an experienced imbalance between high effort spent at work and low reward received, and whether the treatment of workers by supervisors and co-workers are fair, polite and considerate (Agervold and Mikkelsen, 2000).

In this thesis, work place bullying is defined as repeated and persistent negative acts towards one or more individual(s), which involve a perceived power imbalance and create a hostile work environment (Einarsen, 1996; Zapf et al., 1996; Hoel and Cooper, 2000). As for the content of bullying, it may consist of a range of different negative

behaviours, including social isolation or silent treatment, rumours, excessive criticism or monitoring of work, withholding of vital information or depriving responsibility, and verbal aggression (Einarsen, 1996; Zapf et al., 1996; Keashly, 1998; O'Moore, 2000).

The major difference between 'normal' conflict and bullying is not necessarily what and how it is done, but rather the frequency and longevity of what is done (Salin, 2003). Einarsen and Skogstad (1996) stress that bullying is repeated, persistent and continuous behaviour. A typically single negative act is not considered bullying, but a pattern of negative acts over a prolonged period can be considered as bullying. Bullying is seldom explained by one factor alone, but is rather a multicausal phenomenon (Zapf, 1999). Because this thesis is written mainly from a management perspective, the emphasis is on organizational, contextual and work environment factors, and to some extent group-level factors, in explaining bullying. Although management has little control over individual personality traits and characteristics, except in recruitment and promotion decisions, work environment factors are to a higher degree under the control of management, who may exert considerable influence on organizational structures, workflow, reward systems and job design and the consequences of negative behaviour (Salin, 2003).

Thus, organizational and structural explanations for, and factors associated with bullying, are normally classified into three groups (Salin, 2003). First, enabling structures or necessary antecedents, e.g. perceived power imbalances, low perceived costs by bullying behaviour, and high levels of dissatisfaction and frustration. Second, motivating structures or incentives e.g. internal competition, reward systems and expected benefits. Third, precipitating processes or triggering circumstances, e.g. downsizing and restructuring, organizational changes, changes in the composition of the work group or distributing of resources and demands among different employee

groups. Research indicates that bullying is often an interaction between different structures and processes from all three groupings.

Hospitals have been described as large and hierarchical organizations, and there is some evidence that bullying has been shown to be more frequent in these types of organizations (Einarsen and Skogstad, 1996), as well as in bureaucratic organizations (Thylefors, 1987; Ariza-Montes et al. 2013). Einarsen and Skogstad (1996) have pointed out that the size and length and formality of decision-making processes in these companies make the individual less visible, thus reducing the risks for the employees performing bullying of being caught, punished or socially condemned. The organizational culture may also be used to explain the level of workplace bullying. In some organizations, bullying and other forms of harassment seem to be more or less 'allowed' as such events are met with higher levels of tolerance than in other work environments. Other researchers have focused on conditions that may provide a bad starting point for a healthy psychosocial work climate, such as dissatisfaction and frustration over the working situation in general and dissatisfaction with the organizational climate. This includes organizational constraints and a lack of autonomy over one's own job and how to perform one's job tasks (Einarsen et al., 1994; Zapf et al., 1996; Spector, 1997), lack of clear goals (Vartia, 1996), and role conflict and ambiguity (Einarsen et al., 1994; Spector, 1997). Dissatisfaction with top management's decision-making, lack of influence of important goals-setting and prioritizing and lack of clarity and control may lead to more irritation, lower tolerance and a search for more stimulating activities, thereby providing the necessary conditions for bullying (Salin, 2003). Moreover, deficient internal communication, such as poor information, lack of mutual conversations about work tasks and goals among different occupational work groups or professions, and a poor communication climate have been shown to correlate with bullying (Einarsen, 2005). Finally, a high degree of stress may also be conducive to dissatisfaction and bullying (Salin, 2003).

Studies have shown that employees with a high workload, time pressure and a hectic work environment are more prone to report bullying than others (Appelberg et al., 1991; Einarsen et al., 1994; Hoel and Cooper, 2000). The effects of strain can thus partly be explained by the fact that strain increases job dissatisfaction and lowers aggression thresholds for the concerned individuals, and partly by the fact that it does not allow for time-consuming conflict solving.

Pearson et al. (2000) argued that little time to perform ones' work tasks and a high time pressure allow little time for the social 'niceties' of work life, and therefore increase the risk spiraling interpersonal conflicts. Bullying and negative organizational behaviour can also spring from a desire to achieve organizational advantages at the expense of other groups or individuals.

According to empirical research, nurses and healthcare professionals are exposed to considerable risk of violence related to workplace trauma (Rippon, 2000). Bullying is an example of several workplace traumas that nurses can experience. Nurses seem to experience higher levels of bullying compared to other healthcare staffs (Quine, 2001).

Nursing managers, fellow nurses, other medical staff, or patients and their families are potential relational sources of bullying in healthcare settings (Hockley, 2002). In article 4 in this thesis, we had a sample of 2946 registered nurses. The aim of this article was to increase understanding of workplace bullying and its relation to work climate and different outcomes among nurses. We also wanted to examine a proposed bullying model including both job resources and job demands, as well as nurse outcomes reflected in job performance, job satisfaction, and work ability.

According to the JD-R model, hospital employees have to deal with a range of challenging work situations. These stressors can include giving adequate responses to the physical and psychological status of patients. Some studies indicate that job demands have been increased by the

introduction of sophisticated technologies and health information systems, specialist shortages, high workloads and lack of the social support of colleagues and supervisors (Bakker et al, 2000).

Hospitals have organizational members who have high educational and competence levels and close relationships with their beneficiaries (patients and their families). Managerial or political processes that determine which patients should be prioritized, and the best use of scarce resources (such as specialists) and evidence-based standard treatment procedures, may be beyond the direct control of specific employee groups or professions. These are, however, processes that effect the day-to-day work situations of these groups.

This might create a type of stress labeled as institutional stress used in article

The main interest in this article was to investigate if organizational members perceive institutional stress related to the organization's policy, or by experiencing too little power and influence over their work situation, or by having conflicting values with the organization, and how institutional stress influenced job performance. Disagreement with the organization's strategy, management practices and decision priorities, may be relatively permanent characteristics of how the health professionals perceive their job situation, and therefore a burden they have to cope with over long periods of time, while doing their core work tasks. The health professionals can work through their managers and unions to try to change goals and priorities of the organization, but these are usually long-term processes.

Job performance is measured by how satisfied employees are with the qualitative and quantitative performance of their work tasks. Their ability to solve problems and the opportunity to have good work relationships with colleagues are also elements of job performance (Lindstrøm et al., 1997).

We hypothesized that institutional stress decrease self-perceived job performance. We also hypothesized that autonomy, competence and social support mediated the relationship between institutional stress and job performance.

According to the JD-R model, not all job demands are necessarily negative, but they have the possibility to turn into job stressors if they acquire high effort and are associated with high costs. Job resources are necessary both to ‘get the job done’ but also important in their own right (Hobfoll, 2002).

3 Summary and results of the four articles in this thesis

3.1 Summary Article 1 - Hairy Goals in Change Management: The Case of Implementing ICT Supported Task Planning in a Hospital Setting.

Hospitals have, in the past five to ten years, started to implement new, advanced digital task planning systems that can be integrated with other relevant ICT programs (such as patient journal systems, employee Outlook calendars, intranet calendars and surgery planning programs). The intention is to improve the logistics of daily tasks in work units and ultimately the quality of treatment and care as measured by established quality indicators. This strategic change is an example of how managers are trying to improve hospital performance by taking advantage of the opportunities presented by implementing new technology.

There are many reports of the failure of large-scale ICT projects that were designed to ensure a well-functioning ICT support for a range of health services. Developing small scale ICT systems in close relationship with the users has been seen as a possible remedy to the many reports of failed large scale ICT projects. This approach is also called user-led innovation (Ellingsen & Monteiro, 2012). Agile project management is also a type of user-led innovation. Agile project management focuses on continuous improvements of the product and processes, on team input and a close relationship with software developers to ensure that products reflect customers' needs (Highsmith, 2009).

The technological development in health communication systems changes the premises for information flow and task planning in the provision of the best possible treatment to patients.

The study is based on a qualitative case study. In this study, 46 in-depth interviews were carried out with employees of four different hospitals in eight pilot departments. We followed the implementation of a new task planning system in three different phases. The interviews with key personnel were carried out over a period of one year.

We wanted to explore the following research questions in this study:

1. Can the use of hairy goals have a unifying effect on employees from different professions and subcultures in the implementation of a new ICT supported advanced task planning system?
2. How do hairy goals and the agile project style effect employees' motivational reactions during the implementation process?
3. Do the employees define learning goals for coping with hairy goals?

The main focus of this case study was the exploration of the impact of hairy goals and agile project management in an organizational change process of advanced task planning system development and implementation in a hospital setting. Hairy goals (Collin and Porras, 1994) are associated with four common denominators; the goal is “big” in that it is considered to be difficult to achieve, the goal post is moved, meaning that operational targets are changed while efforts to achieve the goal are ongoing, little emphasis is placed on documenting the relationship between goal fulfilment and performance targets, and positive effects of the goal are taken for granted or considered a long-term result.

The implementation of a new health information system (advanced task planning) in eight pilot departments in four different hospitals was followed in article I. This implementation was split into a number of phases. The *formulating phase* (phase 1) created the goals for the implementation of a new task planning system and formulated a vision

for future organization and work planning. This phase was the strategic section of the goal formulating process. The next phase was the *start-up phase* (phase 2). The regional management level informed the local hospitals about the project in this phase.

Organizational structure does, however, mean that regional level management has no automatic authority to enforce projects upon local hospitals. It was therefore important to give the advanced task planning project a content that could convince other stakeholders of the credibility, legitimacy and solutions of the new ICT system. Information meetings were held in this phase and local pilot departments were established. The advanced task planning system and integration process for the different ICT information systems started taking shape.

In the *implementation and evaluation phase* (phase 3) there was a trial and error process for a range of different technical solutions. The pilot departments were given a number of different ICT integrations to try out. There was a close relationship between the pilot departments, the administrative personnel and the ICT system developers.

In summary, the findings show the general responses of our informants in phase 1 to be very optimistic and full of hope. However, they also contain some scepticism about the viability of arriving at a new system that could improve the old ways of sharing and planning work tasks. At a cognitive level, all informants at all levels saw the need for improving long-term planning to achieve a better and more predictable work situation both for themselves and for better patient care. The informants seemed to interpret the goals of this project in terms of their own work values.

The results of phase 2 suggest that beliefs (or cognition) about the process of implementing the new planning system might not be as positive as the emotions evoked by the phase 1 visionary hairy goals. One group of informants (employees responsible for implementation of the new system in the pilot departments) moved from generally positive

emotions in phase 1, to negative affect and emotions in phase 2. Better patient care and more appropriate distribution of work tasks between professional groups were common values mentioned in this phase.

Some informants focused on the need for better planning systems and saw the integration of systems and better task planning as an important organizational goal. They mentioned mistakes being made in the current planning processes and patients not meeting the same doctor at follow-up appointments because long term planning hardly existed. Physicians were drowning in increasing levels of administrative work. In phase two, the informants reported becoming passive, annoyed and frustrated because they did not understand what was expected of them and because they had prior experience with new ICT tools that had not lived up to expectations.

To summarize, the phase 2 responses of employees responsible for the project in the pilots and their administrative support, showed the expression of a great deal of frustration and negativity due to lack of resources, lack of clear goal- setting and information about the project implementation style. The informants still expressed support for the goals of the project, both at a value level and a cognitive level. Our results however suggested that the change process itself was creating the negative emotions.

To summarize, the phase 3 responses of the pilot departments that managed to implement the new task planning system and get rid of shadow systems and the old ways of task planning, showed high levels of satisfaction with the new ways of distributing work tasks and the long-term planning possibilities that the new system provided. Our results from all the three phases showed that employee reactions to the change process were neither negative nor positive, but varied in the three dimensions (emotions, cognitions and values), reactions being dependent on how our informants perceived the change process, the

resources being put into the change process and the changing of goals during this process.

Hairy goals seem to have a unifying effect in an organizational setting which is made up of different values and rationales. These goals motivate employees to act at the beginning of a change project and hinder goal conflicts, resistance and frustration. Agile project implementation, which is typically used in bottom-up software development organizations, seems to be a useful strategy, useful also in bureaucratic organizations such as public hospitals. It, however, needs to be communicated and understood in organizational settings in which employees are expecting a traditional project management.

Our findings indicate that hairy goals need to be transformed into learning goals at some point in the implementation process, if employee motivation is to be maintained during the project period, and to secure feedback and engagement following milestone attainment. Our study indicates that goal-setting practices must change with the different phases of a change process if goals are to be useful.

Our results suggest the need to see the change process as a single continuous process of a number of different stages. All important stakeholders should be part of the whole process from the beginning to the end.

If all stakeholders are involved in all stages of the change process, then information, objections and good ideas can be shared and addressed continuously. In our case, much of the frustration and passivity reported in phase two of the implementation process could have been avoided by stronger top management involvement in this phase.

In change processes, it is not uncommon that top management sets goals and project plans which lower management is responsible for implementing. Our results show the vulnerability of such a change

strategy. Successful change implementation (e.g. a health ICT system) requires flexibility in both technical and practical solutions and in goal-setting strategies throughout the different phases of the change process.

3.2 Summary Article 2 - Utilizing participating action research design principles drawn from the socio-technical theory to establish a multidisciplinary day care surgery department

This single case study reports on the establishment of a multidisciplinary day care surgery at a Norwegian University Hospital utilizing participating action research design principles drawn from the socio-technical theory. Data was collected through mixed methods including stakeholder analysis, document studies, observations of meetings, semi-structured interviews and participating group methods. The senior management at the hospital had decided to implement a department that diverged from organizing around professional disciplines, and this decision evoked strong resistance among several professional groups in the first phases of this project. This case follows the implications of the decision to establish a multidisciplinary day care surgery through reorganizing location, staff and management structures. The findings suggest that the hospital achieved the vision of creating an efficient multidisciplinary work environment, reducing the culture of tribalism between professions, and creating a work environment with a high degree of knowledge transfer. Employees in the new day care surgery department report on new ways of working together as a team where they are allowed to contribute to important decisions in task planning, organizing and running the department, experiencing responsible autonomy and having a close relationship to their formal leaders, and a good working environment in general.

The following research questions were explored:

1. How can the use of participating action research design principles drawn from the Socio-Technical System Approach be utilized to prevent and overcome conflicts when establishing a patient-centered multidisciplinary day care surgery department?
2. How can the use of participating action research design principles drawn from the Socio-Technical System Approach be utilized to obtain a good work environment with an efficient task planning that can facilitate ambitious operational goals?

The socio-technical approach stresses that an effective and efficient work place requires an optimal interrelationship between humans and technology. All staff have task variety, decision-making ability and autonomy and require the development of shared goals and a management structure that supports all of these. Crucial to achieving this is the ability of all staff to participate in the design of the new system, and a senior management who are committed to creating and supporting this philosophy.

Deriving from the work of Kurt Lewin (1951), Organization Development (OD) is the most influential and widely-practiced approach to organizational change (Burnes and Cooke, 2012). One of the earliest forms of OD is the socio- technical systems approach developed by the Tavistock Institute in the UK (Burnes, 2014). This approach assumes that to successfully change or improve a system, first-hand information about the organization it sits within is required, and this can only be achieved through empirical observations and detailed concrete descriptions of work tasks and work role relationships (du Guy and Vikkelsøy, 2012).

Our findings suggest that the possibility to discuss work tasks, procedures and practice with colleagues from a range of different specialties facilitated the improvement of inter-professional knowledge transfer, as well as the possibility to utilize the knowledge in everyday work practice.

Another success was the creation of relatively self-managed teams composed of staff who were enabled to develop new skills, which allowed them to carry out a wider range of tasks than had previously been the case.

Less successful was the development of shared goals. NUH senior managers insisted that a target of 4,000 operations per year was achievable, even though both project and steering group staff challenged this. This is not an unusual occurrence. Senior managers often feel that they need to over-promise in order to justify investing in new facilities (Burnes, 2014). However, now that the DCS has an actual performance benchmark for what it can do, it seems likely that future targets will be developed in a more collaborative way.

The other area in which the change initiative was less successful than expected, was in creating an overall management structure that fully supported DCS's collaborative and team-based way of working. The difficulties arose from DCS having to share some key staff with the main hospital, who then tended to see themselves as being part of hospital departments rather than part of DCS. Not surprisingly, both DCS staff and their hospital managers wanted them to continue to report to and be managed by them. DCS, however, wanted them to be locally managed when working at DCS, as the other team members were.

Another factor was that some medical staff, especially surgeons, wished to continue to be part of and managed in their professional silos. This undermined the idea of integrated, self-managing teams. Neither of these developments are unusual or unexpected. They are a common challenge for matrix structures, which to a certain extent the new DSC is. Many organizations have experienced and overcome such issues, but this does take time (Eppinger and Browning 2012).

This study of the setting up of the new DCS shows that it is possible to develop a cooperative, democratic and multidisciplinary work environment that optimizes human needs and abilities and that utilizes

the potential of the technology of work to produce a system that meets the needs of employees and patients.

3.3 Summery Article 3 - Institutional stress and job performance among hospital employees

The purpose of this study was to explore how disagreement with the organization's policy and priorities, labelled as institutional stress, influences job performance, and to investigate the mediating roles of autonomy, competence and social support. A self-completion survey was distributed to four public hospitals in a Norwegian health region with the response rate of 40% (N=9162). Two target groups were defined, and subsequently, structural equation modeling was conducted on two groups of hospital of workers with (N=795) and without (N=8367) leadership responsibilities.

The Job Demand-Resource model (Demerouti et al., 2001) is used as a theoretical framework in explaining the antecedents and preventing factors of job performance in organizations. The aims of this study are to investigate how institutional stress, defined as a job demand, and autonomy, competence development and social support defined as job resources, influences job performance among hospital employees.

We will explore whether perceptions of institutional stress in a hospital region in Norway have direct or indirect influence on perceived job performance and whether autonomy, competence, and social support mediate the relationship between institutional stress and job performance. Leaders and employees may perceive the same working situations and challenges differently according to the information available to them, their previous experiences, and their positions in the organization. Since different stakeholders can experience the work situation in different ways, we will investigate if our main theoretical model holds for a subsample of leaders and subsample of employees without a leadership role.

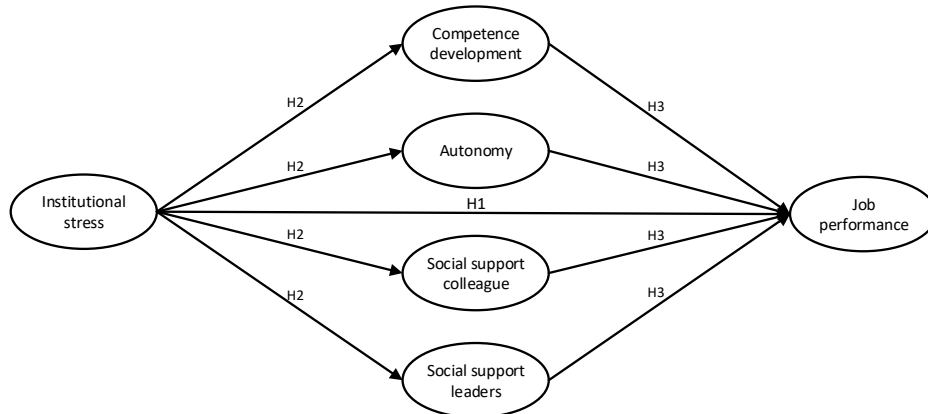


Figure 2 – Hypothetical model describing relationships between latent variables.

Hypothesis 1: Institutional stress is negatively related to job performance.

Hypothesis 2: Institutional stress is negatively related to a) anatomy, b) competence development, c) social support of colleagues, and d) social support of leaders.

Hypotheses 3: Higher degrees of a) autonomy, b) competence development, c) social support of colleagues, and d) social support from leader at work, is positively related to job performance and will mediate the relationship between perceived institutional stress and job performance.

Most of the hypothesized paths were significantly supported with some modifications. For example and referring to the first hypothesis, institutional stress was found to have a direct effect on job performance for employees without managerial responsibilities. However, we did not find a direct effect of institutional stress in the group of employees with managerial responsibility.

The institutional stress experienced by employees in work positions without managerial responsibility, may be caused by employees feeling they have too little influence on important decisions that relate to their

work situation. This must be examined further before any conclusions can be drawn.

Our model supported this hypothesis with one exception. Social support of leaders did not significantly mediate the effect of institutional stress on job performance. Institutional stress was, in our analysis, significantly negatively related to leadership support in both subgroups. However, leadership support was not significantly related to job performance in any of the two groups in this analysis.

This finding was unexpected and needs to be further explored to determine whether this is also true in sectors other than the health care sector and using other measurements of social support of leaders than the one used in this study.

3.4 Summary of Article 4 - Work climate and the mediating role of workplace bullying related to job performance, job satisfaction, and work ability: A study among hospital nurses

The aim of this article was to increase understanding of workplace bullying and its relation to work climate and different outcomes among nurses. We examined a proposed bullying model including both job resource and job demands, as well as nurse outcomes reflected in job performance, job satisfaction, and work ability. Workplace bullying has been identified as some of the most damaging mechanisms in workplace settings. It is important to increase understanding of workplace bullying in relation to work climate and different outcomes among nurses.

The theoretical framework for this article was the JD-R model. The job demands-resources (JD-R) model proposes that working conditions can be categorized into two broad categories, job demands and job resources (Demerouti, Bakker, Nachreiner, and Schaufeli, 2001). High work pressure, an unfavourable physical environment, and emotionally

demanding interactions with clients, leaders or colleagues are examples of job demands. Career opportunities, coworker support, role clarity, participation in decision-making, and skill variety are examples of job resources. Different studies focus on various aspects of job resources and job demands, from individual, interpersonal, and higher organizational levels (Bakker and Demerouti, 2007).

The JD-R model has become central in describing organizational factors and their influence on different outcomes. The general assumption is that high job demands lead to strain and health impairment and that a greater number of resources lead to increased motivation.

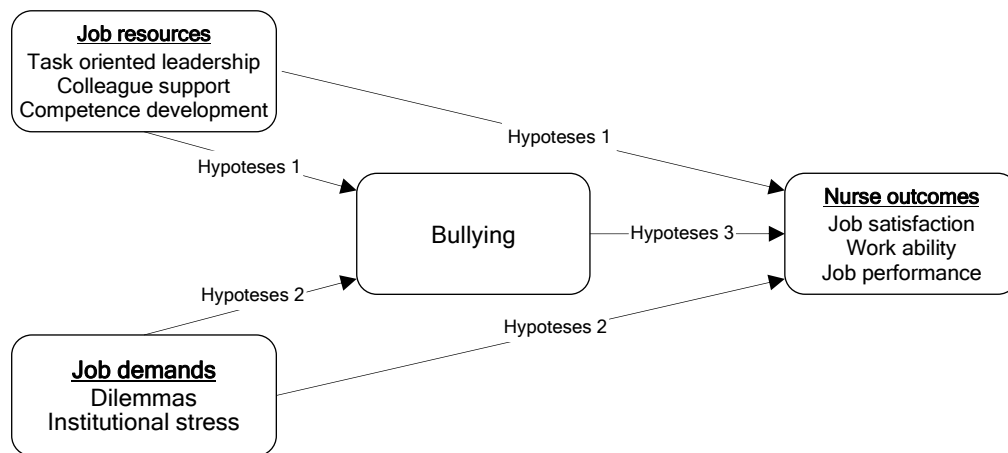


Figure 3 – The theoretical mediational model underlying the current study. Only latent variables are included to ease the presentation.

The theoretical mediational model underlying the current study is specified in Figure 3, and includes three hypotheses; Job resources will reduce bullying and increase nurse outcomes (Hypotheses 1), while job demands will increase bullying and reduce nurse outcomes (Hypotheses 2). Lastly, bullying will have a direct negative influence on nurse outcomes (Hypotheses 3). Support for the theoretical model will indicate that bullying mediates the influence job resources and job

demands have on nurse outcomes (job performance, job satisfaction, and work ability).

This study adopted a cross-sectional web based survey design. A sample of 2946 Registered Nurses from four public Norwegian hospitals were collected during October 2014. We analyzed data using descriptive statistics, correlations, Cronbach's alpha, confirmatory factor analyses, and structural equation modelling.

Our results indicated that the majority of work climate characteristics confirmed to influence workplace bullying, and additionally had direct influence on nurse outcomes; job performance, job satisfaction, and work ability. Bullying had a mediational role between most of the work climate dimensions and nurse outcomes.

This study may increase our understanding of organizational antecedent of bullying among nurses. Workplace bullying among nurses functions as a mediator between the majority of work climate dimensions and outcomes related to job satisfaction and work ability. Strategies to reduce bullying should look at the study findings, and specifically, at job resources and job demands that influence bullying and nurse outcomes.

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4 Epistemological position and methodology

4.1 *The epistemological and ontological position of this thesis*

Is a researcher who is using both a case study and a survey also using the realistic, objectivist, value-neutral, constructivist, subjectivist and value-engaged perspectives that are characteristic of the survey and case study researcher (Greene and Caracelli, 2003)?

This is a rhetorical question that is very applicable to the discussion of the methods used in this thesis. The term quantitative refers to research designed to address questions that hypothesize relationships among variables measured frequently in numerical and objective ways. Qualitative refers to a research paradigm that addresses questions of meaning interpretation and socially constructed realities. Mixed methods research refers to research that utilizes both methodologies (Creswell and Clark, 2007; Tashakkori and Teddlie, 2010).

The nature of being (ontology), the theory of knowledge (epistemology) and the importance of values (axiology) will, whether you acknowledge it or not, influence your research and what is viewed as being valuable, proper “science” and good methods in the research culture to which you belong (Teddlie and Tashakkori, 2010).

Cambell and Fiske (1959) coined the term “triangulation” and called it ‘multiple operationalism’ in which more than one method is part of a validation process. They are credited to be the first to show explicitly how to use multiple research methods for validation purposes. Denzin (1978) defined “triangulation” as the combination of methodologies in the study of the same phenomenon, and was the first to outline how to triangulate methods (Johnson, Onwuegbuzie and Turner, 2007). Denzin described

four different types of triangulation: data triangulation, investigator triangulation, theory triangulation and methodological triangulation. This thesis is based on all four types of triangulation.

The research design used qualitative data to assist the quantitative component of the studies by helping with conceptual and instrument development. At the data collection stage, qualitative data helped facilitating the data collection process, and during the data analyzing stage, qualitative data played a role by interpreting, clarifying, describing and validating quantitative results. The epistemological worldview this thesis is based on can be described as ‘pragmatic social constructivism’.

A central element in constructivism is the fact that human beings construct their own knowledge through activity and subjective processes; this is quite a different view on objectivity. Pragmatism refers to a philosophical tradition centered on the linking of practice and theory.

The phenomena of interest in the articles will affect the methods used. Studying nature laws is quite another thing than studying human behaviour in a social setting. Knowledge in social science can be modified, expanded, constricted and changing (Moghadam, Walker and Harre, 2003).

Pragmatism supports the use of both qualitative and quantitative methods. Pragmatism rejects the incompatibility thesis, and considers the research questions more important than either the method or the underlying paradigm. Pragmatists also reject the forced choice between post positivism and constructivism with regard to logic and epistemology (Howe, 1988).

The research in my thesis can be described as a mixed methods study that combines qualitative and quantitative methods. We used observation of meetings, focus groups interviews, document studies, semi-structured in-depth interviews, participating action research and a survey going out to 22.883 employees in the health sector in western

Norway. In our study, we were going to explore the effects of organizational change in contemporary hospitals. This involved changes in task planning, work distribution and management structures. To improve hospitals performance is the overall goal and purpose of the mother project this thesis is part of, since a well driven hospital is a key factor in any society. Therefore, the purpose of the studies included in this thesis is to explore the outcomes of planned and emergent change processes. How are our health intuitions influenced by political changes, by managerial and professional practice and changes in technology? The deeper purpose for any research is the reason for doing it. The research questions do not necessarily provide the reasons for doing it, purpose is not methodology. However, the methodology should support the purpose (Janesick, 2000). Purpose is the justification for the study, and defines the importance of the study. It became clear to us in an early stage of the methodological discussion of the project that we needed a mixed method's design to explore our research questions. Such social phenomena are complex so therefore we decided to use triangulations of data and methods. We needed a variety of data sources and analyses to better understand the complex multifaceted health institutions and reality.

Tackling a research problem by collecting several types of data from different sources is generally accepted as good practice that enhances a study's validity. Nevertheless, researchers have different ideas about the relative merits of qualitative and quantitative methods (Guest, 2011).

A critic of the triangulation in social research argues that triangulation is plagued with lack of awareness of the different and incommensurate ontological and epistemological assumptions associated with various theories and methods. Methods should be mixed in a way that has complementary strengths and non-overlapping weaknesses (Johnson and Turner, 2003). In the beginning of the data collection stage, we used an explorative design by first gathering qualitative data to explore our

research questions, and then collecting quantitative data to explain the relationship found in the qualitative data. Emphasis in this typology is on the data. We used both focus group interviews and in-depth interviews to gather information before developing a survey going out to all employees in four hospitals in the west coast of Norway. The complexity and fluidity of many research studies included in the project, can confuse the boundaries of typology. The data from our qualitative interviews were used with different and distinct purposes, one was to collect information about task planning, work distribution and managements structures (the phenomena of interest in article 1 and 2) in hospitals, another was to help both develop a survey and to understand the survey's results (article 3 and 4). Find under 'methodological comments and limitation' a further description of the methods used in each articles of this thesis.

4.2 *Research design, participants and methodological comments*

The findings in this thesis are based on an analysis of a mixture of data and methods.

Article 1 is based on 46 in-depth interviews with hospital employees in eight pilot departments in four different hospitals in the regional health authority region. The analysis of the goal-setting practices related to the implementation of the advanced task planning system is based on a study of published documents from the health region and on interviews with the key personnel. Documents from three organizational levels, the Ministry of Health (national level, 2002, 2013), Helse Vest RHF (regional level), and the health enterprises HF (local hospital level), were studied. The interviews took place in the participants' normal work environment and the interview guide consisted of open-ended questions and was adapted to each situation and participant. The interviews were carried out over a time period of one year to allow us to

follow the different implementation phases of the advanced task planning system.

Article 2 is based on 23 in-depth interviews with key-personnel, observations made in project and steering group meetings over a period of one year and three half-day seminars with all permanent employees over a period of one year.

Article 3 and 4 is based on a survey sent to all employees (22,883) in the regional health authority region.

4.3 Article I - Hairy Goals in Change Management: The Case of Implementing ICT Supported Task Planning in a Hospital Setting.

The research reported in this article was designed as a qualitative case study. It is a process study that examines the implementation of a new task planning system in eight pilot work units, in one of the regional health authority's hospitals. It aims to explain the studied phenomenon in terms of the sequence of events leading to an outcome (Belk et al., 2012). The study explored a real- life system through a detailed, in-depth collection of qualitative data. The unit of analysis was a single, within-site case (Creswell, 2012). The case was instrumental in the sense that the intent of the study was to understand a specific issue, problem or concern (Stake, 1995, in Creswell, 2012).

This article takes an interpretive approach, empirically investigating the experience of the participants through data gathered in 46 in-depth interviews (Spiggle, 1994). The article addresses the processes of different reactions to the goal-setting procedures used in the implementation of the new ICT task planning system.

A design was sketched out at the outset of the project, although the final research design emerged as the process moved forward. The phases of the process may change in an emergent design process, after

the researchers enter the field to collect data. A central idea underlying qualitative research is learning about the issue from participants and engaging in the best practices for obtaining this information. The questions, forms of data collection, individuals and sites of study may be modified to gain a better understanding of the issue at hand (Creswell 2012). The data collection and initial analysis of the data were an iterative process, each operation shaping the operations that followed it (Spiggle, 1994). Initial research questions were open ended. This enabled us to listen to the participants and refine the questions in the interviews as we obtained a clearer picture of what was actually going on (Creswell 2012).

4.3.1 Data analysis article I

We used previous research on work motivation and goal-setting (Locke and Latham, 1990; Collin and Porras, 1994; Latham, 2012;) for the predetermination of codes to analyze employees' motivational reactions. Latham's (2012) list of seven variables predicting, explaining and influencing employee motivation in the twenty-first century is (1) Needs, (2) Personal traits, (3) Values, (4) Context, (5) Cognition, (6) Affect or emotion, and finally (7) Rewards and incentives.

We coded the interviews by the following categories; (3) Values, (5) Cognition and (6) Affect and emotions. We could not use category (1) Needs or category and (2) Personal traits, because we did not have data that could tell us anything about employees' personalities or needs. We did include category (4) Context into the discussion of when and how different types of goals were most useful in the different implementation phases. Category (7) Rewards and incentives, such as monetary incentives, were not a part of this case. We do, however, discuss how this motivates (rewards) employees when they see the positive outcome of the new system.

This study focused on the motivational responses to organizational change, based on employees' values, emotions and cognitive reactions.

All text in the 46 interviews that contains "goals", "task planning" and "work procedure" was analyzed and coded using the three main categories emotions, values and cognition. We created subcategories as they appeared in the analyzed text material (our transcribed interviews).

The next step was first-order analysis of the selected data. This process allowed us to compile an account of events based on the dominant themes expressed by the research participants and to look for patterns in these events and in the participants' accounts (Gioia and Chittipeddi, 1991).

Techniques such as categorization, abstraction and comparison were used to discover the themes and patterns in the first-order analysis, (Gioia, Corley and Hamilton, 2013).

The categories that emerged from first-order analysis were subjected to second-order analysis or interpretation, resulting in an account of what the pattern in the data means (Gioia and Chittipeddi, 1991).

4.3.2 Methodological limitations to Article I

The trustworthiness of the findings in this study hinges on the important assumption that the opinions of the regional health authority informants are fairly representative, not only of all employees in similar positions in the regional health authority, but also of personnel holding similar positions at large hospitals in Norway and in similar countries. We believe this to be a reasonable assumption to make, due to the similar organizational structure of the regional health authorities in Norway and the similar functions and background of health personnel at Norwegian hospitals.

We asked all interviewed employees how they perceived the organizational change process, the development and implementation of

the advanced task planning system and the goals for this process. This method has some limitations.

The interviews provided us with the employees' versions of goals, obstacles and achievements, and how they made sense of this change process. Their stories can contain inconsistencies, imprecision, illogicalities and ambiguities. We did not try to find an "ultimate truth" that was ready for theoretical and analytical generalization in this study. Our aim was to document different human motivational reactions to hairy organizational goals, to document how different types of goals can be useful in different phases of the change process, and employees' motivational reactions to radical changes in their day-to-day work procedures.

Other limitations were that the hospitals started the work in pilot departments at different times, tried out different technical solutions and moved forward at different speeds. The process of implementing the advanced task planning system was therefore not fully comparable between pilot departments and between hospitals.

4.4 Article 2- Utilizing participating action research design principles drawn from the socio- technical theory to establish a multidisciplinary day care surgery department

This study was a single case study (Yin, 2011) using a participatory action- oriented method inspired by the socio-technical approach. In this case, the researchers used the following methods; stakeholder analysis, documents studies, observations of meetings, semi-structured interviews and participating group methods.

First, the researchers conducted a stakeholder analysis and analyzed all formal documents in the case. This involved 190 pages of project documents including goals, risk analysis and planning documents,

internal information newsletters, e-mail exchanges and written notes from project meetings. At this time observation in the project- and steering groups established to work with the project, was also conducted. This observation started up the last year before formal start-up, the frequency for these meetings was an average of two to three meetings per month. Fields notes were written after these observations by the first author. Then followed the first phase of interviews.

In-depth interviews with eight key stakeholders were carried out. All hospital departments influenced by the new day-care surgery at the hospital had employees participating in either the steering group or a project group. All interviews were semi-structured interviews taken at the hospital and recorded; they lasted up to 75 minutes. All professions (nurses, physicians, hospital leaders and administrative personnel) were included in these interviews.

After the initial round of data collection, the second phase of this case study started. In this phase reflections on action for change were developed in line with the socio-technical approach, they were both an inspiration for developing the changes, and a framework for analyzing the data. This work started before the formal start-up of the day care surgery and lasted throughout the first 18 months in operation. The focus in this phase was working together with all the leaders and regular employees at the new day care surgery to generate practical solutions for how they could achieve developing an outstanding day care surgery with a smooth workflow and good work environment.

In this phase, the socio-technical design principles were discussed and used to develop task planning and the work environment in the new DCS-department.

Then followed a new round of in-depth interviews with nine regular employees at the DCS, as well as five interviews with the leader of the new DCS. These interviews had an action-oriented critical focus with the goal to bring forth ideas that could potentially be acted upon to improve

both task planning and improvements of the work environment of the new department.

The first author of this article participated in three half day seminars with the goal that all regular employees should suggest and discuss the potential to improve task planning and work flow, as well as the social work environment, and the interaction between these. The first author, who is a trained organizational psychologist, had the role as process leader of these seminars. The goal was to facilitate the group process to encourage reflective observations in line with Lewin's description of action research as a method focusing on developing workable solutions to practitioners' problems (Lewin, 1946). After five months, all employees participated in 'The World Café' method (Tan and Brown, 2005) focusing on the following three themes: 'The work environment', 'Efficiency and procedures', and 'How can we improve task planning and work flow in the future?' The Café was run as a combination of organizational development process and participating research design. The main aim of these seminars was to let the employees of the DCS-department define and formulate both problems and solutions to improve the work flow and work environment. The time between the seminars focused on trying out these actions in practice.

The informants were chosen after a stakeholder analysis and came from all relevant hospital departments affected by the new DCS, and from all administrative departments having a role in the process. Informants were selected based on their organizational positions, making sure that those especially relevant to the project were interviewed following due ethical procedures.

4.4.1 Data analysis article 2

All interview text that contains information on establishing DCS in accordance with the preset goals of *increased operational capacity*,

patient centered organization, inter-professional teams and increased employee satisfaction, was coded. We were interested in analyzing whether different professions or stakeholders used different pieces of information or knowledge to promote their interests, and how this could affect the establishing of the day care surgery department.

The next step was first-order analysis of the selected data. This process was used to compile an account of events based on the dominant themes expressed by the research participants, and to allow us to look for patterns in these events and in the participants' accounts (Gioia and Chittipeddi, 1991). This strategy involves constructing a detailed story from the raw data and was carried out to prepare an analytical chronology, to clarify sequences across levels of analysis and establish preliminary analytical themes (Pettigrew, 1990). Techniques such as categorization, abstraction and comparison (Spiggle, 1994) were used to discover the themes and patterns in the first order analysis.

4.4.2 Methodological limitations and comments to Article 2

We used a group of strategies to enhance trustworthiness. Data was firstly collected from a number of sources using a number of methods. We analyzed all formal documents and reports. This was the primary technique used at the beginning of the project to obtain an overview of the discourses and the goals of the project. All documents produced in the 18 months we followed the project, were analyzed. The focus of the analysis was on problems and problem solving. Secondly, we participated as observers in a range of project and steering group meetings, which allowed us to hear how these issues were discussed and solved.

This was used as background knowledge in the development of a semi-structured interview guide. We interviewed key personnel involved in the process of establishing the DCS department.

More than one researcher analyzed the data independently, and developed and tested the coding of the data. The interventions in this study were based on theoretical perspectives. The text in the interviews containing information about establishing the DCS according to our research questions was coded. The next step was first-order analysis of the selected data. Through this process, an account of events based on the dominant themes expressed by the research participants was put together, and we could look for patterns in these events and in the participants' accounts (Gioia and Chittipeddi, 1991).

The richness of the data in this project can be seen as being both an advantage and a disadvantage. The advantage was that we followed the project over a long period of time and used a range of methods in the data gathering process (e.g. participating in meetings, interviews, analyzing documents). The disadvantage was that there was a risk that important issues and themes were drowned or lost in the very large volume of information that the wide range of methods produced.

We used participating action research in this case. Participating action research can be defined as 'a participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes, grounded in a participatory worldview.... it seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people and their communities...' (Reason and Bradbury, 2001, p.1).

This type of participating research and the very close involvement of the researchers in the data gathering process, can potentially influence the responses of subjects, data interpretation and therefore the findings. Participating action research challenges the view that research must remain objective and value-free to remain credible, and instead it embraces the notion of knowledge to be socially constructed and always, whether it is acknowledged or not, embedded in a system of values

(Reason and Bradbury, 2001). Participating action research has two overarching objectives (Cooke and Cox, 2005). The first is knowledge production and action for the benefit of a group of people through study, research, education, and sociopolitical action, and the second is an empowerment of people by enabling them to construct and use their own knowledge.

Participating and practical action research is often associated with testing the effectiveness of practices or the applicability of findings conducted elsewhere than to the local settings. One of the criticisms against participating action research has been its localism and difficulty to intervene in large-scale social efforts. The bulk of action takes place on a case by case basis, failing to extend beyond the local context (Brydon-Miller, Greenwood and Maguire, 2003). Another criticism is that no great attempts at objectivity are intended (Kock, 2005). Since this is an empirical thesis grounded in practice and with a clear goal of discovering something practical or useful for future hospital organization, participating action research seemed like a good choice; participatory research with a practical approach concerned with achieving real outcomes for real people, or as Bradbury and Reason (2003, p.20) puts it: 'it's more satisfying to help create desired change, rather than merely observe life go by'.

4.5 Article 3 – Institutional stress and job performance: The mediating role of autonomy, competence and social support in a hospital study

4.5.1 Research design article 3

The data used in this study was collected using a questionnaire that was sent to all employees in the regional health authority region. The survey had two functions. It was both a work environment survey

initiated by the top management of the regional health authority and a survey for collecting data for the research project “Task planning and leadership in the hospital sector”. The survey included a range of validated questionnaires on themes relevant to the above issues. There were two versions of the survey, one for employees with leadership responsibilities and one for employees without leadership positions. The first included additional questions that were only relevant to leaders. These questionnaires contained 384 questions. The employee version of the survey was a little shorter and contained 281 questions. It took approximately 40 minutes to complete the whole questionnaire, and it was not possible to submit the questionnaire without answering all the questions. In total, 22,883 employees received the questionnaire and the overall response rate was 40 percent (n=9162). Of this, 795 (8.7 %) worked as leaders, managers or supervisors and 8,367 (91.3 %) had no leadership responsibilities. 556 of respondents were physicians, 2,946 were nurses or midwives and 222 were psychologists. All types of employees of the regional health authority were included in the survey. All participants were informed that this was both a work environment survey and a data collection survey for a research project, and that participation was voluntary and anonymous.

4.5.2 Statistics article 3

General statistics were analyzed using SPSS version 21. Confirmatory factor analysis (CFA) and structural equation modeling were conducted using AMOS 7 (Arbuckle, 2012).

The following indicators were assessed in AMOS to evaluate fit; Root Mean Square Error of Approximation (RMSEA), Goodness-of-Fit Index (GFI), Normed Fit Index (NFI), Incremental Fit Index (IFI) and Comparative Fit Index (CFI). A threshold equal or greater than 0.90 was defined as the acceptable fit criteria, with the exception of RMSEA. The criteria for this was set to less than

0.8 (Hair et al. 2006). Chi square is sensitive to sample size and was therefore not used as a criteria (Schumacker and Lomax, 2004).

There was no need to replace missing data before using AMOS, as the data was complete. It was not possible to send in the answers to the survey unless all questions were answered, therefore, there was no missing data. Composite scale scores for all dimensions were created by obtaining the mean of the responses to items in the dimension. The composite scores ranged from 1 to 5 for all dimensions, except for institutional stress. The score for this ranged from 0 to 6. Cronbach's alpha was estimated to determine whether factor scales had acceptable alpha coefficients and internal consistency. Pearson's r was computed to examine the discriminant and convergent validities among measures.

To define institutional stress we used exploratory factor analysis (EFA), using Principal Factor Analysis was therefore conducted on Cooper's Job Stress Questionnaire (CJSQ) (Cooper, 1981). An additional EFA was conducted to ensure discriminant validity between the institutional stress dimension and the psychological need dimensions. CFA was then conducted to validate measurements concepts.

It is assumed that employees and leaders have different work tasks and role expectations. The sample and structural relations assessments were therefore divided between these two target groups. This approach takes into consideration the possibility that links between dimensions might differ between leaders and other personnel. This procedure will also potentially function as a test of cross-validation related to findings.

An exploratory approach has been recommended when developing structural models using SEM (Zhao, Lynch and Chen, 2010). Analytical techniques to test mediators are still evolving (Shrout and Bolger, 2002). A stepwise approach was therefore used to develop final structural models. Model modifications were based on the general impression of model fit, and non-significant beta coefficients were used as the basis

for removing hypothetical links. Additional adjustments will also be considered based on modification indices.

4.6 *Work climate and the mediating role of workplace bullying related to job performance, job satisfaction, and work ability: A study among hospital nurses*

4.6.1 *Research design article 4*

The purpose of this study was to explore the influence of job resources and job demands on bullying and three self-reported nurse outcomes. The selected outcome variables were job performance, job satisfaction and work ability. This study included three hypotheses; Job resources will reduce bullying and increase nurse outcomes (Hypotheses 1), while Job demands will increase bullying and reduce nurse outcomes (Hypotheses 2). Lastly, bullying will have a direct negative influence on nurse outcomes (Hypotheses 3). Support for the theoretical model will indicate that bullying mediates the influence job resources and job demands have on nurse outcomes (job performance, job satisfaction, and work ability). The current study adopted a cross-sectional web based survey design. The study was conducted in October 2014, and data was collected via an internal web-application to all healthcare employees employed in one of the four public healthcare regions in Norway. The selected health region comprises four main health enterprises, which are legal entities under the regional authority. Each health enterprise consists of a central hospital associated with some local hospitals and outpatient clinics. All survey responses from the informants were protected anonymously.

4.6.2 Statistical analysis in article 4

The data was analyzed with version 21.0 of SPSS and AMOS 21.0 (Arbuckle, 2012). Basic descriptive statistics, bivariate correlations and Cronbach's alphas were analyzed using SPSS. Correlations between concepts indicate level of difference and discriminant validity of concepts. Confirmatory factor analyses (CFA) and structural equation modelling (SEM) were conducted in AMOS. CFA builds on the concept validity, ensuring that each factor measures different concepts without too much overlap. Validation of the measurement model was a prerequisite before estimation of the structural model, using SEM. This step is common given that the structural model is nested with the measurement model (McDonald and Ho, 2002). The full measurement model incorporating all items and the latent factors, were included and specified when testing the paths between the latent factors. The variance explained in outcome variables supports both the theory and the criterion related validity of the model.

Significant beta coefficients and direction of such coefficients potentially support or reject the theoretical model and the associated hypotheses. Finally, the overall impression of statistics and findings indicates the degree to which the totality of concepts and approaches are valid and satisfactory.

In AMOS, the following indicators were used to evaluate the fit: the Root Mean Square Error of Approximation (RMSEA), Tucker–Lewis Index (TLI), Incremental Fit Index (IFI), and Comparative Fit Index (CFI). RMSEA less than .05 corresponds to a “good” fit and an RMSEA less than .08 corresponds to an “acceptable” fit (McDonald and Ho, 2002). Values of 0.90 or greater for other indicators indicate good fit (Hoyle, 1995; McDonald and Ho, 2002).

Due to the large sample size, chi-square was not used to evaluate the fit (Bentler and Bonnet, 1980).

4.6.3 Measures article 3 and 4

Cooper's Job Stress Questionnaire (CJSQ) (Cooper, 1981) comprising 16 items was used to assess institutional stress. CJSQ combines different types of work related stress and assesses stress using various elements rated on a six-point scale ranging from no stress to very much stress. Items were: How much work-related stress have you experienced concerning the following?: 1) The organization's policy, 2) Lack of power and influence, 3) My values conflicting with those of the organization, 4) The leadership not understanding the challenges of my work, and 5) The organization using the wrong parameters to measure the quality of my work."

Job performance. We used employees' self-reported measurements of how they evaluate their own job performance as the central dependent variable measuring job performance. A standardized General Nordic Questionnaire (QPS Nordic; Lindstrøm et al., 1997; Dallner et al., 2000; Lindstrøm et al., 2000) was used in this study. Job performance comprises four self-evaluation questions. The questions inquired about employees' satisfaction with the quantity of their work, the quality of the work, the ability to solve problems at work, and their own capacity to develop and maintain good work relationships with colleagues. Items were evaluated on a five-point scale ranging from never/seldom to always/very often.

Autonomy was measured using the autonomy scale from the *Organization Assessment Survey* (Dye, 1996). The autonomy/participation variable is measured with four questions, "*In my department, we work together to influence the standards that constitute good work. In my department, we often have the opportunity to influence goals or actions. All employees in my department are involved in important decisions that affect them. Employees have good opportunities to influence how work is carried out.*" The questions were measured on

a five-point scale ranging from *to a very small extent* to a *great extent*. The Cronbach's alpha for the items in the autonomy scale is .920.

Competence and development were measured using the *COPSOQ* (*Copenhagen Psychosocial Questionnaire*), a comprehensive instrument for the assessment of psychosocial factors at work (Kristensen and Borg, 2001). The competence and development variable is assessed with three questions, "*Does your work require that you take initiative? Do you have the opportunity to learn new things through your work? Can you use your skills and expertise in your work?*" This was measured on a five-point scale ranging from *strongly disagree* to *strongly agree*.

Social support was measured by two scales, one measuring social support of colleagues and one measuring social support of an immediate supervisor, both developed by Van der Heijden (1998). Social support of colleagues was measured using the following three questions, "*Are your colleagues able to appreciate the value of your work and see the results of it? Do your colleagues express their opinions about your work? Do your colleagues offer constructive advice?*"

The social support of a supervisor questions included, "*Is your immediate supervisor able to appreciate the value of your work and see the results of it? Does your immediate supervisor express his/her opinion concerning your work? Does your immediate supervisor offer constructive advice?*" The questions are measured on a five-point scale ranging from *never* to *very often*.

Task oriented leadership. Six items were used to measure task oriented leadership (Yukl et al., 2002). Specific task behaviours related to leadership include short-term planning, clarifying responsibilities and performance objectives, and monitoring operations and performance.

Items are measured on a 5-point scale ranging from *strongly disagree* to *strongly agree*.

Bullying. Exposure to workplace bullying was measured using a twelve-item trimmed version of the Negative Acts Questionnaire – Revised (NAQ–R) instrument (Einarsen, Hoel, and Notelaers, 2009). The items assess exposure to negative acts within the last 6 months, with the response alternatives of (1) never, (2) now and then, (3) monthly, (4) weekly, and (5) daily. All items are formulated in behavioural terms, with no reference to the term bullying, and the items are referring to both direct (e.g. verbal abuse) and indirect behaviour (e.g. withdrawal of information) (Nielsen, et al., 2009).

Job satisfaction. Four items were used to measure job satisfaction (Kristensen, 2000) related to job prospects, physical working conditions, the use of skills, and overall satisfaction with job when everything is considered. Items are measured on a 4-point scale ranging from very unsatisfied to very satisfied.

Ethical dilemmas. Six items were used to measure how often employees experienced ethical or professional dilemmas in their work situations (Gaudine, LeFort, Lamb and Thorne, 2011). This included questions regarding lack of qualified personnel, lack of cooperation between departments, and professional conflicts due to disagreements on prioritizing of key tasks and goals. Items were measured on a 5-point scale ranging from never to always.

Work ability. Two items were used to measure work ability. One item measured self-rated current work ability while the other item measured estimated work ability in the forthcoming 6 months. Items of the work ability index (Tuomi, Ilmarinen, Jahkola, Katajarinne, and Tulkki, 1994) originally include additional items with different scales, which is not optimal in SEM-models. Hence, the included items were revised for the purpose of the study. Items are measured on a scale ranging from 0 (not capable of working) to 10 (optimal work ability).

4.6.4 Methodological comments and limitations to article 3 and 4

The research of these studies has some limitations that need to be addressed. Firstly, methodology is based on a self-completion questionnaire, which might be associated with common method bias. Validity and reliability assessments have therefore been approached to compensate for the subjectivity of the data method. Use of self-reports can, however, still potentially overestimate the magnitude of observed correlations (Sullivan and Bhagat, 1992) and structural relations between variables. On the other hand, research also suggests that people often accurately perceive their social environments and that self-reported data is relatively robust (Alper, Tjosvold and Law, 1998).

The survey response rate was 40 percent for non-leaders and 50 percent for leaders. We cannot be sure that our selection is totally representative of all organizational members. The questionnaire took 40 minutes and it was not possible to select or remove questions or save and come back to answer the rest of the questionnaire at a later time.

We are not aware of any significant biases among the sample of respondents in relation to the total population of employees. However, it is reasonable to believe that our respondents are more loyal to the policies of the hospital management than the population of employees as a whole, because the questionnaire was criticized by a number of employees for being too long, and these employees might have been among those that did not respond.

The generalization of the findings presented here is based on a large-scale survey sent to all employees of four hospital enterprises. The premise employed here is that the opinions of the regional health authority informants are representative of employees with similar positions in public hospitals both nationally and internationally. The Norwegian health sector is referred to as a “decentralized NHS type”

health service in a number of studies (Byrkjeflot et al., 2012, p.8). It is therefore reasonable to believe that the professions and the work cultures found in Norwegian hospitals are relatively homogenous. Nordic hospitals exhibit comparable hospital care organization structures, according to a broad meta-survey published by Medin et al. (2013).

One general limitation with surveys as a data collection method is the answer options; they can lead to unclear data because respondents may interpret certain answer options differently (Axinn and Pearce, 2006). For example, the answer option «to a very small extent” may represent different things to different subjects, and have its own meaning to each individual respondent.

The survey data used in article 3 and 4 is also based on one measurement in one timeframe.

The study in article 3 measures institutional stress using a one-dimensional measure. We do not postulate that this dimension is the only measure or approach that can be used to measure institutional stress. Other forms of institutional stress dimensions might be developed to complement the institutional stress dimension used in the current study.

Both article 3 and 4 use covariance-based SEM analysis (CBSE). SEM is a statistical methodology that undertakes a multivariate analysis of multi-causal relationships among different, independent phenomena grounded in reality. This technique enables the researcher to assess and interpret complex interrelated dependence relationships (Hair et al. 2010, MacKenzie, 2001).

Structural equation modeling has two statistical pivots. First, the causal processes are represented by a series of structural relations. Second, these equations can be modeled in order to conceptualize the theory under study (Byrne, 1998). SEM can be understood as theoretical empiricism because it integrates theory with method and observations

(Bagozzi, 1994). This approach tends to explain the relationships between indicators and constructs, and to confirm the theoretical rationale that was specified by a theoretical model. In this setting, the term causal model must be understood to mean ‘a model that conveys causal assumptions’, not necessarily a model that produces validated causal conclusions.

The adequate size of a sample in the CBSE approach depends on several factors, such as 1) multivariate normality; 2) applied estimation technique; 3) model complexity, because more complex models require more observations for the estimation; 4) missing data, because it reduces the original number of cases; 5) communality in each construct, i.e. the average variance extracted in a construct (Hair et al., 2010). The sample size in article 3 is 9162, and in article 4 2946. Generally, the sample size is considered robust and adequate in order to perform CBSE. Large sample sizes also reduce the likelihood of Type II error (the failure to reject a false null hypothesis).

The limitations based on the cross-sectional design affect both studies in article 3 and 4. Structural modelling assessed with SEM is not proven longitudinally. Additionally, it is important to emphasize that the organizational factors investigated in these studies are not exhaustive, and other factors could have been included based on different organizational perspectives and approaches.

Regarding the generalizability of the findings, more research needs to be conducted to generalize the findings to other cultures and settings.

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5 Discussion of overarching research questions and relationship between papers

5.1 Relationship between papers?

The thesis has an overarching aim to contribute to knowledge on how changes in task management and organizational design influence individual and organizational outcomes in hospital setting.

Based on this, the main research questions of this thesis are:

1. How did the implementation of advanced task planning management, and changes in organizational design and goal setting influence distribution of work tasks, work motivation and the psychosocial work environment in hospitals?
2. How can professional disagreements in policies and distribution of resources influence outcomes such as workflow, work motivation, the psychosocial work environment and job performance among hospital employees?

The main focus of this thesis was to follow the outcomes of different short and long-term change projects that implemented new technology, new policies and new organizational and management structures. The improvement of hospital performance, efficient task planning and workflow, the development of a healthy psychosocial work environment with satisfied, motivated and engaged employees, were the common goal of these changes.

The first article discusses the implementation of a new health information system called advanced task planning which was developed to improve workflow, and thereby job performance. The advanced task planning system is a type of ERP-systems (Enterprise Resource Planning Systems). ERP is an industry term for the broad set of activities

that help an organization manage its core activities. An important goal of ERP software is to integrate back office business processes and facilitate the flow of information within an organization. The article includes a discussion of how this type of organizational changes (introducing a new task planning system) can be successfully developed and implemented, and the importance of both project implementation style (agile project management style in this article) and goal-setting practices (hairy goals versus learning goals) on change process success.

An important top management task is to provide the organization with the technology that is required to perform work tasks in the most efficient way possible. How new technology is introduced in an organization will, however, affect employees' motivation to participate in change projects and their ability to use the new technology.

Employee motivation must, where organizational change requires employees to change their day-to-day work routines, be actively maintained throughout the project period. The level of employee participation in, and commitment to, organizational changes may also be determined by goal-setting strategies and practices. Although many studies demonstrate the theoretical importance and effectiveness of goal setting within organizations, and the benefits of assigning individuals specific and challenging work goals (Earley, Prest and Wojnaroski, 1987; Osch et al. , 2010), very few focus on how organizations can achieve their strategic goals through efficient task planning in practice.

To link goal-setting strategies with strategic changes in the organization is common (Lock and Latham, 2002). In the first article in this thesis, we studied if a special type of goal-setting called hairy goals was well suited to the characteristics of the organization studied. This is shown, in particular, by the ability of these goals to reduce the risk of professional conflicts among hospital employees.

New technology in medical equipment and treatments of patients can also affect hospital organization. Operations that previously required

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hospitalization of patients may now be possible to perform as day care surgery. In article two, we followed the establishment of a new department that focused on day care treatment instead of patient hospitalization. We followed the change process of setting-up a day care surgery department outside the hospital setting, a process which involved breaking up of professional cultures and traditional management structures, to create a more multidiscipline patient-based department.

This was a major organizational change, and one that took hospital top management a long time to achieve. The day care surgery opened in 2014, more than twenty years after the first attempt to open a new day care surgery was made. Both moving out of the hospital area and establishing a new management structure in which the professions reported to a local leader, were met with considerable resistance by different professional groups.

The role of professions in organizational change and how different worldviews or logics can be a hindrance to achieving results, were also important aspects examined in article 1 and 2.

The qualitative interviews used in article 1 and 2, allowed us to get a deeper insight in where task planning stopped up, what problems different professions experienced in collaboration, what types of work tasks they found stressful, and what motivated them. How did they experience their psychosocial work environment and what types of negative acts and ethical dilemmas did they experienced at work? This information was vital for us in developing the survey, that article 3 and 4 in this thesis are based on. The interest for the type of stress we label as 'institutional stress' and how this was related to job performance, came early in the data analysis process. In the qualitative interviews, several informants had complained that the hospital had been too focused on numbers, business and reports. 'Quality' was measured by the wrong parameters and they informed us that they did not think their organization

developed in the right direction. These statements were the background for the research interest in the institutional stress concept.

One of the controversies in health service today, as described in chapter 1, is the disagreement around organizational values, decision-making and the quality measures of job performance (e.g. how quickly a patient discharge report can be issued versus the quality of the report). An increase in the focus on cost control, accountability, budgets and numbers has (according to some scholars) led to hospitals being run more businesses like, and it has left some employees with the feeling that they do not longer share the values of their organization (Reay and Hinings, 2005; 2009). The increased focus on changing organizational policies and on performance has led to clinical and medical personnel becoming highly critical to the cost and efficiency-focus, and that these values have become more important to the political top management than quality and patient service. “NPM” has become almost a profanity among clinical hospital employees. This has also led to profound disagreement of how to measure good performance, both hospital performance and individual employee performance. This can lead to something we in article 3 have labeled institutional stress, and an increase of job demands. The relationship between resources offered by the external environment and job demands, will influence if individuals can reduce the potentially negative effect of high job demands and achievement of work related goals. According to the JD-R perspective, it is generally suggested that a dual strategy should be adopted in healthcare, focusing on both decreasing job demands and increasing job resources (Jourdain and Chênevert, 2010).

Ensuring and facilitating that employees can achieve autonomy in their work situation, can use and develop their competence, and experience the social support of their colleagues are important management task. The leadership in a hospital setting is, as in other organizations, responsible for implementing new technology, making the organizational

dispositions and work task allocations that are required to achieve the underlying goal of improving quality and performance.

Our results suggest that there are groups of core personnel among clinical personnel that are skeptical to the way public hospitals are controlled and managed, and that this disagreement may influence their job performance.

There seem to be strong competing logics among professions in the health sector with respect to how resources should be used to develop a hospital that can meet future demands and challenges (e.g. Reay and Hinings, 2005; 2009). If leaders are to successfully implement future organizational development projects, then they will need to know how to achieve a constructive discussion with the different professions and develop what the socio-technical approach calls *shared organizational goals and values*. It seems logical to assume that highly engaged employees perform better at work, feel greater job motivation and satisfaction and have less intentions to quit the organization. There is a growing body of evidence supporting this view (e.g. Goldstein and Ward, 2004; Spurgeon, Barwell and Mazelani, 2008). If clinical employees are not involved in important organizational change processes, one possible outcome could be that implementation of new services or structures are not successful. Another possible outcome is to have less engaged, motivated and satisfied employees leading to reduced job performance.

The survey article 3 and 4 in this thesis was based on was not only a data collection process for research purposes, it was also a work environment survey for the 22 883 employees in the health region. One of the worst psychosocial work climate an organization can offer an employee is one consisting of high levels of conflicts and bullying. Mental and physical health problems, symptoms of posttraumatic stress, and burnout are expected outcomes of workplace bullying (Nielsen and Einarsen, 2012). Workplace bullying is not expected to exist in a

vacuum, as it is influenced by and evolves from different characteristics of the organization (Einarsen, 1999; Leymann, 1996). In article 4 we postulated that institutional stress and ethical dilemmas among one hospital profession (nurses) would have significant negative influence on bullying, and they reduce job performance, job satisfaction and work ability among nurses. However, we expected that job resources, such as competence and development, and colleague support would reduce bullying and increase job performance, job satisfaction and work ability among nurses. One focus in this thesis, is to increase our understanding of workplace bullying in relation to work climate and different outcomes among one profession in the hospital setting, the nurses.

5.2 How did the implementation of advanced task planning management, and changes in organizational design and goal setting influence distribution of work tasks, work motivation and the psychosocial work environment in hospitals?

The question of goal-setting is complex in work settings. Because organizations or top management prescribe goals for their employees, one might think that personal goal-setting might not be relevant in the work-settings, but there is empirical evidence that the effect of assigned goals is mediated by the personal goals that people choose in response to the assignment (Locke and Latham, 2002). If prescribed goals can be transformed by individual employees into personal goals, this can increase their experience that the goals are autonomously chosen. This can also explain why most studies focusing on goal-setting practices in large organizations examine the effects of goal setting on work motivational variables and/or performances (Latham and Yukl, 1975, Locke 1981; Locke and Latham, 2002). Goal-setting practice is seen

as an independent variable, stimulating some social or individual response.

Since successful development and integration of better health information systems can save time and money, distribute work tasks more efficiently and allow patients with complicated diagnoses to acquire medical help from different departments and professions in a more streamlined and effective way, many hospitals are shifting towards greater integration in health care delivery (Woods, 2001, Hofmarcher, 2007, Ahgren and Axelsson, 2011). One mean of accomplishing this is by offering a wider range of health care services at the admission point to avoid transporting patients to multiple diagnosis centers (Van Merode et al, 2004 and Boonstra and Govers, 2009). These kinds of shifts in the service delivery can be facilitated by introducing more advanced task planning systems (Klaus, 2000). One of the critics against the typical silo organization in hospitals has been the lack of cooperation and information flow between departments, leaving vulnerable patients in limbo between departments. An advanced task planning system may also lead to a better utilization of the employees and increase employees' predictability by extending the planning horizon and enhancing access to work plans and work schedules between departments.

In article 1, we followed the implementation of a new task planning system for physicians in eight pilot departments in four hospitals in Norway. This was an untypical project in the public health sector, and there are two main reasons for this. Top management decided not to use the normal project implementation style but to use hairy goals and agile project management style. Modern organizational development processes and theories have been criticized for being too abstract and not very user friendly as a support for real change processes. Du Gay and Vikkelsøy (2012) argue that contemporary discourses of organizational change tend towards being both absolutist in the sense of change being undeniable, everywhere, and 'you can't escape it', and

highly abstract. Its imperatives require flexibility, innovation, creativity, but the practical operationalization of its imperatives remains remarkable underspecified. 'It is not at all obvious how such abstract injunctions are to be acted upon practically' (du Gay and Vikkelsøy, 2012, p. 132).

To use a socio-technical approach to ICT system implementation is based on local knowledge and practical grounded processes. Agile management tries to both understand and take into account the unexpected consequences of bringing humans and technology together, and the risks of implementing systems without local adjustments and knowledge. Agile project management combines top-down and bottom-up organizational change styles. It is top-down because it is change tied to a business strategy which is based on clear beliefs and is part of a long-term process led by regional health authority top management. It is bottom-up because it is tested out in pilot departments, and because the experiences and feedback of clinical workers decide which solutions are kept and which are discarded.

The change process in article 1 is a type of project which has some elements in common with emergent change processes (Wilson, 1992). 'Emergent changes' are described as bottom-up changes, appear to nurture the idea that change offers the prospect of generating bright ideas and amazing innovations if only organizations could manage the right spirit and atmosphere. The controversy between rigidities of organizations and the acute need for changes became an interest in organizational development literature (du Guy and Vikkelsøy, 2012; Beer and Nohria, 2000). The agile project implementation style tries to balance both of these processes by implementing planned, needed and management supported organizational goals, at the same time as the implementation process must be done in close relationship with end-users with close knowledge of work tasks and work processes in the organization.

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The employee capabilities for change depend on leadership, culture and competence (B Oreg and Berson, 201; Burnes and By, 2012), and personal disposition (Oreg, 2003, 2006), as well as the quality of the change process itself, the importance of communicating the Why, When and How. Hospital management must navigate between strong environmental pressure for changes such as pressure for new expensive treatments, technology, drugs and patientcare, and the internal need for continuity, competence building, and job satisfaction among staff. In professional organizations like hospitals, task planning is a main strategic and operational tool for improving performance. The top management's goals for implementing a new advanced task planning system, were to prioritize scarce resources (medical specialists), to allocate right resources to the right place at the right time, to stimulate knowledge transfer and learning, and to distribute a sensible division of tasks between professionals and, thereby, to provide better patientcare.

In this thesis, 'task planning' is defined as the formal distribution of work tasks on individual employees or groups of employees. The aim of good task planning is to find the best way to utilize human resources in order to achieve the strategic goals of the health service as a whole. In order to be effective, a strategic task planning system should be designed in such a way that the specific situational setting of the organization is reflected in the design.

The agile method used in article 1 in this thesis, can be a change method that prevents collisions between the different rationalities of the different professional groups, and helps promote collaboration through the deep involvement of end-users in the process from the start. Collaboration is also promoted by the software developers receiving feedback from ICT and HR employees on their functionality needs and wishes throughout the change process.

According to goal-setting theory (Lock and Latham, 1990), specific high goals lead to higher performance than no goals or even an abstract goal such as “do your best” goal. Hairy goals used by the top management in implementing the advanced task planning system, are both abstract and not normally linked to performance targets or feedback routines. Hairy goals are also called “stretch goals” by some scholars and are referred to as “goals that are extremely difficult and novel” (Cunha, 2016). This type of goal-setting should, according to goal-setting theory, decrease motivational appeal among staff.

The hairy goals described in article 1, are meant to improve employees’ work situation and patient care. Hairy goals were therefore not directly linked to effectiveness outcomes but to more abstract values and goals such as “more efficient use of employees’ resources”, “less administrative work for clinical personnel” and “better patient care”. This type of goal-setting might also be more in line with the medical logic (Reay and Hinings, 2005), and therefore a type of goal-setting that is more motivational to act upon for clinical personnel than economic, production or efficiency-related goal-setting.

Vague and general goals can be used by leaders as ideological weapons to overcome opposition and resistance (Selznick, 1949). Our results, however, also suggest that the vagueness of these goals does not give a good cognitive guidance on what needs to be done to reach the goals. Leaders at the top management level might, however, prefer to use hairy goals as organizational goals, to ensure employee motivation and participation in early stages of the change process.

Many scholars have discussed the good fit of this type of motivational goal-setting with the “function of the executives” (Scott, 2003, p.292). Top management typically provides goals that articulate organizational values and overarching strategies. Middle management is responsible for translating the goals into specific products and services that are in line with the cognitive and practical aspects of the goals. One of the

main criticism of hospital changes based on NPM reforms is the lack of influence and participation on political and organizational goal setting from the professional groups and first-line personnel in the change processes (Slagstad, 2017). A conscious goal-setting regime can be one way of handling the different professional responses to organizational changes.

An example of hairy goals, taken from the document study in article 1, is the typically vague and generally formulated goal that states that hospitals should provide the best possible treatment for the patients in the region. Hard to disagree with, but also hard to operationalize - because it does not say anything about the actions and allocation of resources required to achieve the goal.

An organization such as a public hospital is composed of groups of employees that pursue both similar and different interests. Just being a member of a clinical, professional group at the hospital, does not necessarily mean total agreement on all prioritizing of resources, goals and values. Group members can seek allies in other groups when interests are similar, or negotiate with groups with different interests whose participation is necessary (Scott, 2003). Each group will attempt to impose its goals on the larger system and so influence organizational goals and strategy. No group alone, including the top management group, is normally able to completely determine the goals of the organization, mainly because the most important goal of one group or profession may be very much a subsidiary goal for another group. In this sense, goal-setting is inherently linked to power, influence, strategy and politics in an organization.

When implementing difficult goals, goal-setting theory recommends the use of learning goals when goals are too difficult and the employees do not have the competence and capability necessary for the process. (Latham, 2012). In our case, no one knew exactly the best and most efficient way to reach the final goal of better task and work distribution

by the new integrated health ICT systems. The goal was both difficult and changeable. Goal commitment is especially critical when the goal is difficult to reach. If employees perceive the organizational goals as a “mission impossible” then, according to goal-setting theory, this will diminish their work motivation (Locke and Latham, 1990; Cunha et al, 2016).

The danger of using managerial goal-setting to push employees out of their comfort zone is that they perceive the goals as not realistic, and give up on trying to achieve them. When a hairy goal is transformed into a learning goal, a person’s attention needs to be focused on problem-solving strategies, discovering and mastering the processes and procedures for performing well, rather than on the attainment of a specific level of performance (Latham, 2012). According to our informants, this was what happened in the last phase of the case presented in article I. At this point, the goals and challenges of the case were of a practical rather than a visionary nature and were now dealt with by “trial and error” as they arose.

Our findings indicated that goal-setting must change with the different phases of a change process, if it is to be useful.

In article 2 in this thesis, we followed a very different type of change. The participating action research in the second article in this thesis was also a result of top management going new ways to succeed in organizational changes. The establishment of developing day care surgery as a field, and establishing a new day care surgery department, had been a goal for the hospital for twenty years. Top management for the surgical department realized that it was going to be hard to develop an efficient multidiscipline department with an improved and patient-centered workflow, without a process which involved breaking up of professional cultures and traditional management structures. This was met with considerable resistance from different professions, not only the physicians, but

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also among the anesthesia nurses. In April 2014, they succeeded in opening a day care surgery department outside the hospital area. How this multidisciplinary day care surgery department with a new management structure and team structure affected task planning, work motivation and workflow was one of the research questions in this paper. Our results indicated that one way of achieving the goals of pulling down silo walls and hierarchies, of stopping turf wars and preventing professional logics and identities hindering the future organizational development of hospitals, is to develop a hospital organization that is focused on greater multidisciplinary collaboration and strong participation in the change process by all involved occupational and professional groups. But this is a clear dilemma in the health sector. You have groups of clinical personnel, such as the physicians and nurses, reporting high levels of job demands such a high work load, high time pressure and work situations such as never being able to do all their work tasks before their shift is over (e.g. Visser et al., 2003). On the other hand, giving them the resources of being asked to participate in organizational development processes also means putting extra job demands on already hard-pressed personnel.

The management goal in this study was creating a work environment with employees from different professions working together under a new management structure allowing them to discuss and improve their workflow and interact socially. This allows a new structural context to be created in which it is possible to come up with new solutions to problems and challenges in the work situation, together.

The study of the establishment of the new DCS showed that it was possible to develop a cooperative, democratic and multidisciplinary work environment with a new workflow, task distribution and culture surprisingly fast. According to the informants in the study, this was due to physical relocation, the new management structure and the high levels of participation on both work flow and work environment. Critics may claim that using two decades to open a new day care surgery

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department is not exactly extremely fast, but our results indicated that very quickly after the opening, a new work culture was established, and according to our informants, this work environment had a higher degree of inter-professional cooperation and socialization. When it comes to achieving a more efficient task planning and workflow by separating day care surgery from acute surgery, previous research has revealed mixed results, depending on the variables measured (Kjekshus and Hagen, 2005). If you use the same pool of resources (e.g. same operators, same anaesthesia personnel) and just reorganize this group of personnel, improvements in one variable (e.g. increase numbers of day care surgery operations per year) may lead to a decrease in another variable (less resources available in a general surgery department). So even if it sounds intuitively sensible to ‘ring fence’ day care surgery from acute surgery to improve efficiency, this type of organization may influence the total efficiency of the surgical division, or other important hospital services (e.g. in our case the physicians’ ability to do other work tasks in-between operations).

In a hospital, the ability to handle acute situations and emergencies in an efficient manner, will always be an overarching goal, because this is often life-threatening situations for patients, and they will, and should, be prioritized. If all day care surgeries are organized outside the main surgical department, it may also lead to “slack” resources in these departments in periods of few emergency admissions (Kjekshus and Hagen, 2005). Mixed surgical departments will normally have a lot of operations that are planned for (so not emergency), but with too complex and too high risk to perform as day care surgery. In our case, there was also a range of day care surgeries being performed at the main hospital, even after establishing the new day care surgery department. We did not have data for examining how the establishment of a new day care surgery affected the surgical department as a whole, and that was neither the aim of the study. To organize the DCS in a patient-centered and multidisciplinary manner may have other advantages than just

efficiency, i.e. numbers of operation per year. Even though efficiency was a prioritized goal for the top management in the establishing of the DCS (4000 operations per year), other goals were also formulated as possible advantages of establishing a multidisciplinary DCS.

One of these goals was to develop day care surgery as a medical field where all involved professions (and employees) were specialized to handle this type of operations.

Hospitalization of patients will under normal circumstances be much more resource demanding than day care treatments. In Denmark, they have had a political focus on developing a so called “fast track” day care surgery as a field, and found that they can now perform a much larger percent of surgical operations as day care treatments than previously (Engbæk, Bartholy and Hjortssø; 2006; Husted et al., 2010).

There will always be advantages and disadvantages with all types of hospital organizations, but a day care surgery with a broad field of different types of suitable operations will demand less resources economically and also be a way for the public health service to win back some “easier” patients-groups from private clinics which have been taking a range of these “easier” operations due to their specialized organization.

Even if an enduring aspect of change management theories has been its humanistic orientation with a focus on employees, employees’ well-being, the possibility for developing their skills, giving them meaningful job tasks and competence development (By et al., 2011), has this focus on humanism typically been subordinated the focus on organizational goal-setting, efficiency and profit maximization (Grieves, 2010; By et al., 2011). When Brown and Harvey (2004, p. 5) define a change leader as ‘a person in an organization responsible for changing existing patterns to obtain more effective organizational performance’, it is a good example of effectiveness trumps humanism. There is not necessarily a controversy between these two goals, though. One reason

that change processes might fail, or not live up to expectations, can be that change practitioners and managers might be too close to the organizational life to see beyond organizational ends. On the other hand, academics and scholars might be too far away from organizational practice to develop an applied focus and the possibility to educate managers of tomorrow (By et al., 2011). New ways to unite the theoretical and practical approach to change processes and research, can be to use a typical consultant tool for activating big groups such as ‘the World Cafè’ method (Brown and Issacs, 2005). In article 2 in this thesis, this method proved to be an efficient way to get a group of employees to participate in the discussion of both problems in their work environment, and more importantly, coming up with suggestions and solutions for how to solve them. Modern day change management has a tendency to have a problem-focus perspective on change, the so-called ‘diagnostic perspective’ (Bushe and Marshak, 2009; By et al., 2011), with external change agents coming in as doctors to ‘fix the problems’.

In healthcare organizations several key professions have not historically been encouraged to obtain competency in change management, conflict resolution and leadership issues during their education or in their work life (Clark, Spurgeon, Hamilton, 2008). Yet successful organizational development of hospitals is very dependent on active engagement from the clinical professions, not only to deliver high quality clinical work tasks, but also in management and leadership roles (Clark et al., 2008). With more focus on multidiscipline team-based work and integrated patient-service approaches in health-care, it is important that clinical workers also have the skills to function effectively in these more complex work systems (Clark et al., 2008). Even if the ‘medical logic’ (Reay and Hinings, 2005; 2009) has been challenged since the introduction of NPM reforms, and the medical autonomy in the hospital setting reduced, it is still hard to make significant changes in this sector without the cooperation and support of clinicians (Browns and McNulty,

1999; Ham, 2003; Clark, Spurgeon, Hamilton, 2008). But the nature of being a clinical profession has also changed with external influences such as greater demands for accountability, safety of patients, and more medical information available for patients through internet and social media, on top of increased patient rights in general (Dowton, 2004; Clark et al., 2008). These changes will make management skills more crucial for clinical personnel so that they can learn how to efficiently participate and influence important organizational development processes.

5.3 How can professional disagreements in policies and distribution of resources influence outcomes such as workflow, work motivation, the psychosocial work environment and job performance among hospital employees?

Since modern hospital organizations were established, hospital employees have been studied as a prototype of how strong professions interact. Bucher and Strauss (1961) point out that while professions may be united in associations, they are often heterogeneous, typically consisting of competing and conflicting segments. However, it is still common to view professions as groups representing common interests with respect to work practices and reward levels (Gilmartin and D'Aunno, 2007).

When professions in the hospital sector interact, such interaction is characterized by an authority structure based on clinical, economic and managerial responsibilities. According to Heeks (2006), we often see rationalities collide among professions in hospitals. The archetypal example of this is the collision between technical, medical and managerial rationalities. The technical rationality is typically shared by engineers and ICT professionals responsible for clinical and administrative

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equipment and a diverse group of management systems and support systems. The medical rationality typically refers to the medical practitioners' interest in enhancing clinical performances and developing their professional field of expertise. The managerial rationality applies to hospital leaders who are responsible for achieving the performance and financial targets set by higher authorities.

The collision between these rationalities, is typically observed when those who plan and propose and those who are expected to follow and respond base their views on different rationalities. For example, a financial motive linked to

treatment targets may explain why the hospital management refers to departments at the hospital as "cost units", and why they favour unit pricing of clinical interventions, while the medical staff may be afraid that such an approach will undermine their medical criteria and clinical work standards. Similarly, the ICT staff may propose to categorize and benchmark tasks performed by nurses in order to generate better management data, while nurses may see this as a precursor for a quantitative evaluation of caregiving and for introducing performance competition, which many resist.

Common to all conceptualizations of this kind is the premise that leading members of a profession have interests and conceptions that systematically differ from the interests and conceptions of leading members of other professions. These connected interests and conceptions of professions are what we refer to as technical, medical and managerial rationalities in article 1 in this thesis.

Especially physicians have had considerable amounts of clinical autonomy in the history of healthcare (Ham and Dickenson, 2008). This clinical autonomy was challenged in the 1980's following the introduction of management standards in European healthcare systems (Clark, Spurgeon and Hamilton, 2008). A move towards more business-like health care field has challenged the everyday management of the

hospitals, not all health service professionals agree on the decisions that are taken and do not perceive some of the outcomes as desirable. Both improving the health of the population and the delivery and effectiveness of healthcare are very dependent on the support and engagement of the different professions working in the health-care services (Clark, Spurgeon and Hamilton, 2008). Organizational changes going against the core goals and values of professional groups in the health sector can lead to disagreement, distrust and disengagement among employees (Long and Spurgeon, 2012).

According to Ackroyd (1996), will dominant professions strive to preserve their positions in organizational hierarchies. Trends related to NPM have, however, reduced their influence to benefiting those with managerial responsibilities and to those concerned with economic incentives. It has been argued that medical professionals are likely to resist these types of changes (Broadbent, Dietrich and Robers, 1997; Exworthy and Halford, 1999; Martinussen and Magnussen, 2011), resistance from medical professionals may limit the effects of health policy changes. Organizational changes of various kinds are continuously being demanded in the health sector. Budgets become leaner and patients become more numerous, and with a stronger focus on patient rights, the health sector becomes more closely regulated, and targets are specified, measured and assessed. In this landscape, organizational changes can be perceived by employees as more work and additional responsibility, an increase in job demands without increase in resources such as autonomy, status and salary, but with increased bureaucratization as a consequence (Evetts, 2003). Some scholars have claimed that radical government changes have successfully undermined the medical profession (Doolin, 2002). They are claiming that clinical professionalism is a unique form of occupational control of work tasks which have distinct advantages both for the patients and for the practitioners, and should be over market control. Organizational and

bureaucratic forms of control may impoverish and standardize the quality of service to the patients (Friedson, 2001; Evetts, 2003).

There have also been a number of critical articles, in Norwegian mass media, on hospitals being top-down controlled systems with a new managerial nobility in control, in which a culture of fear and threats are frequently used to silence whistleblowers and critics (e.g., Utne and Risøe, 2016). In this ‘managerial logic’ there is an increasing focus on productivity and cost efficiency and a reduced focus on improved medical quality and care in the treatment of patients (Slagstad, 2017). Doctors with many years of work experience in the hospital sector are raising concerns that the measurements used to evaluate the quality of their job are the wrong parameters, that a heavy administrative burden takes the focus away from patient care, that health information systems steal patient time instead of being a useful work tool, and that reporting adverse events can be seen as disloyal and can be punished rather than encouraged and solved. Public service outcomes include elements of care quality that may be difficult to measure (Anderson, 2012), but still important to value. This is also in line with critics of the NPM influence of public healthcare organizations, where focusing on efficient “production” has been more important to top management than other goals of NPM, namely providing a more patient-centered care based upon patient security, holistic care, transparency of important decisions, and implementing of evidence-based methods (Anderson and Liff, 2012).

The stakeholders active in a public hospital change process, can range from the political level and through all the different levels of professions and patient- groups. The challenge of being able to implement organizational changes as planned, will therefore normally be more complex when the list of stakeholders increases.

In article 3 of this thesis, we followed the negative side effects of disagreeing with important organizational values, policy or prioritizing, as we labeled as institutional stress. The JD-R model focuses on the

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importance of awareness that every profession and work climate may have their own unique pattern of typical expected demands and available resources built into the organizational structure. In this study, our aim was to contribute to the literature with new insights regarding the connection between institutional stress, motivational resources and job performance among a range of different hospital employees. In our model, we postulated that institutional stress, especially among clinical professionals, is related to a long-term disagreement with how politicians and managers are running and controlling hospitals, distributing hospital resources, and the new ways of measuring the quality of hospital performances. ‘We measure what is measurably, not what is important’ is a typically quote from clinical personnel in the newspaper debates regarding hospital management and control systems. Another proposition of the JD-R model is that several different job resources can play the role of buffer for several different job demands, making a simple model more complex. Not only will a work environment have its unique pattern of demands and resources built into the job design, but so will the different professions and occupations also have, and on top of that, so will every individual employee have. Consistent with this view, local and thoroughly information is needed to design healthy and productive work environments.

The problem with stress experiences related to institutional stress is that disagreements on important goals, correct use of resources, values and organizational politics, are often long-term and professional rooted conflicts in organizations. The general response to stress stimuli is a non-specific alarm response, eliciting a general increase in wakefulness and brain arousal, and specific responses to deal with the response for the alarm (Ursin and Eriksen, 2004, p.571). In short-terms, the unpleasantness of the alarm is no health threat.

Ursin and Eriksen (2004) developed the cognitive activation theory of stress (CATS) after a long series of experiments and theoretical papers with data from both animals and humans. According to CATS it is the

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individual's experience of the demands and the expectancies of the outcome which determine whether the demands will cause stress responses, but a long period of sustained activation without a solution can lead to a negative expectancy outcome, and thereby increased levels of illness and disease through pathophysiological processes (Ursin and Eriksen, 2004).

The non-significant direct effect of institutional stress on job performance in the leader group is interesting. Why is there a direct effect of institutional stress on employees without managerial responsibility, but not in the leader group? One possible explanation is that this could be related to employees' perception of their influence on important goals, power and position in the hierarchy of a public hospital. Manager or leaders might feel they have more power, influence upon and knowledge of processes in the organization, and institutional stress does therefore not affect them in the same way as it might employees without managerial responsibilities. In the employee group, they might perceive that they have less influence over the processes that affect important organizational decisions than the leader group has. This difference may also be caused by leaders being in a work situation where they are further away from the consequences of some of the political decisions (e.g. less patient responsibility).

Another interesting finding is that the presumed mediating effect of the support of an immediate supervisor on institutional stress and job performance, was not significant. This finding was the same in both the employee and the leader group.

There has been a growing scientific interest in leadership research in the healthcare sector (e.g., Anderson and McDaniel, 2000; Long and Spurgeon, 2012; Swayne, Duncan and Ginter, 2012). A relatively large span of control, with large numbers of employees reporting to one leader, and leaders who have both clinical and professional responsibilities and must carry out work tasks in addition to top management responsibilities,

are factors typical for many health care leaders. These may affect how they perform their leadership responsibilities in this sector and be one explanation of why support from an immediate leader was not significant in our model in article 3. This finding however needs to be explored further in other sectors with other leadership support measurements and leadership cultures, before we can draw any conclusions.

On the other hand, autonomy, competence and the social support of colleagues were all significantly and negatively related to institutional stress and significantly and positively related to job performance.

Since institutional stress had a negative influence on job performance in a range of different professions and groups of hospital employees, one could therefore argue that as this group is so diverse, the findings could also be relevant in other sectors than the health care sector.

Nurses and physicians are educated and socialized in accordance to their professional values. The changes like the NPM reforms and the emphasis on performance goals and running the hospital like a private business may challenge work values and create dilemmas for hospital employees. As health professionals, they may feel responsible to both their profession and to the organization where they work, and there will be a risk of experiencing ethical conflicts (Gaudine, LeFort, Lamb and Thorne, 2011). In article 1, 2 3 and 4 in this thesis, we discuss different types of ethical or professional conflicts. Previous research indicates that nurses experience ethical conflicts due to workload, a perceived lack of valuing of their human resources and ineffective or inappropriate actions taken by the organization (Gaudine and Beaton, 2002). From the physicians' perspective, constraints on healthcare funding have made physicians feel caught between patient advocacy and bedside rationing (Lauridsen, 2009). In a survey of Norwegian physicians, two thirds of 1005 physician respondents experienced distress because of waiting lists for treatment as well as because their time constraints impaired

patient care (Førde and Aasland, 2007). Lack of respect for professional values, insufficient or scarce resources and their impact on work life and patient care, non-agreement with organizational policy, administration turning a blind eye and lack of transparency or openness of the organization are among the most common ethical dilemmas experienced by health personnel (Gaudine et al., 2011).

Studies indicate that teaching health professionals ‘conflict management strategies’ is not a common organizational or educational initiative. When health-care personnel were asked whether they had been made aware of conflict management methods or information during their professional education, 36 % responded they had and 64 % had not. Physicians seemed to be the least informed, as 79, 8 % reported no former education on conflict management (the respective percentage for nurses was 63.1 %). In contrast, 42 % of professionals holding a managerial position responded that they were informed about conflict resolutions (Pavalakis et al, 2011). There seems to be a large discrepancy between the numbers of professionals trained in conflict management, the amount of time conflict resolution is reported to take in an average workday. In a study on living conditions in Norway, 30 % of the respondents reported being in a conflict with their manager or department head, 20 % reported being in a conflict with a colleague (Einarsen et al., 2010). Conflict resolution is reported to take approximately 20 % of a manager’s time (Furnham, 2003). In article 2 in this thesis, a course in conflict resolution technics as a preventive measure in establishing a new work culture, was a part of the participating action research. Our informants reported that they never had a similar course before in their work life career; some had over 30 years of work experience in the hospital sector.

One possible side effect of not teaching employees’ conflict resolutions technics may be a psychosocial work environment with high degrees of bullying. Organizational change processes and a work climate with strong professional groups may increase the chances of bullying among

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employees (Salin, 2003). Research on the causes and antecedents of workplace bullying, has in general been approached from two perspectives. In the first perspective, emphasis has been put on individual characteristic of both targets and perpetrators. For instance, with regard to the target, bullying has been related to personal characteristics such as low social skills, neuroticism, introversion and social shyness (Zapf, 1996; Einarsen, Rakness and Matthiesen, 1994; Mikkelsen and Einarsen, 2002). Regarding the perpetrator, bullying has been related to various personality types as “authoritarian” and “tyrannical” (e.g. Ashforth, 1994). The second and most dominant perspective is inspired by the work environment hypothesis where bullying is attributed to organizational and workplace characteristics (Hauge et al., 2007), and a stressful work environment (Einarsen, Matthiesen and Hauge, 2009). In this thesis, I focus on workplace bullying not as a simple conflict between two individuals, but rather as a complex phenomenon that can be understood through an examination of contextual and organizational factors (Johnson, 2009). The results in article 4 in this thesis, indicated that institutional stress and ethical dilemmas have significant negative influence on bullying, and they reduce job performance, satisfaction, and work ability among nurses. However, job resources, such as competence development, and colleague support, reduce bullying and increase job performance, job satisfaction and work ability among nurses. Bullying plays a mediating role in the relation between the majority of job resources and job demands, and bullying negatively influences job satisfaction and work ability among nurses. Bullying does not have a direct influence on self-reported job performance among nurses. It is critical for the development and management of human and organizational factors in hospitals to gain insights into organizational and structural factors that influence health personnel outcomes, and mediators such as bullying. With this knowledge, it is possible to initiate appropriate actions to reduce the levels of bullying in the health sector.

One central assumption in the JD-R model that has received empirical support, is that job demands evoke a stress process due to energy depletion, and lack of job resources evokes a withdrawal process, because it undermines employee motivation and learning (Bakker et al., 2005). A high level of emotional demands will therefore be expected to have a range of outcomes in a hospital setting. Emotional demands in a work setting can be defined as the frequency of exposure to emotionally demanding situations (Bakker et al., 2005). In a hospital setting this could be emotionally demanding situations with severe sick patients and their families, professional conflicts, impoliteness and intimidations. A clinical hospital employee may also experience emotional demands due to high workload (not enough time to serve the patients according to personal and professional standards), having to refuse further treatment or sending the patients home too early.

Most public hospitals in developed countries have, over the years, adopted a functional-like organizational structure built around a discipline-based specialization (Lega, 2004). They have assumed the form of professional bureaucracies (Mintzberg, 1983), characterized by the search for standardization of procedures and products.

This type of organization has been called a functional “silo” structure (Lega, 2004) with a structure that can make it harder for patients needing services across borders in different departments. An alternative way to organize hospitals is to organize the services around patient groups, instead of around the disciplines or professions. Profession-based organizations can help create a strong feeling of relatedness and belonging to your profession or department, through working closely together and having a shared worldview of values and attitudes, and so increase individual work engagement. As a member of a subgroup, you have more power and influence if you are organized together rather than spread around in an organization. Too much power in the hands of a small group of employees might have a negative impact on organizational development due to other stakeholders having too little

influence (Ferris, 2002). It can therefore be argued that the profession-based organization has given the medical associations considerably more power and influence than other professions in hospital organization.

Other negative side effects of a discipline or profession-based organization can be that the turf-battles, described as so typical between professions and departments in the hospital sector, may increase with this type of organization due to little interaction with other professions outside their own field (Bate, 2000; Lega, 2004, 2005). In change processes, it can also decrease the ability to see what is best for the organization as a whole in a meta-perspective, fighting instead solely for the interest of your own profession, patients or department.

How to organize a hospital in an optimal way with a wise distribution of resources and demands, skills, medical knowledge, technology and employees in a way that gives patients the best treatment that the available resources allow, and a healthy work environment for staff, is a very complex question and one that certainly cannot be solved in this thesis. However, we did find some interesting results and hopefully this can inspire some implications for future research and policies.

5.4 Final remarks and implications for future research

A research review of organizational change studies claimed that change management tends to be “reactive, discontinuous and ad hoc in real life, and that a valid framework for organizational change management is lacking” (By, 2005, pp. 370). Article I in this thesis adds the notion to this framework that goal-setting practices may become more effective if they are adapted to characteristic features of the organization and its members. To validate this, we need further empirical studies of the relationship between goalsetting and change, which of different types of goal-setting is best suited with organizational characteristics and

organizational change. And also, more research on how to change goal-setting in different phases of an organizational development process.

The empirical data on technology's impact on health-care efficiency and safety is mixed. The optimistic calculations of the positive effects of health ICT systems have yet to live up to expectations (Buntin et al., 2011). The original promises of health ICT may be better met if the systems are redesigned to address flaws such as incompatibility, and being too slow and too difficult to learn (Kellermann and Jones, 2013). Our results on implementing health ICT systems using an agile project style could therefore be interesting to explore further, based on the potential better task planning to achieve a streamlined and effective use of resources.

Further research could show whether our results could be useful in implementing types of ICT systems other than task planning and in other types of organizations than hospitals. More research on this topic is needed to reach any sure conclusions. Our findings, however, suggest that hairy goals and agile project management can be a successful combination in improving hospital health information systems.

Future research should also renew interest in work design research, this type of research has slowed down the last 20 years (Humphrey, Nahrgang and Morgeson, 2007). With the rapid changes in work cultures due to new technology, digitalization and innovations, scholars must still investigate this important topic because the design and structure of organizations and work have a profound effect on employees' behaviour, attitudes, work motivation, well-being, stress, bullying, the work climate and job performance (Ryan and Deci, 2001; Fredrickson, 2003; Latham, 2008). In Humphrey, Nahrgang and Morgeson's (2007) meta analytical study more than 34 % of the variance in performance and 55 % of the variance in job satisfaction were explained by 14 work characteristics. Future research should focus on what types of organizational, structural

and managerial measures will improve employees' health and well-being and their performance in a modern work setting.

Institutional stress did not have a direct effect on job performance in the leader group in article 3, and in article 4 bullying had direct negative influence on job satisfaction and work ability, but not job performance. In future research it could be interesting to explore further the JD-R hypothesis that employees can potentially engage in two different sorts of job performances, called in-role and extra-role performance. In-role performance is defined as officially required behaviour and outcomes that directly serve the goals of the organization (Motowidlo and Van Scotter, 1994; Bakker, Demerouti and Verbeke, 2004). Extra-role behaviour is defined as behaviour that promotes the organization, without necessarily directly influence an employee's target productivity (Podsakoff and MacKenzie, 1994). We used self-reported job performance as a measure in article 3 and 4, maybe our results would have been different with a more accurate and wider measurement of job performance.

Previous studies have produced a long list of possible antecedents of work related stress. These include job demands such as high work pressure, emotional demands and role ambiguity (e.g., Bakker and Demerouti, 2006). Few studies have, however, focused on how and why institutional stress affects employees. Further research should replicate the conceptual models developed in article 3 on institutional stress and job performance and investigate the robustness of the models in different work settings. It would also be interesting to explore the models in relation to other types of outcomes, such as how institutional stress influences general job satisfaction and intention to leave organizations, and also explore further if institutional stress is affecting some professions more than others in health-care organizations. Maybe the most important to explore further would be what managers and leaders can do to reduce employees' feeling of institutional stress.

One criticism against job stress models is their static character (Bakker et al., 2005). Researchers have recycled the same variables in many occupational domains assuming that these variables have universal relevance. According to the JD-R model, different demands and resources may prevail in different work situations. Future studies may reveal which particular job resources may buffer the impact on job demands in a range of outcomes both organizational (e.g. job performance) and individual (e.g. job engagement). In order for stress research to be relevant and have external validity, it has to deal with combinations of work characteristics and distinguish between single predictors and combinations, and the importance of investigating the multiplicative impact of demands and resources (Kahn and Byosier, 1992; Bakker et al., 2005).

Managers and leaders of health-care organizations such as hospitals, should be aware of the typical emotional demands for each profession or occupation, and have a focus on how these demands can be buffered by offering the right type and amount of resources. For example, if you are the manager for newly educated physicians in a hospital setting, you should be aware that numerous studies and reports indicate that they struggle the first years in the work force due to long workdays and high work-pressure (Nilsen, 2017). They also experience a high level of emotional demands in meeting the vulnerability of patients and their families. On top of this, rigid rules for absence during internship create high job/family conflicts. Being prepared for such a work life is demanding, and according to the Medical association, to a large extent neglected in their education. With an education that primary focuses on how to diagnose and treat, the first years in operation can be very demanding for young physicians. What can politicians, leaders and managers in charge of running and organizing hospitals do to prevent negative outcomes such as burnout, bullying, reduced health, work engagement and performance? To have a strategic, conscious focus on how to fill up with the right type of resources to buffer unavoidable and chronic job demands (e.g. high work pressure and emotional pressure

from patients and relatives) to reduce negative outcomes, may according to the JD-R model, be a smart place to start.

How we organize our hospitals will affect the services they can provide. Providing the best possible treatment to patients, given the resources available, is tremendously important to society. However, the way we organize hospitals will not only influence this, but also the well-being, status and career development of a large number of employees. With new hospitals being planned and built, future hospital research should focus on action research and longitudinal designs to learn more about efficient hospital organization in cooperation with clinical personnel.

The importance of this therefore makes it even more remarkable that the best way of organizing hospital services has not received greater focus and interest in organizational studies. The significant and growing economic importance of the healthcare sector and its role as a major national employer will not reduce the demands on the health care sector in the years ahead, particularly in the light of a steadily growing elderly population with multiple, complicated medical conditions.

It is critical for the development and management of human and organizational factors in hospitals to gain insights into organizational and structural factors that influence staff outcomes, as well as mediators such as bullying. With this knowledge, it is possible to initiate appropriate actions to reduce the levels of bullying among different employees in the health sector.

Future research should examine how organizational improvement programs can reduce workplace bullying by focusing on reducing institutional stress and dilemmas among employees. These programs should focus on achieving higher levels of role clarity, transparent and participating decision-making procedures, improving management and employees' conflict resolution skills and structural ways to handle and reduce ethical dilemmas among staff.

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Further research on hospital organization and leadership in health services should therefore be both prioritized and encouraged. Health care services are something that we all care about.

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Hairy Goals in Change Management: The Case of Implementing ICT-Supported Task Planning in a Hospital Setting

Gunhild Bjaalid, Thomas Laudal & Aslaug Mikkelsen

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Utilizing participating action research design principles drawn from the socio-technical theory to establish a multidisciplinary day care surgery department

Gunhild Bjaalid

University of Stavanger, Norway

Rune Todnem By

Staffordshire University Business School, UK

Bernard Burnes

Stirling Management School, UK

Olaug Øygaarden

University of Stavanger, Norway

Aslaug Mikkelsen

University of Stavanger, Norway

Stavanger University Hospital, Norway

Abstract

This single case study reports on the establishment of a multidisciplinary day care surgery at a Norwegian University Hospital utilizing participating action research design principles drawn from the socio-technical theory. Data was collected through mixed methods including stakeholder analysis, document studies, observations of meetings, semi-structured interviews and participating group methods. The senior management at the hospital had decided to implement a department that diverged from organizing around professional disciplines, and this decision evoked strong resistance among several professional groups in the first phases of this project. This case follows the implications of the decision to establish a multidisciplinary day care surgery through reorganizing location, staff and management structures. The findings suggest that the hospital achieved the vision of creating an efficient multidisciplinary work environment, reducing the culture of tribalism between professions, and creating a work environment with a high degree of knowledge transfer. Employees in the new day care surgery department report on new ways of working together as a team where they are allowed to contribute to important decisions in task planning, organizing and running the department, experiencing responsible autonomy and having a close relationship to their formal leaders, and a good working environment in general.

Key words: Action research, Day care surgery, Hospital organization, Organizational change, Socio-technical design, Inter-professional teams, Patient-based organization

Introduction

Health-care inflation due to rising costs is worrying Europe's politicians. At the same time, Europe's population is only getting older and suffering from multiple medical conditions, straining an already stretched healthcare system. Health analysts expect the greying of Europe alone to push up public spending on health and long-term care in the EU by as much as 10 percent of GDP by 2060 (Maarse, 2006; Paun, 2016). This means that state funded healthcare systems will only continue to be under increasing pressure to organize their services in a functional and cost effective way. Practically all European healthcare organizations are currently subjected to New Public Management (NPM) reforms. Standardization of treatment and the development of patient pathways, reduction of hospitalization and increasing day care or polyclinic treatments, are all examples of organizational changes with a goal to increase efficiency and reduce costs (Lapsley, 2008).

Within this context, a Norwegian University Hospital (NUH) set out to improve its elective day care surgery department (DCS) provision through establishing a new multidisciplinary patient-centered department with a focus on how different healthcare professions interact in a greater degree than what is traditionally the case, and to provide patients with the best possible treatment (Saha, Beach & Cooper, 2008). The hospital management had several efficiency goals for the new DCS-department such as increase operational capacity measured by numbers of operations per year, and develop higher day care surgery competence by converting hospitalized patients over to day care treatment, reduce numbers of cancelled day care surgeries, and win back patients choosing other hospitals with shorter waiting times for their procedures. They also had patient related goals such as more flexible patient care, increase numbers of satisfied patients, and on top of that, increase employee satisfaction through the development of a multidisciplinary department. Many change and development processes are not successful and do not live up to their original intentions. It is therefore tempting to think that we need new change process knowledge and theories if we are to improve success rates. We, however, in this study turned this thought around. We wanted to see whether an old theory (the socio-technical approach), that has been well developed by researchers in the field in close relationship with staff and managers of the organizations they were developed in, can still be useful in a modern hospital setting.

In order to secure a successful change and transition, the hospital's senior management team initiated a democratic and participating process involving all the professions affected by the creation of a new multidisciplinary department. Furthermore, they invited researchers from the local university to get involved as external knowledge-workers, consultants, and researchers documenting the project. There were some testing management challenges to be addressed in terms of implementing a multidisciplinary model including planning for and managing employees and resources in the new department (Øygaarden, By, Bjaalid and Mikkelsen, in process).

As a result, this article reports on the establishment of the DCS through its first 18 months of operation. The purpose was to explore if participatory action research design principles inspired by the socio-technical system approach, could facilitate organizational change and

help overcome resistance and conflicts in establishing the new multidisciplinary patient-centered DCS department.

The following research questions were explored:

- 1) How can the use of participating action research design principles drawn from the Socio-Technical System Approach be utilized to prevent and overcome conflicts when establishing a patient-centered multidisciplinary day care surgery department?
- 2) How can the use of participating action research design principles drawn from the Socio-Technical System Approach be utilized to obtain a good work environment with an efficient task planning that can facilitate ambitious operational goals?

Organization Development and the Socio-Technical Systems Theory

Deriving from the work of Kurt Lewin (1951), Organization Development (OD) is the most influential and widely-practiced approach to organizational change (Burnes & Cooke, 2012). According to French and Bell (1995, p. 1) ‘Organization development is a unique organizational improvement strategy that emerged in the late 1950s and the early 1960s ‘... [It] has evolved into an integrated framework of theories and practices capable of solving or helping to solve most of the important problems confronting the human side of organizations. Organization development is about people and organizations and people in organizations and how they function.’ Lewin also coined the term ‘action research’ in his 1946 paper ‘Action Research and Minority Problems’, action research involves actively participating in a change situation, whilst simultaneously conducting research.

One of the earliest forms of OD is the socio-technical systems approach developed by the Tavistock Institute in the UK (Burnes, 2014). This approach assumes that to successfully change or improve a system first-hand information about the organization it sits within is required and this can only be achieved through empirical observations and detailed concrete descriptions of work tasks and work role relationships (du Guy and Vikkelsøy, 2012). Freedman (2013) recognized that attempts to change an organization’s social system without addressing its technical systems - or vice versa - produced suboptimal results. Therefore, action research is very much in line with the socio-technical focus on addressing significant problems working *with* organizational members, rather than simply studying them.

Emery (1969, 1978) defined technical systems to include a wide range of technology and materials such as unit operations and centrality of operations, the spatial layout and the

physical work setting, along with productivity and quality of the work as a whole. The social systems include tasks, task interdependency, occupational roles and grouping of roles into teams, how work tasks were coordinated and controlled, the effectiveness of production, the delegation of responsibilities, and the degree of reliance on the expertise of workers in making complex judgments and decisions. Furthermore, Emery (1978) defined three socio-technical system design principles:

First, the best design for a productive system is the one in which each part of the system embodies the goals of the overall system. Second, the system should be self-managing to the point that the work groups have the autonomy to cope with their problems by arranging their own use of resources. This second design principle has proven to be the most important principle in distinguishing the socio-technical system's paradigm from other approaches to work design (Pasmore, 1995). This is because, as Emery (1978) pointed out, it permits adaptation to change by focusing on the development of democratization, participation, individual development, task variety and work autonomy. Third, the best design will be the one that recruits and develops its constituent parts so that they have the intrinsic properties suited to the demands of the position they occupy. At a basic level, this third principle would indicate the need to design jobs with a degree of multi-skilling, but at a more sophisticated level, it implies that account must be taken of the human potentialities for reasoning, creativity and leadership that might be expected in any group of human beings (Emery, 1978).

A central tenet of the socio-technical approach is that behaviour is shaped by the work group to which an individual belongs. Therefore, rather than seeking to change the behaviour of each individual worker, one should seek to change the behaviour of the work group, which is what one might expect from a system perspective (Burnes, 2014). The socio-technical approach also found that job satisfaction and productivity increased when jobs were designed to comprise 'variety, task completeness and above all autonomy' (Wall et al. 1984, p. 15).

In their classic study of the longwall method of coal-getting based on their work with workers in English coal mines, Trist and Bamforth (1951) showed how introduction of new technology and work design in the coal mining industry had large and unexpected consequences on mine workers' responsible autonomy, psychological well-being, team related work and collaboration processes as well as on their social structure. The socio-technical research approach often involved observation of workers in their natural work environment for several years at the time. It was a 'the devil is in the details' type of research, with a focus on describing as accurate and concrete as possible work task, work flow, interdependency of occupational roles and authorities or management structures. The socio-technical approach is grounded in detailed description of content, purpose, context and tools. 'Occupational roles express the relationship between a production process and the social organization of the group. In one direction, they are related to tasks, which are related to each other; in the other, to people who are also related to each other' (Trist and Bamforth, 1951, p.14).

Emery (1978) was a pioneer in specifying the psychological requirements at work. These included control over work processes and tasks, the aim towards completion, the need for learning and variety, and the need for individuals to perceive their work tasks as interesting and meaningful.

According to the socio-technical approach, without a clear sense of what the organization's core tasks are before implementing changes, the change process is at best for nothing and at worst quite destructive. To neglect the specificity of circumstances in order to generalize abstract change principles to make a 'one size fit all' recipe for change processes in all types of organizations, may prevent the organization to pursue its specific purposes (du Guy and Vikkelsøy, 2012). Having this in mind; Cherns's (1976) elaboration of socio-technical design principles - described in the following section - was not used as a cookbook recipe for a successful organizational development into a socio-technical system, but as guiding principles for the second phase of this case study.

The socio-technical design principles

Focus on the interrelationship between humans and technology

A fundamental tenet of the socio-technical approach is that the design of a work system should understand the interdependence between and give equal weight to social and technical factors in order to achieve the joint optimization of the two subsystems (Cherns, 1976). This is because the overall organizational system can only maximise performance if the interdependency of the subsystems is explicitly recognized and designed to work in harmony (Emery, 1978).

Variety in work tasks and task distribution

Ideally, employees should be allowed to perform a variety of tasks so they can become multi-skilled. Emery (1978) argued that work design should always seek for a redundancy of functions rather than a redundancy of tasks. Multi-skilled employees are better able to cope with challenges or opportunities that may arise because they can rearrange how they organize themselves and the tasks they perform.

Developing decision-making ability and autonomy

In order to test out new work arrangements, employees must be provided with responsible autonomy. In socio-technical terms, this is often referred to as the principle of 'minimal critical specification' (Herbst, 1974). That is, employees should be told what they are expected to do, (e.g. design and run an excellent day care surgery department), but not how to do it. They should be allowed the space, with suitable support, to develop their own work procedures. This means that no more should be specified than the absolute essentials. However, the essentials must be specified.

Management structure

In order to enable responsible autonomy and self-regulation it is important that leadership and supervision are close and internal in the operating team. Thus, socio-technical theory challenges traditional leadership theories by arguing that autocratic control leads to sub-optimal performance (Mumford, 2006).

Shared goals

According to the socio-technical approach, the best work design for a productive system is one where each part of the system embodies the goals of the overall system (Emery, 1978). In order to do this, organizational members must share the responsibility of identifying challenges and solutions. They must look for continuous improvement, which means that change should be perceived as an ongoing fluid process rather than a process with an end point. This has been named the 'principle of incompleteness' (Cherns, 1976) and implies that work design is an interactive and continuous process.

Methodology

Context and background

This study was a cooperation between the local university's business school and the top management of the hospital. An important aim for the hospital management was to develop a day care surgery where different professions came together in an integrated and coordinated effort to treat a variety of pathologies in an efficient and cost effective way. The goal to develop a separate day care surgery department was not new. The process of establishing the DCS had been ongoing for several years, and since 1997, a number of attempts had failed. In 2003, the NUH had got as far as to design, fund and construct a new DCS building only to find the surgeons unwilling to relocate, or split their tasks between two locations. As a result, the new building was transferred to another department. Now they wanted researchers at the university to participate in the project as both consultants, and as researchers. For the hospital management this was also a small pilot for a much bigger project to come, namely building a new hospital in the area.

In April 2014, the hospital finally succeeded in opening the new DCS. The researchers collected data and participated in the project over a two-year period from October 2013 through the first 18 months after the DCS opened in April 2014.

The research approach in the first phase (the year before start-up) was initially inductive investigating empirically the action going on in the organization (Øygaarden et al., in process). In the next phase (the first year in operation), the participatory action research approach started.

Research design and data collection

This study was a single case study (Yin, 2011) using a participatory action-oriented method inspired by the socio-technical approach. In this case, the researchers used the following methods; stakeholder analysis, documents studies, observations of meetings, semi-structured interviews and participating group methods.

First, the researchers conducted a stakeholder analysis and analyzed all formal documents in the case. This involved 190 pages of project documents including goals, risk analysis and planning documents, internal information newsletters, e-mail exchanges and written notes from project meetings. At this time observation in the project- and steering groups established to work with the project, was also conducted. This observation started up the last year before formal start-up, the frequency for these meetings was an average of two to three meetings per month. Fields notes were written after these observations by the first author. So followed the first phase of interviews.

In-depth interviews with eight key stakeholders were carried out. All hospital departments influenced by the new day-care surgery at the hospital had employees participating in either the steering group or a project group. All interviews were semi-structured interviews taken at the hospital and recorded; they lasted up to 75 minutes. All professions (nurses, physicians, hospital leaders and administrative personnel) were included in these interviews.

After the initial round of data collection, the second phase of this case study started. In this phase reflections on action for change were developed in line with the socio-technical approach, they were both an inspiration for developing the changes, and a framework for analyzing the data. This work started before the formal start-up of the day care surgery and lasted throughout the first 18 months in operation. The focus in this phase was working together with all the leaders and regular employees at the new day care surgery to generate practical solutions for how they could achieve developing an outstanding day care surgery with a smooth workflow and good work environment.

In this phase, the socio-technical design principles (see page 4 and 5) were discussed and used to develop task planning and the work environment in the new DCS-department. Then followed a new round of in-depth interviews with nine regular employees at the DCS, as well as five interviews with the leader of the new DCS. These interviews had an action-oriented critical focus with the goal to bring forth ideas that could potentially be acted upon to improve both task planning and improvements of the work environment of the new department.

The first author of this article participated in three half day seminars with the goal that all regular employees should suggest and discuss potential to improve task planning and work flow, as well as the social work environment, and the interaction between these. The first author, who is a trained organizational psychologist, had the role as process leader of these seminars. The goal was to facilitate the group process to encourage reflective observations in line with Lewin's description of action research as a method focusing on developing workable solutions to practitioners' problems (Lewin, 1946). After five months, all employees participated in 'The World Café' method (Tan and Brown, 2005) focusing on the following three themes: 'The work environment', 'Efficiency and procedures', and 'How can we improve task planning and work flow in the future?' The Café was run as a combination of organizational development process and participating research design. The main aim of these seminars was to let the employees of the DCS-department define and formulate both problems and solutions to improve the work flow and work environment. The time between the seminars focused on trying out these actions in practice.

Participants

The informants were chosen after a stakeholder analysis and came from all relevant hospital departments affected by the new DCS, and from all administrative departments having a role in the process. Informants were selected based on their organizational positions, making sure that those especially relevant to the project were interviewed following due ethical procedures.

See an overview over the phases, goals, data collection and participating action research in this study in Table 1.

	PHASE 1	PHASE 2
Timeframe	2009 - 2013	2014 - 2016
Key Events	Project aimed at moving surgical patients from hospitalization to day care treatments starts. The project group recommends a new, externally located department, initiating Phase 1 of the project. Project re-assessed, foundational documents drawn up defining activities, location, staffing and financing for the new DCS-department. Project Manager hired, detailed consultations and planning with professional groups begin.	A multidisciplinary day care surgery department with a new management structure opened in April 2014 outside the hospital area.
Data collection / action research	Document analysis Including all types of informative documents about the project, reports from meetings, risk assessments reports, and goal-setting documents from top management (October 2013).	Participating interviews with an action-oriented critical focus with 9 regular employees in the new DCS-department. Five in-depth action-oriented interviews with the leader of the new DCS-department at different stages in the process. Interviews with the other two supervisors (one for operational nurses/one for anesthesia nurses) in the DCS-department (April 2014 to May 2015).
	Stakeholder analysis A stakeholder analysis was performed and representatives for all stakeholders were interviewed. (autumn 2013).	Three half-day seminars with all employees These sessions were part of the data collection, but also part of the action research with a goal to improve task planning and work environment in collaboration with the DCS-staff. Five months after start-up all employees participated in 'The World Café' method (April to September 2014).
	In-depth interviews with 8 key stakeholders (autumn / winter 2013).	Implementing of suggested changes in the timeframe between seminars.
	Observation in project and steering groups (autumn / winter 2013).	Evaluation of the project in a seminar with all employees October 2016.
Goals	Obtain detailed, concrete, practical descriptions of tasks, task planning, equipment, personnel and operations needed in the new DCS-department.	Establish a patient-centered efficient day care surgery and perform 4000 operations per year
	Overcome resistance among staff to move out of the hospital and establish a new management structure.	Establish a good multidisciplinary work environment with satisfied employees and improved operational teams
Action Research Design Principles used in this project		

Table 1. Overview over the phases, goals, data collection and participating action research in this study.

Interview guide

Standardized semi-structured interviews were utilized to produce comparable data, and all hospital documents and written reports from the project meetings in the pre start-up phase were studied. The main goals from the written documents were implemented in the interview guide. The interviews took place in the participants' normal work environment, and the interview guide consisted of open-ended questions, and were adapted to each situation and participant.

Data analysis

First, a preliminary analysis of the data noting key issues was undertaken, the resistance and time it took to establish the new department, and the difficulties in organizing different professions under a new common management structure stood out as themes to analyze further in the first phase of the case study. Second, an analysis guided by theoretical perspectives was performed (Gioia and Chittipeddi, 1991).

All text in the interviews containing information about establishing the DCS according to the research questions, were coded. The next step was first-order analysis of the selected data. Through this process, an account of events based on the dominant themes expressed by the research participants, was put together, and it was possible to look for patterns in these events and in the participants' accounts (Gioia and Chittipeddi, 1991). This strategy involves constructing a detailed story from the raw data, which was done in order to prepare an analytical chronology, clarifying sequences across levels of analysis and establishing preliminary analytical themes (Pettigrew, 1990). In order to discover the themes and patterns in the first order analysis, techniques such as categorization, abstraction and comparison were used (Spiggle, 1994).

Trustworthiness

In this study, a range of strategies were used both to avoid analyzing the data prematurely and to avoid other data interpretation flaws. First, the data was collected systematically over a long period of time (over two years) and then two independent researchers interpreted the data and developed first and second order categories based on the themes of interest. The incoming data was organized around certain topics, themes and central questions. The data was examined to see how it fitted the expected categories, and categorized into different tables and groupings of similar topics.

The experts working on this case (leaders, project leaders or employees at the DCS and the hospital) were used to participate both as informants in interviews, and to read through and validate, criticize or comment the researchers analysis.

Findings and Discussion

Key events and changes

In establishing the DCS, some major issues had to be addressed.

In the first phase of this study, senior management had to identify and overcome resistance among other stakeholders over the proposal to establish the DCS in a new building separate from the existing hospital with permanent employees from different professions located under a new management structure. This was seen as especially difficult as the employees involved were united in their opposition to the move away, both from the hospital and from their traditional management structure. One of the main challenges in the first phase of establishing the DCS was to build a coalition in support of relocating the DCS away from the hospital. A force field analysis was used as a method to gain a greater understanding of the changes required in order to achieve establishing a service-based DCS. The findings suggested that existing traditional and learned boundaries between professional groups and different stakeholder perspectives made the process of bringing all groups into one department under one manager something of a challenge (Øygaarden et al., in process).

In the second phase of this study, the hospital management and representatives from the business school at the local university used participating action research methods to formulate the operation, layout and structure of the DCS. This involved discussing and deciding on all the details of how the DCS should operate including the type of equipment, the layout of the new facility, which medical and other professions should permanently be employed on site, what services should be provided from the hospital, and DCS's new management structure. One of the main challenges in this phase was whether and how to involve temporary employees who would be based at the existing hospital in the management of the DCS.

<p>Different work hours allow more efficient work flow Predicable operation program Be able to give the patients good and efficient treatment in nice and functional surroundings Organize professions around patients Develop a new inter-disciplined work culture with social belonging across disciplines and profession Higher competence transfer between different professions</p>		<p>Humans and technology</p>
<p>Regular employees versus shifting employees Unclear authority, responsibility and accountability of services provided to the new day care surgery Leadership structure (who is leading who) Danger of creating “A and B teams” with both regular and shifting personnel Moving between locations takes time Fear of alienation from profession and “mother-departments” Competence transfer harder within your own profession</p>	<p>Challenges with new organization of personnel and management issues</p>	<p>Management structure and organization of personnel</p>

Table 2: Coding of issues in the process of establishing a day care surgery

Preventing and Overcoming Resistance

The decision to establish the new DCS in a separate building outside the hospital with a new management structure was expected to have both negative and positive effects on employees. At the hospital, the surgeons were able to do other, unrelated work tasks in between the surgeries. It is hard to achieve a good workflow when all personnel had so many work task outside the operation theatre and no common ground to discuss the workflow. Some interviewees saw this as counterproductive:

‘Between surgeries, the physicians run around doing all sorts of work tasks. I am sure that it is very important and useful tasks they are doing. In the meantime, the rest of the surgical team is ready for the next surgery. We are ready to put the patient to sleep. Therefore, we call on the operators, and they do not answer or the calling system does not work, and then you get a delay. That is not good for anyone.... So the way I see it the question is: what is the most appropriate way to organize this? Having operators present so they can continuously operate,

operate and operate...or, should they run around doing everything else at the same time?’ (NUH anaesthesiologist)

However, others, both senior management and physicians expressed a different view, arguing that multitasking was important:

‘Unfortunately, we do not have enough specialists in all disciplines, which leads to physicians doing more than one task at a time. In a department located outside the hospital area, they cannot do that. At the hospital they can run in to the post or to the clinic and do work tasks in-between. Ideally, this is not the best way to organize it. However, it is better than cancelling or patients having to wait all day for a doctor...’ (NUH senior management team member)

The senior management set out to reduce the high resistance against moving out of the hospital area by bringing stakeholder representatives together in a project and a steering group in an early phase of the project. These groups undertook a long process of discussing and deciding on topics such as type of surgeries to be included in the DCS; which patients were best suited for day care operations; the finances; the goal setting; and the location of the new department. To involve already hard-pressed specialists was a time-consuming but necessary process in order to avoid the same fate as two previous attempts to establish a day care surgery, which both failed. With an increasing number of operations being possible to perform as day care surgery, most employees agreed that they literally had outgrown the existing hospital facilities, and that the physical surroundings limited their possibility to develop day care surgery as a field.

The need for a new location and more rooms, the high degree of participation from different stakeholders involved, and the choice of location of the new department (within walking distance to the hospital), were all contributing factors to reduce the original resistance to a move. In classical organizational change management terminology: the perceived costs of status quo now outweighed the perceived costs of change.

Focus on the interrelationship between humans and technology

Freedman (2013) noted that a socio-technical system comprises two separate but interdependent systems, i.e. the human beings who perform the work, and the technological system that is composed of the tools, techniques, and methods required to allow people to accomplish specific tasks. In an operating theatre with several medical and nursing specialties serving the same patient with high complexity in both work tasks and equipment, the interrelationship between the two systems is especially evident (Rydenfält, Larsson and Odenrick, 2017). To have an efficient workflow in a day care surgery, the physical surroundings play an essential role. Early on in the new DCS initiative, experienced day care surgery staff were asked to participate in drawing up the outlines of how they would like to develop the physical surroundings to support a seamless workflow. It was experienced day care surgical staff’s idea to create the department as a circle where patients move around in a

natural order from phase to phase. The experts were allowed to come up with their suggestions before the building of the new DCS:

'... the good thing in this project is the involvement of the staff. They have decided where all the lockers will be placed. All the doors. All the walls. Therefore, they are responsible for the choices they have made, and that is why they believe it is the right choices. Because these are competent people with extensive experience.' (NUH senior management team member)

Variety in work tasks and task distribution

One of the guiding principles of socio-technical approach, according to Emery (1978), is to seek for a redundancy of functions rather than redundancy of tasks. After one year in operation, the regular staff in the new DCS reported experiencing much higher levels of job tasks variety than expected. This development was due to the introduction of new patient groups not previously planned for, and a lower number of staff, with the implication of everyone having to step outside of their old professional roles and learn new work tasks. The goal in this action research project was to allow staff to participate in implementing the multidisciplinary DCS by giving them a high degree of competence and excellence in day care surgery as a field, and hence developing this as a specialty:

'All surgical nurses know what they are meant to do in the operating theatre. However, the day care surgery field involves much more than that. Day care surgery is all the pre-operative and post-operative competences seen under one.' (DCS nurse)

In order to ensure that DCS staff obtained pre- and postoperative work experience in support of competence transfer and development, all staff participated in an internship scheme. Before opening the DCS, there was a concern from different professions that working with day care surgery would provide too little variety in work tasks and therefore reduce competence development. In practice, DCS staff reported the opposite:

'My old colleagues at the hospital said that they thought it was going to be too boring for me in a day care surgery. Too little action, challenge and drama. However, in reality we have such a variation in patient groups, diagnoses and work tasks. In addition, we have a different responsibility here and have to trust in our own abilities that we can handle everything ourselves.' (DCS anaesthesia nurse)

The possibility to discuss work procedures and practice with colleges with a range of different specialties facilitated the improvement of multidisciplinary teams and knowledge transfer, as well as the possibility to utilize the knowledge in everyday work practice.

Shared goals

According to the socio-technical approach, the best work design for a productive system is one where each part of the system embodies the goals of the overall system (Emery, 1978). The DCS initiative had two main goals. The first goal was to develop an efficient patient-centered day care surgery department with an outstanding work environment for the employees:

'We have always had a vision in this project of creating a working environment characterized by inter-disciplinary teamwork and ownership ... that all employees should experience ownership for the department and responsibility for the DCS-department being as good as possible.' (NUH senior management team member)

The second goal was that the initiative had to specify efficiency in numbers of operations per year. Whilst the first goal was fairly straight forward and uncontroversial, this second goal was perceived to be more controversial, especially among the medical department managers delivering services to the DCS. However, it was a conscious choice from the NUH senior management team to have ambitious goals:

'We had an absolutely absurd start-up plan to be honest. It was a deliberate choice, because I wanted full pressure from day one, without any slack. The patient focus and the focus on no cancellations of planned operations... is one of the most valuable elements in the work culture at this hospital. For all of us it is a shame... it's a shame every time we have to cancel operations.' (NUH senior management team member)

At the project meetings senior managers of the different surgeon-groups constantly repeated that they did not have enough operators, or in some cases even patients to fill the numbers of operations and operation days set for DCS in the first year. There was no immediate solution to this disagreement which kept emerging in meetings and discussions. Not surprisingly, this theme evolved into a problem in the DCS start-up phase, and certain types of operations had to be rescheduled due to some departments not managing to fill their operation theatres.

The new DCS did not manage to reach the target of expected numbers of operations per year during the first year in operation. When it comes to efficiency of the new DCS the senior managers at the hospital insisted that a target of 4000 operations per year was achievable, even though staff in both the project and steering groups challenged this. This is not an unusual occurrence; senior managers often feel that they need to over-promise in order to justify investing in new facilities (Burnes, 2014).

Although it requires some time to establish a good workflow within any new department, the target set was perceived to be extremely ambitious, and even with full capacity in all five operation theatres from day one it was perceived as hard to reach. Furthermore, some medical fields were lacking operators, and staff reported from an early stage that they would not manage to deliver according to plan due to this. Finding the patient groups suitable for day

care operations also took some time, but after one full year in operation, all five operation theatres were now in use every day.

Decision-making ability and autonomy

Socio-technical theory was pioneering for its shift in emphasis towards considering teams or groups as the primary unit of analysis and not the individual. Sociotechnical theory pays particular attention to internal supervision and leadership at the level of the "group" and refers to it as 'responsible autonomy'. Staff must be provided with responsible autonomy to test new solutions. This is referred to as the principle of Minimal Critical Specification, which simply means that people should be told what to do, but not how to do it (Herbst, 1974). To follow this design principle is also in line with the action research principle of working with people and seeing them as experts, not simply studying them (Bradbury and Reason, 2003).

The NUH senior management team had a clear vision that DCS staff should be allowed to participate actively in shaping the task planning, workflow and work environment in the new department:

'What we gave them was the opportunity to create their own work place, work culture and work procedures. What we wanted in return was top quality. Best challenge you can give competent people if you ask me...' (NUH senior management team member)

This research involved a high degree of staff participation. They had three half-day seminars with different relevant themes with the aims to improve both work environment and work flow. In these seminars, all staff participated, and it was designed to work out practical solutions to perceived challenges. This could be anything from developing standardized patient procedures to better ways of organizing the storage room. Staff worked out suggestions on how to solve both large and small problems potentially occurring in the DCS. They undertook evaluations of how and where patient flow typically stopped up (e.g physicians forgetting to tell the rest of the staff that a patient is examined and ready for operation, and as a result they are waiting too long in the hallway instead of getting ready for operation) and set out to solve these problems. When they discovered barriers in the workflow, they were encouraged to find ways of removing these. Because of the relatively flat structure and small size of the department, it was easy to try out new solutions on an ongoing basis:

'I knew straight away that I've now got a completely different ownership to my new workplace. I am not just one of many pieces in a puzzle. Here I am allowed to be involved in the design of the work tasks and procedures. That has been a new experience for me, and it feels really good.' (DCS anaesthesia nurse)

As regards the positive outcomes in relation to task planning and work flow, DCS staff highlighted the ability to influence important decisions, democratic leadership-style, practical locations and the possibility to socializing with all staff regardless of their profession or

specialism, as important success factors in achieving the vision of a good working environment.

Several staff reported it was a new and welcomed experience not only to be encouraged and allowed to provide input to the organization of the department, but to observe that their input was actually used in new procedures.

Staff focused on the positive effect closer relationships between professions and specialists have on operational duties, and how these closer relationships could lead to more knowledge and competence transfer across disciplines:

'We cooperate so well under operations now, also with the physicians, we are smooth operators...Because we know each other, we know each other so well now that we are really like ... a team. It is completely different, the feeling of identity. It is good to feel such an identity to your work...' (DCS nurse)

The findings suggest that the NUH senior management team achieved part of their vision of creating more inter-disciplinary teams in the new DCS. Furthermore, they had only one lunchroom in the new DCS, at the hospital all the different professions have separate lunchrooms:

'I have worked as an anaesthesia nurse for almost thirty years up at the hospital, and I have never had lunch with surgeons or orthopedists before moving down here [to the new DCS]. I think it is nice that we can sit down with them and talk about everyday life stuff... Because we all eat together, not only the regular ones. We include the temporary staff as well, and share our lunch with them if they forget to bring their own food. I think most of them find it enjoyable and relaxing here.' (DCS anaesthesia nurse)

Staff were proud of their new department, and what they had achieved in a very short period of time:

'I must say that to be allowed to create your own work culture as we had the opportunity to do in this department, has been fantastic.' (DCS nurse)

The feedback from the patients after the first year was generally positive and the DCS had no serious incidents regarding patient safety. Some patients reported that they felt "a bit like they were parts on a conveyor belt", but most reported that they liked being able to go home as soon as possible after their operation.

The staff also reported being motivated by the positive patient responses:

'One of our patients woke up after operation and said this is the best private hospital I have ever been to!' (DCS nurse)

The feeling of ownership and belonging to the new DCS came with a price tag in the first opening months. DCS staff got the feeling of being ‘not the most popular stepchildren’ as soon as they came back to the hospital. Especially the anaesthesia nurses working regularly at the DCS had some negative experiences when they returned to the hospital to work:

‘I certainly felt that some of the anaesthesia staff up at the hospital let their anger with the establishment of the new DCS out on our patients. For example, once we had to move a patient out of the DCS and up to the hospital for medical reasons, and I came with her up there. One of the anaesthesia nurses in charge at the hospital refused to help start a necessary operation. Other times we have caught them hiding equipment (the suitcase of anaesthesia medication drugs) from us when we came up to work. Some of our people have been treated less than friendly up there. When you work in a hierarchical system like a hospital, it does not always bring out the best in people....’ (DCS nurse)

In order to create true multidisciplinary teams where all staff help to develop each other’s skills, the feeling of “being in the same boat”, was important:

‘I like to see the patients coming and know that we can follow them through the process. We can give them safety and competence. And at the end of the day we can see the color returning to their faces. That is my motivation.’ (DCS anaesthesia nurse)

Management and team structure

According to the socio-technical design, in order to enable responsible autonomy and self-regulation, it is important that management and supervision are close and internal in the operating team. NUH senior management had a vision of creating a new team and management structure at the DCS-department. They realized this was going to be difficult if the majority of staff were ‘just visiting’ and if the new DCS did not have one senior manager. It was clear from early on in the planning process that operators would not be part of the regular staff at the new department. Instead, the managers of the different hospital surgery departments would provide surgeons in a shift system:

‘Everyone agreed that if this new department was to succeed it was important to have regular staff feeling ownership of the results, and a local manager of the department. The problem was; no one wanted to report to this manager, they all wanted to keep their manager at the hospital.’ (NUH senior management team member)

When it came to task planning and task distribution, study informants reported the high degree of temporary (shifting) staff as challenging:

‘The DCS-department must have a seamless workflow to be efficient, the more people you are depending on contributing, the harder it is to achieve this goal. If you get new people

constantly that do not know the standard routines or where things are put on top of tough deadlines to reach the goals, I think shifting staff will be a challenge’.
(DCS anaesthesiologist)

The goal of having as many regular staff as possible reporting to a local senior manager, and thereby creating a focused and stable work force with stronger teams was only partly met the first year in operation:

‘The challenge with health organizations is the discipline based silo organization, where the patient flow needs to cross those borders to be efficient. So many people might think that we did not manage to solve this issue in the new DCS given the fact that many of the staff are still being provided by the individual hospital departments. However, in reality we have come very far in a new way of organizing our services in this department, because we have managed to create a department that includes all professions, except physicians.’ (NUH senior management team member)

The establishment of the new DCS challenged the typical hospital organization because different professions from different departments were required to cooperate under one new ‘umbrella’. Hence, a new management structure had to be established.

The operating theatre is a dynamic, high-pressured environment, with different specialists working together to ensure a successful outcome for the patients. This complex system relies on the performance of the individual team members, and is vulnerable to errors and adverse events (Undre, Sevdalis, Healey and Darzi, 2007). To challenge the hierarchies and professional silos, and have a work environment where all staff work towards delivering together, working in teams where people know each other, is important. This is very much in line with the socio-technical approach to work with the group as a system to make improvements, not with individual workers (Herbst, 1974).

Conclusions

The research provided mixed results: whilst managers and staff were satisfied with the autonomy determining the physical surroundings, work tasks, work flow and work environment in the new DCS, how to manage temporary (on loan) versus regular staff and the ability to set their own operation goals and program stayed an unresolved issue. As regards the positive outcomes in relation to task planning, workflow, DCS staff highlighted the ability to influence important decisions, democratic leadership-style, practical locations and the possibility of socializing with all staff regardless of their profession or specialism, as an important success factor in achieving the vision of a good work environment.

The socio-technical approach stresses that an effective and efficient work place requires an optimal interrelationship between humans and technology; it requires that all staff have task variety, decision-making ability and autonomy; it stresses the importance of shared goals, and

a management structure that supports all of these. Crucial to achieving this is the ability of all employees to participate in the design of the new system. An action research approach includes those who are being studied as ‘co-researchers’, and views social research as an interactive rather than as an observational process. It also requires a senior management who is committed to creating and supporting this philosophy of working. One of the main criticism of hospital changes based on NPM reforms is the lack of influence and participation from clinical and first-line personnel in the change processes (Slagstad, 2017).

According to our findings, the socio-technical approach still proved useful in organizational design and changes in a modern day hospital setting. This is interesting, since the insights from the socio-technical perspective are highly forgotten in contemporary change theory and practice. Contemporary theories and approaches to change management currently available to academics and practitioners are often contradictory, lacking empirical evidence and supported by unchallenged abstract hypotheses concerning the nature of organizational change management (By, 2005). In classical organizational theory such as the socio-technical approach, the nature of the management task and the appropriateness of the management methods used, can be defined only in relationship to the particular purposes or ‘core tasks’ of the organization to be managed (du Guy and Vikkelsøy, 2012). Therefore; detailed, concrete, practical description of the organization and its core processes are needed before implementing new designs and changes.

There is a tendency in contemporary organizational analysis to treat ‘change’ as ‘an existential absolute, a generalized epochal condition and concomitantly in a highly abstract matter’... leading to ‘some unfortunate consequences, not least for the empirical grounding and relevance of organizational theory as a practical science of organizing’ (du Guy and Vikkelsøy, 2012, p. 140). In this article, we describe an action research process where the goal was to take back and stress the importance of a lost ‘specificity’ when it comes to analyzing and following change processes, and bring back some golden principles from the socio-technical approach, including a pragmatic, empirical stance, seeing the staff as experts and frontline implementers of the change processes.

The willingness to focus on democratic processes and getting the staff in the new DCS involved in the planning, describing, developing and running of the new service, appears to be one of the main reasons why the hospital management finally succeeded in establishing the DCS after a number of failed attempts in the past. Starting a change project involving time-consuming use of already hard-pressed clinical employees will have a price tag, since there is always a risk that clinicians use time on unsuccessful organizational development processes they instead could have been spending on patients. It is therefore important to document the long-term effects of involving the employees with first-hand knowledge from different organizational layers.

Our findings suggest that the possibility to discuss work tasks, procedures and practice with colleges from a range of different specialities facilitated the improvement of inter-professional knowledge transfer, as well as the possibility to utilize the knowledge in

everyday work practice. Staff at the DCS reported on new ways of working together as a team, even comparing themselves to a “well-oiled machine” with a higher degree of competence transfer in this new organization. However, the vision of building down the professional silos and create permanent inter-professional teams, with both physicians and parts of the anaesthesia staff still being ‘on loan’ from the main hospital, was only partly achieved. They tended to see themselves as being part of the mother departments at the hospital rather than part of the DCS. Neither of these developments are unusual or unexpected. They are common challenges for matrix structures, which to an extent is what the new DSC is. Many organizations have experienced and overcome such issues, but it does take time (Eppinger and Browning, 2012).

This study of the establishment of the new DCS shows that it is possible to develop a cooperative, democratic and multidisciplinary work environment that optimizes human needs and abilities with the potential of the technology of work to produce a system that meets the needs of staff and patients. However, it does not happen by accident or mere goodwill. It requires an approach to change that recognizes the need to optimize the social and technical systems of the workplace. It also needs an approach that involves all staff from relevant professions in the design process, managers and non-managers alike. However, as the DCS study has shown, not everything will be perfect from the word *go*. Organization design and operation are on-going processes, which staff need to keep working with. Seen in that light, the DCS has made remarkable progress.

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Institutional stress and the mediating role of autonomy, competence development and social support related to job performance: a study among hospital employees

Gunhild Bjaalid

University of Stavanger

Espen Olsen

University of Stavanger

Kjersti Melberg

IRIS

Aslaug Mikkelsen

University of Stavanger

Stavanger University Hospital

Abstract

Purpose- The purpose of this study was to explore how disagreement with the organization's policy and priorities, labelled as institutional stress, influences job performance, and to investigate the mediating roles of autonomy, competence and social support.

Design/methodology/approach A self-completion survey was distributed to four public hospitals in a Norwegian health region with the response rate of 40% (N=9162). Two target groups were defined, and subsequently, structural equation modelling was conducted on two groups hospital of workers with (N=795) and without (N=8367) leadership responsibilities.

Findings Institutional stress had a direct negative influence on job performance on hospital employees without leadership responsibilities. Additionally, the findings indicated that institutional stress is negatively related to job resources measured by competence development, autonomy and social support. Autonomy, competence development and social support were positively related to job performance, as expected. Further, institutional stress was not directly related to job performance among leaders, and social support from leaders was not significantly related to job performance in both target groups.

Originality/value Modern organizations are often characterized with disagreement and conflicts between managers and professional employees. In this article, stress related to the organization's policy, lack of influence on goals and important organizational decisions, is labelled institutional stress. The findings in the current study suggest that institutional stress has several negative effects on hospital workers' work motivation and job performance. Further research should explore different possibilities for organizations and leaders to manage institutional stress.

Keywords Institutional Stress, Job Resources, Job Demands, Work Motivation, Job Performance, Hospital Organization

Paper type Research paper

Introduction

Modern health care is increasingly complex. Pressure on the economy, digitalization and progress in medical equipment and treatment drive hospitals into large change processes. The governments are asking for a seamless patient-centered health care, improved quality and safety, uninterrupted patient flow, and reduced variation in services and cost control. Hospital management has to translate these goals into decisions on organizational structure, technology and work processes. Research in health care sector development suggests that changes need to come not only from advances in medicine, but also from research on how health services are managed, organized and delivered (Fulop, Allen, Clarke and Black, 2003; Lega, 2016). Professionals in the health services can be a contribution or a hindrance to change visions depending on if they find them meaningful and important or not (Reff Pedersen, 2015). Policy makers promote effective leadership and organizational development as a way of improving the performance of hospitals (Currie and Lockett, 2011). Therefore, there are many formal and informal stakeholders involved in health care change and development processes of public hospitals.

All health service professionals do not agree on the managerial or political decisions taken, and do not perceive some of the outcomes as desirable. A move towards a more business-like health care field has challenged the medical autonomy of hospital employees (Reay and Hinings, 2006; 2008). What can be observed as a result is increased managerial control, accountability, efficient use of resources, quantification of patient throughput, cost reduction, performance management, standardization of care, and focus on quality and customer orientation- and satisfaction (Scott, 2000; Doolin, 2002; Reay & Hinings, 2009; Kristiansen, Obstfelder & Lotherington, 2015).

INSTITUTIONAL STRESS AND JOB PERFORMANCE

Organizational changes going against the core goals and values of professional groups in the health sector can lead to disagreement, distrust and disengagement among employees (Spurgeon, Barwell and Mazelan, 2008). Mergers, standardizations and change processes might all potentially be experienced as physical, environmental or psychological stressors and lead to strain among the employees. Disagreement on the strategy, policy, values and management practice of the hospital can lead to stress, labelled institutional stress in this article. The Job Demand-Resource model (Demerouti et al., 2001) is used as a theoretical framework in explaining the antecedents and preventing factors of job performance in organizations. The aims of this study are to investigate how institutional stress, defined as a job demand, and autonomy, competence development and social support defined as job resources, influence job performance among hospital employees. We will explore whether perceptions of institutional stress in a hospital region in Norway have direct or indirect influence on perceived job performance and whether autonomy, competence, and social support mediate the relationship between institutional stress and job performance. Leaders and employees may perceive the same working situations and challenges differently according to the information available to them, their previous experiences, and their positions in the organization. Since different stakeholders can experience the work situation in different ways, we will investigate if our main theoretical model holds for a subsample of leaders and subsample of employees without a leadership role.

Literature review and hypothesis development

Since its appearance, the JD-R model has made an important contribution to research within job demands and job resources at work, and is now recognized as one of the leading models within this field (Schaufeli and Taris, 2014). The JD-R model acknowledges that every occupation has its own risk and buffer factors, and that these work characteristics can

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be categorized into job demands and job resources. In contrast to the traditional job characteristics models (e.g. Hackman and Oldmans, 1976) the JD-R model does not limit itself to a specific number or definitions of job demands or job resources; instead, it acknowledges that any job demand can affect strain on employees' health, engagement and work motivation and that different jobs or occupations can have their own unique demands and resource patterns (Schaufeli and Taris, 2014). The definitions of both job demands and job resources must therefore be quite broad. Job demands are more specific 'those physical, psychological, social or organizational aspects of the job associated with physiological or psychological costs' (Schaufeli and Bakker, 2004, p 296). Examples of job demands can be a high work load, poor work environment, conflicting demands, emotional strain by being close to patients and families or low decision latitude on organizational goals.

Job resources are defined as the physical, psychological, social or organizational aspects of the job that are functional in achieving work goals and reducing job demands and the associated physiological and psychological costs, on top of stimulating personal growth and development. Examples of job resources in a health care work setting can be a high degree of job clarity combined with meaningful and significant work tasks, and a positive work environment with social support from colleagues.

In this article, stress related to disagreement with the organization's policy, too low or little influence on goals and important organizational decisions, and to having values that conflict with those of the organization, is labelled institutional stress. Institutional stress includes disagreement with the organization's policy and the perception that the organization is using the wrong parameters to measure the quality of the employees' work (Cooper, 1981). A constant stressor in a work situation which is due to something an employee perceives as being a hindrance or a negative job experience (Cavanaugh, Boswell, Roehling and Bordeau, 2000) is perceived as being unhealthy over longer periods of time, possible leading to a range

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of negative individual and organizational outcomes (Lazarus and Folkman, 1984; Stamper and Johlke, 2003; LePine et al., 2005). The general response to stress stimuli is 'a non-specific alarm response, eliciting a general increase in wakefulness and brain arousal, and specific responses to deal with the response for the alarm' (Ursin and Eriksen, 2004, p. 571).

The unpleasantness of the alarm is no health threat, but if sustained, the response may lead to illness and disease (Eriksen, Murison, Pensgaard and Ursin, 2005). The real concern is sustained arousal occurring when there is no solution to the problem (Eriksen et al, 2005). The amount of experienced work stress will most likely be a result of a range of interactions of numerous factors. If employees stand in a work situation with prolonged demands and lack of resources, can according to the JD-R model a reduction of work motivation and withdrawal from work be an important self-protection strategy that may prevent future frustration of not obtaining work related goals (Bakker et al., 2004).

Disagreement with the organization's strategy, management practices and decision priorities, may be relative permanent characteristics of how the health professionals perceive their job situation, and therefore a burden they have to cope with over long periods of time, while doing their core work tasks. The health professionals can work through their managers and unions to try to change goals and priorities of the organization, but this is usually long-term processes. Organizational identity is formed by top management's establishment of the core values and beliefs that guide and drive the organization's behaviour (Voss, Cable and Voss, 2006). Discussions of problematic aspects of value intermixing often relate to the debate of the entrance of market values in public sector, and the difference between organizational values in public and private sector (Jørgensen and Bozeman, 2007; Van Der Wal, Graaf and Lasthuizen, 2008). Part of what we label as institutional stress involves having conflicting values with the organization's core values, and the expected negative influences this state might have on motivational variables and job performance.

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Job performance can be seen as an activity in which an individual is able to accomplish the work tasks assigned to him or her successfully, subject to the normal constraint of the reasonable utilization of available resources (Jamal, 1984). Most jobs comprise a range of core activities. In the hospital setting, typical core activities are patient treatment and care. Some hospital employees are responsible for patient treatment, some are responsible for patient care, others have leadership or management responsibilities, while still others have administrative, technical, or practical responsibilities. The types of position, profession, responsibility, and hierarchical location in the organization may influence how, and if, institutional stress affects work motivation and job performance.

We hypothesize that institutional stress will reduce job performance through reducing work motivation. When employees experience institutional stress, they have to use mental effort to cope with the situation, utilizing resources that could have been devoted to effective job performance (Hobfoll, 2011).

Hypothesis 1: Institutional stress is negatively related to job performance.

Autonomy, competence development and social support are described as important for a range of outcome factors such as job engagement, job satisfaction, organizational commitment, job performance, intentions to quit, as well as general health outcomes (e.g. Humphrey, Nahrgang and Morgeson, 2007; Van der Doef and Maes, 2010; Hausser, Mojzisch, Niesel and Schulz-Hardt, 2010; Crawford, LePine and Rich, 2010). Autonomy is seen as one of the most important resources (Robinson, 2008), and work characteristics which perceive work design that grants the employees work autonomy as a fundamental aspect of employees' well-being (Hackman and Oldman, 1976; Karasek and Theorell, 1990). In this study we expected autonomy related to work methods and decision-making to be negatively related to institutional stress and mediate the negative influence of institutional stress on job

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performance. That is because this type of autonomy allows the employees opportunity to influence how they perform their work task and it also allows influence over other important goals regarding their department or organization. If employees have autonomy in the decision-making process leading to goal completion, they will have higher level of experienced meaning and positive work outcomes (Locke and Latham, 1990; Humphrey, Nahrgang and Moregeson, 2007; Latham; 2008).

Social support from co-workers has been framed as social characteristics at work, a motivational variable and a psychological need (Karasek et al., 1998; Ryan and Deci, 2000; Grant, 2007; Humphrey et al., 2007). Social support refers to the desire of an individual to experience a sense of social connectedness or to be valued or appreciated by other individuals. Researchers have noted that social relationship among employees is one of the most important determinants of well-being and perception of meaningful work (Gersick, Bartunek and Dutton, 2000, Wrzesniewski, Dutton and Debebe, 2003; Humphrey et al., 2007). The social characteristics at work were expected to reduce job stress and buffer the employees against negative job demands (Karasek et al., 1998). In this study, we expected that social support from colleagues would mediate the negative influence from institutional stress on job performance.

According to Amabile et al. (2004), leader support behavior includes both task and relations support. Leaders' task support involves ensuring the adequacy of the essential resources employees need for efficient job execution, whereas relations' support focuses on a leader's concern with the socio-emotional needs of his or her employees (Cheung and Wong, 2011). In various degrees, most leadership theories include the importance of leaders being able to meet their employees' social needs, therefore, we expected leadership support to be a job resource mediating the negative influence between institutional stress and job performance.

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The need for *competence development* refers to the desire to be able to complete one's job tasks effectively and to interact with an environment that supports the expression of one's abilities. Several motivational characteristics are primarily concerned with the knowledge demands at work such as information processing, job and task complexity, specialization and problem solving (Humphrey et al., 2007). A meta-analytically analysis indicated that increase of knowledge requirements makes the work more intrinsically motivating and promotes positive outcomes (Humphrey, et al., 2007).

High levels of autonomy, competence development and social support could mean better capabilities to influence the work situation, leading to higher outcome expectancy and reduced negative effects of institutional stress. On the contrary, low levels of autonomy, competence development and social support could mean negative outcome expectancy and a feeling of disengagement and negative outcomes (Schaufeli and Bakker, 2004). According to the JD-R model job demands will normally be negatively related to resources. Building on earlier studies institutional stress is in this study seen as a job demand, and we are suggesting that autonomy, competence development and social support are expected to represent job resources (e.g. Humphrey et al., 2007; Crawford, LePine and Rich, 2010; Hausser, Mojzisch, Niesel and Schulz-Hardt; 2010; Van der Doef and Maes, 2010). For example if physicians in the hospital sector experience that top management does not see the value of their work, or they feel they have to perform work tasks that are not according to their own ethical or professional standard, this will normally prelude the mobilization of job resources (Bakker et al., 2003). When workers become exhausted under prolonged influence of environmental demands, they will, according to the JD-R model, not be able to perform well because their energetic resources will be diminished. Therefore, our model postulates that institutional stress will be negatively related to autonomy, competence development and social support,

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and these resources (autonomy, competence development and social support) will mediate the effect institutional stress will have on job performance.

Different employees can experience the work design and situation in different ways. Health care leaders may be in a work situation where they experience higher levels of influence over organizational goals, and thereby more decision-making autonomy than employees without leadership roles. They may also have more opportunity to use and develop their competence in the work situation, but being in a leader role could diminish the level of social support from co-workers. According to Rodman and Bell (2002) health care leaders may operate within a culture of acceptance and expectation of work stress. It is important to gain a deeper understanding of the leadership conditions that may support or hinder leaders' opportunities to influence and improve their own and their subordinates' psychosocial work environment (Skagert et al., 2008). Therefore, the aim of this study was to investigate whether our main theoretical model (see Figure 1) holds for both leaders and employees without managerial responsibility.

Hypothesis 2: *Institutional stress is negatively related to a) autonomy, b) competence development, c) social support of colleagues, and d) social support of leaders.*

Hypotheses 3: *Higher degrees of a) autonomy, b) competence development, c) social support of colleagues, and d) social support from leader at work, are positively related to job performance and will mediate the relationship between perceived institutional stress and job performance.*

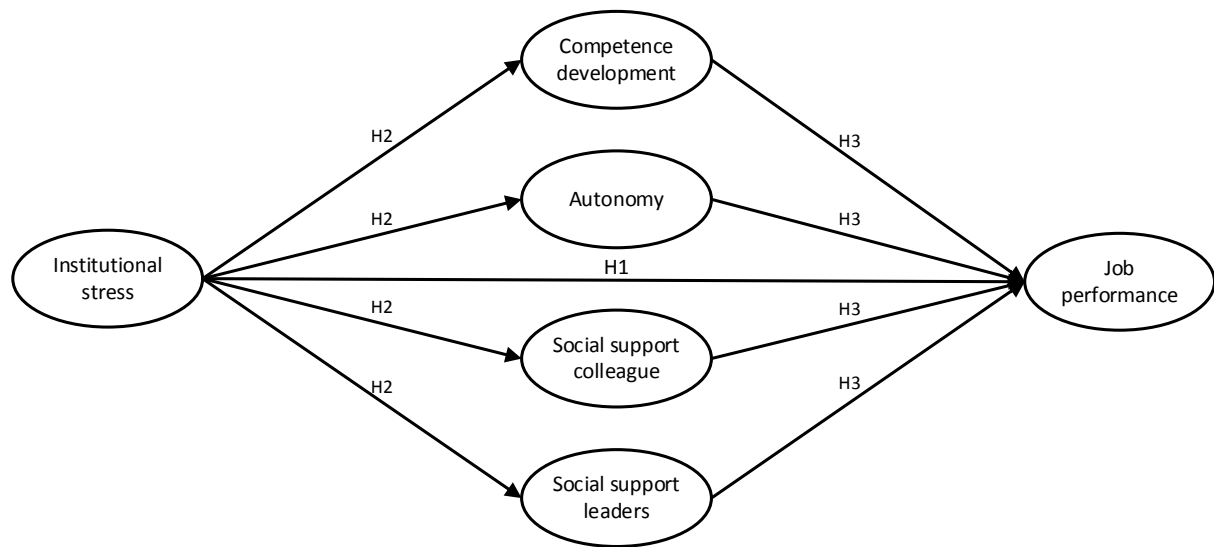


Figure 1: Hypothetical model describing relationships between latent variables

Method

The hospital context

The present research was conducted in four public hospitals located on the west coast of Norway in October 2014. The Western Norway regional health authority is one of the four hospital regions in Norway. This hospital region is responsible for four main health enterprises, which are legal entities under the regional authority. Each health enterprise includes a central hospital and in addition some local hospitals, outpatient clinics, a pharmacy unit and an incorporated unit responsible for the development and operation of ICT with regional responsibilities.

Research design, survey and participants

The data used in this study was collected using a survey sent to all employees in the regional health authority region. The survey included a range of validated questionnaires on

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themes relevant for a work environment survey. In total, 22883 employees received the questionnaire, and the overall response rate was 40% (n=9162). Of this, 795 (8.7 %) worked as leaders, managers, or supervisors and 8,367 (91.3 %) had no leadership responsibilities. In terms of employment, 556 of respondents were physicians, 2946 were nurses or midwives, and 222 were psychologists. All types of employees (e.g., administrative, paramedics, pharmacy staff) of the regional health authority were included in the current study.

Measures

Institutional stress

Five items from Cooper's Job Stress Questionnaire (CJSQ) were used to measure institutional stress (Cooper, 1981). Items on the scale assess institutional stress related to the organization's policy, lack of power and influence, values that conflict with those of the organization, leaders not understanding the challenges related to the work situation, and the organization using the wrong parameters to measure the quality of work. Items were measured on a 6-point scale ranging from not relevant or no stress to much or always stress. Cronbach's alpha for the total sample = .86.

Job performance

Four items from QPS Nordic were used to measure job performance (Lindstrøm et al., 1997, 2000). This scale includes employees' self-assessment of their job performance. Topics include the quantity and quality of work performance, the ability to solve problems at work, and the satisfaction with own capacity to develop and maintain good work relationships with colleagues. Items were measured on a five-point scale ranging from never/seldom to always/very often. Cronbach's alpha for the total sample = .79.

Autonomy

Autonomy was measured using the autonomy scale from the *Organization Assessment Survey* (Dye, 1996). The autonomy/participation variable is measured by four questions about the possibility to influence important work variables such as decision-making and how work tasks are performed. Items were measured on a five-point scale ranging from *to a very small extent* to a *great extent*. Cronbach's alpha for the total sample = .92.

Competence development

Four items from the COPSOQ-instrument were used to measure competence development (Kristensen, 2000). Items assess topics related to opportunity to learn, adapt, and use the skills and expertise related to work. Items were measured on a 5-point scale ranging from strongly disagree to strongly agree. Cronbach's alpha for the total sample = .79.

Social support from colleagues

Three items were used to measure social support from colleagues (Van der Heijden, 1998). This scale includes items related to social support, such as "*Are your colleagues able to appreciate the value of your work and see the results of it?*" measured on a 5-point scale ranging from not at all to very much. Cronbach's alpha for the total sample = .75.

The social support from immediate supervisor

Three items were used to measure social support from leaders (Van der Heijden, 1998). It was the same questions as social support from colleagues with "colleagues" changed to "immediate supervisor". Cronbach's alpha for the total sample = .85.

Statistical approach

General statistics were analysed using SPSS version 21. Confirmatory factor analysis (CFA) and structural equation modelling were conducted using AMOS 21 (Arbuckle, 2012).

The following indicators were assessed in AMOS to evaluate the model fit; Root Mean Square Error of Approximation (RMSEA), Goodness-of-Fit Index (GFI), Normed Fit Index (NFI), Incremental fit index (IFI), and Comparative Fit Index (CFI). Thresholds equal to or greater than 0.90 were defined as the acceptable fit criteria, with the exception of RMSEA for which the criterion was set to less than 0.8 (Hair et al., 2006). Chi square is sensitive to sample size and was therefore not used as a criterion (Schumacker and Lomax, 2004).

There was no need to replace the missing data before using AMOS, as the data was complete. Composite scale scores for all dimensions were created by obtaining the mean of the responses to the items in the dimension. The composite scores ranged from 1 (never) to 5 (very often) for the two social support dimensions used. The institutional stress dimension score ranged from 1 (not relevant or not stress) to 6 (a lot of or always stress). Psychological need dimensions ranged from 1 (very seldom/never) to 5 (very often/always). Job performance ranged from 1 (very seldom/never) to 5 (very often/always).

Cronbach's alpha was estimated to determine whether factor scales had acceptable alpha coefficients and internal consistency. Pearson's r was computed to examine the discriminant and convergent validities among measures.

Individual level of data-analyses was used. This choice was based on a combination of the theoretical model and because only four organizations were included in the study. The variables included in the study are substantive variables corresponding well with the use of individual perceptions of institutional stress, resources and job performance. Hence, the

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individual-level of analysis was considered adequate to assess the validity of the theoretical model.

The study aimed to develop a new dimension, *institutional stress*. Exploratory factor analysis (EFA) using Principal Factor Analysis was therefore conducted on stress items (Cooper, 1981). An additional EFA was conducted to ensure discriminant validity between the newly developed institutional stress dimensions and the psychological need dimensions. CFA was then conducted to validate the measurements' concepts.

Assuming that employees and leaders have different work task and role expectations, the sample and structural relations assessments were divided between these two target groups. This approach considers the possibility that paths between dimensions might differ between leaders and other personnel. This procedure will also potentially function as a test of cross-validation of the findings.

An exploratory approach has been recommended when developing structural models using SEM (Zhao et al., 2010). Since analytical techniques to test mediators are still evolving (Shrout and Bolger, 2002), a stepwise approach was therefore used to develop final structural models. Model modifications were based on the general impression of model fit and non-significant beta coefficients were used as the basis for removing hypothetical links. Additional adjustments were made based on modification indices.

Results

Exploratory factor analysis.

Principal factor analysis with Varimax rotation was conducted to validate items measuring institutional stress using Cooper's Job Stress Questionnaire (Cooper, 1981). Factor analyses revealed six factors, where the first factor included five items measuring institutional stress. The factorial loadings on these five items were satisfactory ranging from 0.72 – 0.83. The results generally indicated few problems related to cross-loadings. The first dimensional factor was therefore considered adequate to use as an Institutional stress dimension in the current study. According to the aim of the study, the remaining factors and items from the Cooper's Job Stress Questionnaire were excluded from the remaining analyses.

Correlations.

Pearson's r was estimated to examine the discriminant validity of the measures. As the associations between measures could be expected to vary between the two subsamples, the correlations were analysed separately for leaders and other employees (Tables 1).

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	Pearson correlations					
	1	2	3	4	5	6
1. Institutional stress	-	-.15	-.35	-.10	-.34	-.19
2. Competence	-.16	-	.30	.24	.27	.25
3. Autonomy	-.46	.31	-	.26	.39	.28
4. Social support from colleagues	-.05	.30	.28	-	.37	.28
5. Social support from leaders	-.31	.28	.52	.47	-	.15
6. Job performance	-.16	.17	.19	.25	.21	-

All correlations are significant at the $p < .01$ level.

Table 1 shows the statistically significant correlations among all latent variables for leaders and other personnel separately. Correlations for both sub-samples are satisfactory, indicating acceptable levels of discriminant validity. Except for the correlations with institutional stress, associations among the concepts were positive

Descriptive statistics and internal consistency

Table 2 includes means and standard deviations for the different latent variables. Institutional stress has a substantially lower mean compared to other measures. Generally, standard deviations indicate satisfactory levels of statistical variance. Cronbach's alphas ranged from 0.72 to 0.92, indicating high reliability.

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Variable	Total sample (N=9162)				Leaders (N=795)			Other employees (N=8367)		
	Range	Mean	SD.	Alpha	Mean	SD	Alpha	Mean	SD	Alpha
1. Institutional stress	1-6	1.76	0.98	0.86	1.94	0.98	0.80	1.75	0.97	0.86
2. Competence	1-5	3.29	0.84	0.79	3.66	0.73	0.76	3.26	0.84	0.78
3. Autonomy	1-5	4.37	0.62	0.92	4.69	0.44	0.88	4.34	0.62	0.92
4. Social support from colleagues	1-5	3.42	0.72	0.75	3.43	0.68	0.72	3.42	0.73	0.76
5. Social support from leaders	1-5	3.21	0.92	0.85	3.53	0.91	0.87	3.18	0.92	0.85
6. Job performance	1-5	4.10	0.49	0.79	4.05	0.44	0.75	4.10	0.50	0.79

Table 2: Descriptive statistics and Cronbach's alpha.

Confirmatory factor analysis.

Confirmatory factor analysis (CFA) with the use of Maximum Likelihood Extraction indicated that the measurement concepts fitted the data for the total sample well (see Table 3).

The results indicate that the structural model can be tested using the measurement concepts.

	χ^2	d.f.	P	RMSEA	GFI	NFI	IFI	CFI
M1. Measurement model (CFA) – total sample	9253,253	215	.001	.068	.914	.912	.914	.914
M2. Initial structural model – employees (no leaders)	14488,206	442	.001	.059	.866	.862	.866	.866
M3. Initial structural model – leaders	1306,920	221	.001	.079	.863	.839	.862	.862
M4. Modified model 1– employees (no leaders)	7311,679	326	.001	.048	.919	.913	.917	.917
M5. First modified model – leaders	842,996	164	.001	.072	.897	.867	.890	.890
M6. Modified model 2 – leaders	750,680	163	.001	.067	.909	.882	.905	.905

Note. χ^2 = chi-square; d.f. = degrees of freedom; RMSEA = root mean square error of approximation; GFI = goodness-of-fit index; NNFI = non-normed fit index; IFI = incremental fit index; CFI = comparative fit index.

Table 3: Goodness of fit indices of the measurement and the alternative structural models.

Model fit of the structural model

The initial model tested with employees without leaders did not fit the data (see M2, Table 3). Modification indices suggested that the measurement problems were related to the Leadership support variable. Based on this the Leadership support variable was removed before retesting the model (see M4, Table 3). After this adjustment, the results suggested that the model fitted the data. This model (M4) was therefore considered adequate to use as a final model when considering the employee sample without leaders. Figure 3 illustrates structural relations between variables. As expected, institutional stress was negatively related to autonomy, competence development and social support from colleagues. The negative influence of institutional stress on autonomy was the largest (- 0.51).

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Among leaders, two of the links in the initial structural model (see M3, Table 3) were not significant, specifically the effect of institutional stress on job performance and the effect of leader support on job performance. These two paths were therefore removed before testing the modified structural model using the sample of leaders (see M5, Table 3). After this modification (M5), the assessment indicated that the model was close to adequate; however, the results were generally not within acceptable fit criteria. Modification indices suggested the model could be improved by accepting covariance between two items, ‘*In my department, we work together to influence the standards that constitute good work*’ and ‘*All employees in my department are involved in important decisions that affect them*’. Based on this modification, the final estimate (see M6, Table 3) was considered acceptable for the sample of leaders.

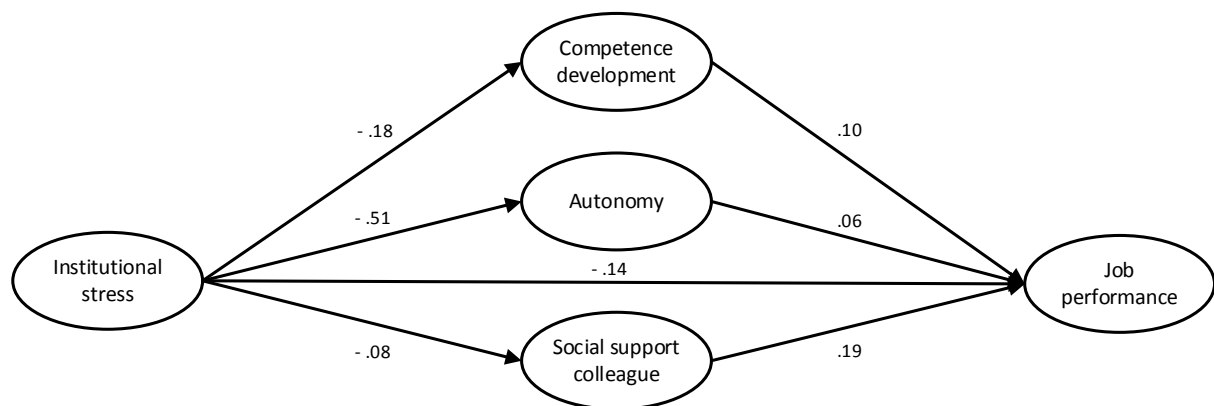


Figure 2: Maximum likelihood estimates for the final model assessed on employees. *Note:* $N = 8367$. All paths are significant at the $p < .001$ level.

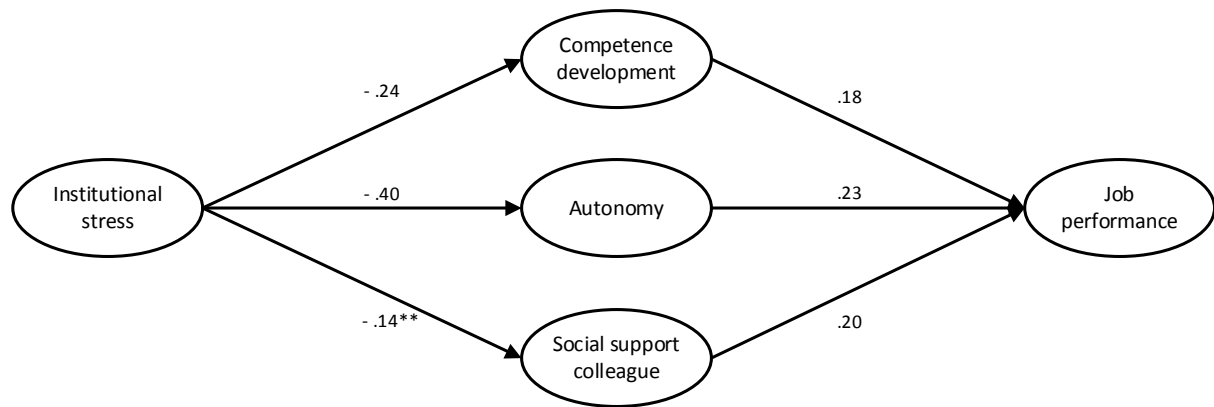


Figure 3: Maximum likelihood estimates for the final model assessed on leaders. *Note:* $N = 795$. All paths are significant at the $p < .001$ level with one exception: $** < .01$

The final models among employees and leaders are illustrated in Figure 3 and 4. Hypotheses 1 is supported among employees because institutional stress is significantly related to job performance ($b = -0.14$; $P < .001$), but hypotheses 1 was not significantly supported among leaders.

Hypotheses 2 expected institutional stress to be negatively related to autonomy, competence development and social support. Among employees institutional stress was negatively and significantly related with competence development ($b = -0.18$; $P < .001$), autonomy ($b = -0.51$; $P < .001$), and social support from colleagues ($b = -0.08$; $P < .001$), but institutional stress was not significantly related to social support from leaders. The findings were very similarly related to hypotheses 2 among leaders; institutional stress was negatively and significantly related with competence development ($b = -0.24$; $P < .001$), autonomy ($b = -0.40$; $P < .001$), and social support from colleagues ($b = -0.14$; $P < .01$). Altogether, the results support hypotheses 2 with the exception of influence from institutional

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stress on social support from leaders, which was neither significant among leaders or among employees.

The final model estimations support hypotheses 3, expecting job resources represented by autonomy, competence development and social support to be positively related to job performance; competence development ($b = 0.10$; $P < .001$), autonomy ($b = 0.06$; $P < .001$) and social support from colleagues ($b = -0.14$; $P < .001$) increase the levels of job performance among employees. Further, competence development ($b = 0.18$; $P < .001$), autonomy ($b = 0.23$; $P < .001$) and social support from colleagues ($b = 0.20$; $P < .001$) increase the levels of job performance among leaders. Since social support from leader was removed from the model, the influence this dimension had on job performance was not estimated.

Discussion, limitations and future research

The first hypothesis in this article postulated that institutional stress would be negatively related to job performance. Among employees the direct link between institutional stress and job performance was significant. The direct path between institutional stress and job performance was not significant among leaders. When comparing leaders and employees, the remaining results are relatively consistent in terms of the direction of paths. Therefore, the results presented herein provide support for our first hypothesis, but only for the group of employees without leadership responsibility.

Previous research has shown that employees who report high value conflicts at work also experience more stress (Bouckenoghe et al., 2010). In the hospital setting, disagreement related to management decisions regarding work hours, work structure and goals related to patient groups and treatment can over time lead to the development of divergent work values in different professional groups. These types of prolonged value conflicts will, according to

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the JD-R model, draw on employees' resource reservoir and may lead to reduced work engagement. Institutional stress in the current study concerns having work values that conflict those of the organization. These value conflicts might explain why our results suggest that institutional stress affects the employee group differently compared to the leader group.

There are several possible explanations for the non-significant direct effect of institutional stress on job performance among leaders. It might stem from the leaders' position in the organization with the possibility to influence organizational strategies, priorities and decisions more effectively than employees without leadership roles. Leaders are responsible for choosing strategies, doing priorities and having control with the economy to deliver expected outcomes. To do this they may have more day to day information about the owner's expectancies and the development in the society. So, a leader position may involve more autonomy, authority and means to influence organizational processes than the employees may. Compared to the employees the leaders may therefore have more positive outcome expectancy. Employees may lack the necessary influence on decisions and have negative outcome expectancy to organizational political processes. This might be a reason why institutional stress had a direct effect on job performance in the employee group and not in the leader group.

From the second hypothesis in this study, it was expected that institutional stress had a negative influence on autonomy, competence development and social support from colleagues (psychological resources). The results showed that institutional stress was strongly negatively related to autonomy in both subgroups (beta in employee group = -0.51 ; beta in leader group = -0.40). Among employees, the negative influence of institutional stress on autonomy was the strongest. The JDR-model (Demerouti et al., 2000, 2001; Bakker et al., 2004) focuses on the social environment at work, suggesting that different types of organizational structures and leadership styles will influence employees' work motivation through job demands and job

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resources. A leader that positively influences the autonomy of employees will pay attention to employees' perspectives, will focus on giving them the relevant information they need to perform their job tasks successfully, and offer them possibilities to make choices and allow them to participate in important decisions (Fernet and Austin, 2015).

On the other hand, organizational structures and leaders focusing on excessive use of control, can exercise power over employees, focus on details, threaten them with negative consequences, make them feel guilty, and constantly criticize them for their efforts. Such behaviour is more likely to generate stress reactions and strain among employees by increasing job demands, and reducing work motivation and engagement.

A work environment where employees experience a high degree of social support, and the ability to use and develop their competence, is seen as an important job resource in most job design theories (Karasek and Theorell, 1990; Deci and Ryan, 2000; Demerouti, et al., 2001). In this study, we used two different subscales to measure social support in the work situation. One subscale measures social support from colleagues, while the other one measures social support from immediate supervisor (leader). It seems reasonable to assume that employees who feel incompetent at work or feel rejected by co-workers or leaders, would have more trouble adjusting compared to workers who feel that they get to use their potential or competence and feel support from their co-workers and leaders (Fernet and Austin, 2015). Our research findings indicated that autonomy, competence development and social support from colleagues and leaders are all negatively related to institutional stress, supporting hypothesis 2.

According to the third hypothesis, we predicted that autonomy, competence development and social support (from both colleagues and leader) would be positively related to job performance, and mediate the relationship between institutional stress and job performance. Higher level of reported autonomy, competence development and social support

from colleagues, was positively related to job performance in both groups. This indicates a pattern in which the influence from institutional stress has a potential to be mediated by autonomy, competence and social support from colleagues. Our findings were statistically significant in accordance to our hypothesis, except for social support from leaders which was removed from the model as part of model assessments. Among both leaders and employees, the mediating role of social support from leaders was not confirmed, and this dimension was therefore removed in the modification process. The result showing that social support from leader was not statically significant was a surprising result, considering the large body of research focusing on the importance of leadership support on various outcomes (Wayne et al., 2000; Wang et al., 2005; Caldwell et al., 2008). We can only speculate about the reasons for this unexpected finding. According to the leader-employee theories (e.g., Gestner and Day, 1997), leadership support is normally found to be positively related to job performance (Janssen and Yperen, 2004). Even though institutional stress was negatively related to leadership support in both subgroups in our analysis, leadership support was not significantly related to job performance in any of the two groups in this analysis. One can theoretically argue that even if the immediate supervisor can make an employee's work life miserable by not being supportive or not helping the employee achieve his/her work tasks and goals, in hospitals where much of the work is performed in teams and line managers might have a more distant role, social support from co-workers is more important than social support from the leader.

According to the JD-R model, not all job demands are necessarily negative, but they have the possibility to turn into job stressors if they acquire high effort and are associated with high costs. Job resources are necessary both to 'get the job done' but also important in their own right (Hobfoll, 2002). This might explain why autonomy, competence development and social support are positively related to job performance in the current study. In both subgroups

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(leaders and employees without leadership responsibilities), autonomy, competence development and social support from colleagues seemed to be important job resources, and they were all negatively related to institutional stress and positively related to job performance.

Job demands such as institutional stress can potentially influence a range of important job-related variables, not only job performance. Using the JD-R perspective, it is reasonable to suspect that institutional stress might be negatively related to other types of outcomes, such as organizational commitment, work engagement and job satisfaction, and be positively related to job related exhaustion, intentions to quit and negative organizational behaviour. More knowledge about how perception of institutional stress affects employees might give leaders tools to structure collaboration and work tasks in ways to diminish the negative influence from institutional stress.

The survey response rate in this study was 40% for non-leaders and 50% for leaders. We cannot be sure that our selection is totally representative of all organizational members. However, we do not consider this to be a fundamental challenge in the current study based on the use of structural equation modelling where the focus is not to benchmark and compare mean scorings between groups. Further, we do not consider the sample characteristics to be a threat to the statistical variance or estimation using SEM.

One of the main limitations with this study is its cross-sectional design. While SEM-technique used for the analysis informs about possible directions of effects, the cross-sectional nature of the study limits conclusions about causal relationships among the variables.

Future research should test the findings from the current study in different context using various methods. Longitudinal designs are necessary in order to validate our findings, and in order to provide insights regarding causality. The results are based on the data collected using a self-reported questionnaire, which might increase common method bias. To

compensate for the subjectivity of the data collection method, validity and reliability assessments have been conducted. Still, the use of self-reports can potentially overestimate the magnitude of observed correlations (Sullivan and Bhagat, 1992) and structural relations among variables.

As this study included a range of different professions and positions, based on the diversity of the sample, one might suppose that findings can be relevant to other sectors in addition to the health care sector. Future studies might consider mechanisms related to institutional stress in sectors other than health care organizations.

Conclusions

The purpose of the current study was to test a theoretical mediation model to broaden the understanding of the influence of institutional stress on job performance and additionally to explore the mediating role of job resources represented by autonomy, competence development and social support. Generally, statistical assessments supported the adequacy of measurements concepts. Assessment of the hypothetical structural model revealed somewhat different structural relations among employees with and without leadership responsibilities. The research findings of this study, indicating that institutional stress has substantial negative influence on motivational variables of both employees and leaders and directly influences job performance among employees, have several implications. Future research should look more into the mechanisms through which institutional stress influences workers and leaders, in both hospitals and other sectors. Although previous studies have produced a long list of possible antecedents of work related stress, such as high work pressure, emotional demands and role ambiguity (e.g., Demerouti and Bakker, 2007), few studies have focused on how and why institutional stress affects employees. Research topics might for instance look at the ways in

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which organizational decision-making and goals trigger institutional stress reactions and affect leaders in a different way compared to employees without leadership roles, and explore different possibilities for leaders to manage institutional stress.

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**ORIGINAL RESEARCH:
EMPIRICAL RESEARCH—QUANTITATIVE**

Work climate and the mediating role of workplace bullying related to job performance, job satisfaction, and work ability: A study among hospital nurses

Espen Olsen¹   | Gunhild Bjaalid² | Aslaug Mikkelsen^{2,3}

¹Centre for Resilience in Healthcare, Department of Health, University of Stavanger, Stavanger, Norway

²Business school, University of Stavanger, Stavanger, Norway

³Stavanger University Hospital, Stavanger, Norway

Correspondence

Espen Olsen, Centre for Resilience in Healthcare, Department of Health, University of Stavanger, Stavanger, Norway.
Email: espen.olsen@uis.no

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Abstract

Aim: To increase understanding of workplace bullying and its relation to work climate and different outcomes among nurses. Examine a proposed bullying model including both job resource and job demands, as well as nurse outcomes reflected in job performance, job satisfaction, and work ability.

Background: Workplace bullying has been identified as some of the most damaging mechanisms in workplace settings. It is important to increase understanding of workplace bullying in relation to work climate and different outcomes among nurses.

Design: This study adopted a cross-sectional web based survey design.

Method: A sample of 2946 Registered Nurses from four public Norwegian hospitals were collected during October 2014. We analysed data using descriptive statistics, correlations, Cronbach's alpha, confirmatory factor analyses, and structural equation modelling.

Results: The majority of work climate characteristics confirmed to influence workplace bullying, and additionally had direct influence on nurse outcomes; job performance, job satisfaction, and work ability. Bullying had a mediational role between most of the work climate dimensions and nurse outcomes.

Conclusion: This study increases our understanding of organizational antecedent of bullying among nurses. Workplace bullying among nurses functions as a mediator between the majority of work climate dimensions and outcomes related to job satisfaction and work ability. Strategies to reduce bullying should look at the study finding and specifically job resources and job demands that influence bullying and nurse outcomes.

KEYWORDS

bullying, healthcare improvement, hospital care, job demands, job performance, job resources, job satisfaction, nurses, structural equation modelling, work ability, work climate

1 | INTRODUCTION

Workplace bullying is a serious problem in work settings as well as health care and hospital settings where up to 50% of nurses might experience or witness, to some degree, bullying of others. Nurses who experience bullying report lower levels of job satisfaction and higher levels of anxiety, depression, and propensity to leave (Quine, 2001). Mental and physical health problems, symptoms of post-traumatic stress, and burnout are expected outcomes of workplace bullying (Nielsen & Einarsen, 2012). Workplace bullying is not expected to exist in a vacuum, as it is influenced by and evolves from different characteristics of the organization (Einarsen, 1999; Leymann, 1996). Workplace bullying should not be viewed as a simple conflict between two individuals, but rather as a complex phenomenon that can be understood through an examination of organizational factors (Johnson, 2009).

Different work conditions might be related to bullying in different organizational settings (Einarsen, Raknes, & Matthiesen, 1994). One of the solutions to reduce bullying lies in identifying the antecedents and dynamics of organizational factors, and in identifying solutions so that bullying can be prevented (Hutchinson, Vickers, Jackson, & Wilkes, 2005). In addition, to prevent bullying, hospitals need to identify factors that influence the job satisfaction, work ability, and job performance of nurses. Potentially, certain organizational factors are likely to be important in preventing bullying while other factors are more likely to influence job satisfaction or other outcomes. Furthermore, some influences might be indirect while others might be direct. In this study, we assume that workplace bullying mediates much of the influence from organizational factors on nurse outcomes. The purpose of for this study was to understand the dynamics of workplace bullying related to work climate and different outcomes among nurses. Accordingly, a proposed bullying model included organizational antecedents and nurse outcomes reflected in job performance, job satisfaction, and work ability.

1.1 | Background

The job demands-resources (JD-R) model proposes that working conditions can be categorized into two broad categories, job demands and job resources (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). High work pressure, an unfavourable physical environment, and emotionally demanding interactions with clients or colleagues are examples of job demands. Career opportunities, co-worker support, role clarity, participation in decision-making, and skill variety are examples of job resources. Different studies focus on various aspects of job resources and job demands, from individual, interpersonal, and higher organizational levels (Bakker & Demerouti, 2007).

The JD-R model has become central in describing organizational factors and their influence on different outcomes. The general assumption is that high job demands lead to strain and health impairment and that a greater number of resources lead to increased motivation and production. The JD-R model predicts that job resources

Why is this research needed?

- Understanding the predictors of bullying and nurse outcomes are crucial.
- Previous research has demonstrated challenges related to low levels of job resources, high work related stress, and bullying among nurses.
- Association and levels related to organizational factors, workplace bullying and nurse outcomes will vary across different settings and cultures, and we need to explore this using empirical research.

What are the key findings?

- Structural equation modelling revealed a satisfactory model fit in a relatively large Norwegian nurse sample. The model fit the data well, supporting the overall bullying model and underlying hypotheses of the current study.
- Institutional stress and ethical dilemmas have significant negative influence on bullying, and they reduce job performance, job satisfaction, and work ability amongst nurses. However, job resources, such as competence and development, and colleague support, reduce bullying and increase job performance, job satisfaction and work ability amongst nurses. In this study, task oriented leadership are only significantly related to job satisfaction, which indicates that other forms of leadership probably are more efficient to reduce bullying.
- Bullying plays a mediating role in the relation between the majority of job resources and job demands, and bullying negatively influences job satisfaction and work ability amongst nurses. Bullying does not have a direct influence on self-reported job performance amongst nurses.

How should the findings be used to influence policy/practice/research/education?

- It is critical for the development and management of human and organizational factors in hospitals to gain insights into organizational and structural factors that influence nurse outcomes, and mediators such as bullying. With this knowledge, it is possible to initiate appropriate actions to reduce the levels of bullying in the health sector.
- Future research should examine how organizational improvement programs can reduce workplace bullying by focusing on reducing institutional stress and dilemmas among nurses. These programs should focus on achieving higher levels of role clarity, transparent decision-making procedures, improving management conflict resolution skills, and structural ways to handle and reduce ethical dilemmas among nurses.

mitigate the negative effects of job demands on exhaustion. In the opposite direction, long-term excessive job demands might lead to sustained activation and overtaxing, eventually resulting in exhaustion. Job demands are generally expected to increase with lower levels of job resources (Schaufeli & Taris, 2014). According to the JD-R perspective, it is generally suggested that a dual strategy should be adopted in health care, focusing on both decreasing job demands and increasing job resources (Jourdain & Chênevert, 2010).

Characteristics of the workplace that are associated with low job resources and high job demands have also been demonstrated as risk factors for high levels of workplace bullying. Workplace bullying implies that an employee frequently and repeatedly is exposed to negative behaviours at work (Saunders, Huynh, & Goodman-Delahunty, 2007). Agervold (2009) found that poorer levels of psychosocial work environment correlated positively with workplace bullying. Organizational factors included changes in one's position, work pressure, performance demands, autocratic management, role conflicts, lack of role clarity, and a poor social climate. The negative influence of role ambiguity and role conflict on subsequent workplace bullying, have also been demonstrated longitudinally (Reknes et al., 2014).

It is important to know more about the organizational dynamics in a hospital setting that influence workplace bullying because bullying can negatively influence various outcomes, like increased mental and physical health problems (Nielsen, Magerøy, Gjerstad, & Einarsen, 2014). Workplace bullying might negatively influence patients and hospital staff, as exemplified in several studies (Kivimäki, Elovainio, & Vahtera, 2000; Laschinger, Grau, Finegan, & Wilk, 2010; McKenna, Smith, Poole, & Coverdale, 2003; Simons, 2008).

Nurses and healthcare professional are exposed to considerable risk of violence related to workplace trauma (Rippon, 2000). Bullying is an example of several workplace traumas that nurses can experience. Nurses seem to experience higher levels of bullying compared to other healthcare staffs (Quine, 2001). Still, methodological approaches seem to moderate the prevalence rates of workplace bullying (Nielsen, Matthiesen, & Einarsen, 2010). Therefore, comparing the prevalence rates of workplace bullying requires caution with regards to how bullying is defined and measured.

Nursing managers, fellow nurses, other medical staff, or patients and families are potential relational sources of bullying in healthcare settings (Hockley, 2002). The forms of bullying may be manifested in both overt and covert forms, and they should be considered as a serious problem that needs to be addressed (Johnson, 2009). During the course of a working career, most workers are likely to be involved in bullying, either as victims or bystanders (Einarsen, Hoel, Zapf, & Cooper, 2011).

Factors that can promote bullying might be related to poor information flow, an authoritative way of settling differences of opinion, lack of conversations about the tasks and goals of the work unit, and insufficient possibilities to influence matters concerning the work situation of workers (Vartia, 1996). These factors can create a work culture or work climate where bullying and negative behaviours

can grow and be accepted as a part of the culture. The culture of an organization provides boundaries and guidelines that help members of the organization to know the correct way to behave towards each other, and how to perform their work tasks. The role of leaders and managers in preventing bullying is also an interesting theme; is there a leadership style that is better or worse regarding how to establish a work climate free of bullying? The occurrence of bullying and harassment is particularly related to low satisfaction with leadership, work control, social climate, and experience of role conflict (Einarsen et al., 1994). Studies of workplace bullying have also found it related to leadership issues such as lack of long and short-term planning and distribution of work tasks, clarifying roles and responsibilities and performance objectives, and monitoring operations and performance. Therefore, we introduce task oriented leadership (Yukl, Gordon, & Taber, 2002) as an important job resource dimension in the current study.

Levels of workplace bullying are expected to vary across countries based on underlying variation of work characteristics and values in different countries and cultures (Nielsen et al., 2009). The existing studies suggest that the prevalence of bullying is lower in Scandinavian countries compared to most other European countries such as UK, the Netherlands, Belgium, and Germany (Nielsen et al., 2009). This might be due to specific characteristics of organizations, the content of regulatory frameworks (Einarsen, 2000), and cultural issues related to feminine values, low power distance, individualism, attention to well-being of workers, and resistance to power abuse (Hofstede, 1980). Cultures with high power distance and clear hierarchy between professions, might be more vulnerable to developing a culture with high degrees of workplace bullying. Healthcare organizations can also be viewed as complex organizations with dilemmas that can potentially create role conflict and ambiguity (Kälvemark, Höglund, Hansson, Westerholm, & Arnetz, 2004; Krichbaum et al., 2007; McIntosh & Sheppy, 2013; Milisen, Abraham, Siebens, Darras, & de Casterlé, 2006; Silén, Tang, Wadensten, & Ahlström, 2008; Zuzelo, 2007), which nurses need to be able to handle in their daily work. It is reasonable to believe that the complexity of healthcare organizations has the potential to negatively influence nurses because of strain related to conflicting values, institutional stress, and uncertainties regarding priorities.

How to best handle patients and their families in a difficult situation, deal with scarce resources on rooms, equipment and qualified personnel combined with a general work overload, are some examples of situations that can create ethical dilemmas in a hospital work setting. In this study, we wanted to explore how a high degree of institutional stress and experienced dilemmas in the work situation affects bullying and nurse outcomes. We expect that nurses in organizational environments reporting less dilemmas and institutional stress will generally score more favourably on job performance, job satisfaction, and work ability.

Influence from experiencing ethical dilemmas and institutional stress will be explored as job demands in the current study. The main interest is to investigate if organizational members perceive institutional stress and ethical dilemmas, and how this influence

levels of workplace bullying and outcomes such as job satisfaction and job performance.

In conflict situations with individuals involved it is tempting for managers and co-workers to focus on individual explanations for the conflict, such as personality traits or competence level of the involved parties. However, it has been emphasized that bullying research should focus more on the broader organizational context (Hutchinson, Vickers, Jackson, & Wilkes, 2006), because this type of knowledge can contribute to the development of knowledge helping to decrease workplace bullying in different organizations and work settings. How the levels of different work climate dimensions' influence bullying and other nurse outcomes, such as job performance, job satisfaction, and work ability needs to be explored empirically.

2 | THE STUDY

2.1 | Aim

The purpose of this study was to explore the influence of job resources and job demands on bullying and three self-reported nurse outcomes. The selected outcome variables were job performance, job satisfaction, and work ability. The theoretical mediational model underlying the current study are specified in Figure 1 and include three hypotheses; Job resources will reduce bullying and increase nurse outcomes (Hypotheses 1), while Job demands will increase bullying and reduce nurse outcomes (Hypotheses 2). Lastly, bullying will have a direct negative influence on nurse outcomes (Hypotheses 3). Support for the theoretical model will indicate that bullying mediates the influence job resources and job demands have on nurse outcomes (job performance, job satisfaction, and work ability).

2.2 | Design

The current study adopted a cross-sectional web based survey design.

2.3 | Participants

The study was conducted in October 2014 and data were collected via an internal web-application to all healthcare employees employed in one of the four public healthcare regions in Norway. The selected health region comprises four main health enterprises, which are legal entities under the regional authority. Each health enterprise consists of a central hospital associated with some local hospitals and outpatient clinics.

2.4 | Data collection

All survey responses from the informants were protected anonymously. Information regarding the survey was distributed via an internal web-application when the survey was administered. Additionally, union representatives and other stakeholders were informed upfront about the survey. Overall, 2946 Registered Nurses responded to the survey, representing a response rate of 40%. Other personnel attending the survey was not included in the current study.

2.4.1 | Institutional stress

Five items from Cooper's Job Stress Questionnaire (CJSQ) were used to measure institutional stress (Cooper, 1981). Items on the scale assess institutional stress related to the organization's policy, lack of power and influence, values that conflict with those of the

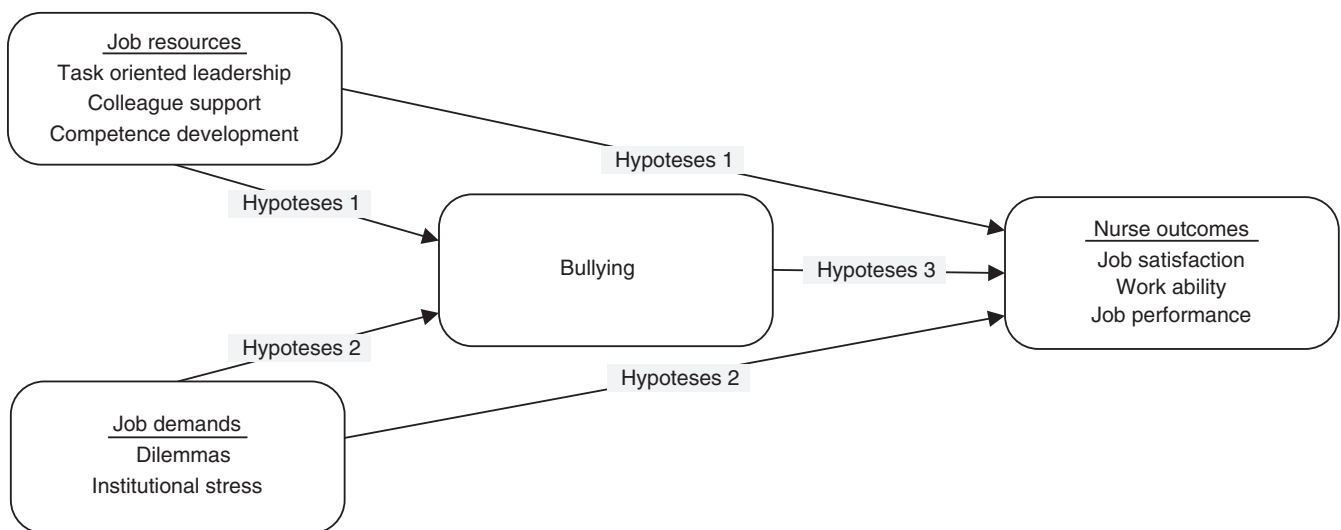


FIGURE 1 The theoretical mediational model underlying the current study. Only latent variables are included to ease the presentation. Job resources will reduce bullying and increase nurse outcomes (H1), while job demands will increase bullying and reduce nurse outcomes (H2). Lastly, bullying will have a direct negative influence on nurse outcomes (H3)

organization, leaders not understanding the challenges related to the work situation, and the organization using the wrong parameters to measure the quality of work. Items are measured on a 6-point scale ranging from not relevant or no stress to much or always stress.

2.4.2 | Competence development

Four items from the COPSOQ-instrument were used to measure competence development (Kristensen, 2000; Rugulies, Aust, & Pejtersen, 2010). Items assess topics related to opportunity to learn, adapt, and use the skills and expertise related to work. Items are measured on a 5-point scale ranging from strongly disagree to strongly agree.

2.4.3 | Social support

Three items were used to measure social support from colleagues (van der Heijden, 1998). This scale includes items related to social support, such as "Do your colleagues offer constructive advice?" measured on a 5-point scale ranging from not at all to very much.

2.4.4 | Task oriented leadership

Six items were used to measure task oriented leadership (Yukl et al., 2002). Specific task behaviours related to leadership include short-term planning, clarifying responsibilities and performance objectives, and monitoring operations and performance. Items are measured on a 5-point scale ranging from strongly disagree to strongly agree.

2.4.5 | Bullying

Exposure to workplace bullying was measured using a 12-item trimmed version of the Negative Acts Questionnaire-Revised (NAQ-R) instrument (Einarsen, Hoel, & Notelaers, 2009). The items assess exposure to negative acts within the last 6 months, with the response alternatives of (1) never, (2) now and then, (3) monthly, (4) weekly, and (5) daily. All items are formulated in behavioural terms, with no reference to the term bullying, and the items are referring to both direct (e.g. verbal abuse) and indirect behaviour (e.g. withdrawal of information) (Nielsen et al., 2009).

Bullying is often measured by asking the respondents to self-identify as victims of bullying. An alternative is to ask respondents about exposure to specific negative acts. The latter solution, with the use of the behavioural classification method, has been described as more objective (Nielsen et al., 2010). Another issue concerns the measurement error. Normally, latent factors with the use of psychometric approaches incorporate several items in each factor. This is because each item is associated with measurement error and several items are needed to measure different parts of theoretical domains (DeVellis, 2016; Netemeyer, Bearden, & Sharma, 2003). For these reasons, we selected exposure to specific negative acts as a measurement of bullying.

2.4.6 | Job performance

Four items from QPS Nordic were used to measure job performance (Elo et al., 2000). This scale includes employees' self-assessment of their job performance. Topics include the quantity and quality of work performance, the ability to solve problems at work, and the satisfaction with own capacity to develop and maintain good work relationships with colleagues. Items are measured on a 5-point scale ranging from never/seldom to always/very often.

2.4.7 | Job satisfaction

Four items were used to measure job satisfaction (Kristensen, 2000) related to job prospects, physical working conditions, the use of skills, and overall satisfaction with job when everything is considered. Items are measured on a 4-point scale ranging from very unsatisfied to very satisfied.

2.4.8 | Work ability

Two items were used to measure work ability. One item measured self-rated current work ability while the other item measured estimated work ability in the forthcoming 6 months. Items of the work ability index (Tuomi, Ilmarinen, Jahkola, Katajarinne, & Tulkki, 1994) originally include additional items with different scales, which is not optimal in SEM-models. Hence, the included items were revised for the purpose of the study. Items are measured on a scale ranging from 0 (not capable of working) to 10 (optimal work ability).

2.5 | Ethical considerations

The Norwegian Centre for Research Data registered and approved the study's procedures.

2.6 | Data analysis

2.6.1 | Statistical analysis

The data was analysed with version 21.0 of SPSS and AMOS 21.0 (Arbuckle, 2012). Basic descriptive statistics, bivariate correlations, and Cronbach's alphas were analysed using SPSS. Correlations between concepts indicate level of difference and discriminant validity of concepts. Confirmatory factor analyses (CFA) and structural equation modelling (SEM) were conducted in AMOS. CFA builds on the concept validity, ensuring that each factor measures different concepts without too much overlap. Validation of the measurement model were a prerequisite before estimation of the structural model using SEM. This step is common given that the structural model is nested with the measurement model (McDonald & Ho, 2002). The structural model using SEM was used to evaluate the relationships between the latent factors in the hypothesized theoretical model (Figure 1). The full measurement model incorporating all items and the latent factors were included and specified when testing the paths between the latent factors. The variance explained in outcome

variables supports both the theory and the criterion related validity of the model. Significant beta coefficients and direction of such coefficients potentially support or rejects the theoretical model and the associated hypotheses. Finally, the overall impression of statistics and findings indicates the degree to which the totality of concepts and approaches are valid and satisfactory.

In AMOS, the following indicators were used to evaluate the fit: the Root Mean Square Error of Approximation (RMSEA), Tucker–Lewis Index (TLI), Incremental Fit Index (IFI), and Comparative Fit Index (CFI). RMSEA less than .05 corresponds to a “good” fit and an RMSEA less than .08 corresponds to an “acceptable” fit (McDonald & Ho, 2002). Values of 0.90 or greater for other indicators indicate good fit (Hoyle, 1995; McDonald & Ho, 2002). Due to the large sample size, chi-square was not used to evaluate the fit (Bentler & Bonnet, 1980).

Analytical techniques to test mediation effects are still evolving (Kline, 2015; McDonald & Ho, 2002; Shrout & Bolger, 2002). In this study, a two-step structural modelling followed the CFA. In the first step, all hypothetical links were estimated according to Figure 1. Based on the results, model modifications were considered before the second step. In the second step, the model was modified and estimated with the use of an iterative process, extracting the non-significant paths one by one. No further modifications were planned beforehand if the second step using SEM yielded satisfactory results.

2.7 | Validity and reliability

As described in the statistical analyses section, complementary statistics was used to ensure the validity and reliability of the concepts and study findings. Satisfactory measurement instruments were used to ensure that items reflect the different theoretical domains. This is often referred to as content validity (DeVellis, 2016; Netemeyer et al., 2003). CFA was conducted to assess concept validity and validate the measurement concepts in the current setting (McDonald & Ho, 2002). SEM concerns the structure between concepts and the theoretical network between scales, as specified in Figure 1. Assessments of relations between concepts using SEM test the nomological validity of concepts (DeVellis, 2016). Criterion related validity will be demonstrated if the theoretical model significantly explain variance in the outcome variables (Netemeyer et al., 2003). Both CFA and correlations contribute to testing of discriminant validity, assessing to which degree there is a satisfactory overlap between concepts (McDonald & Ho, 2002).

Internal-consistency reliability (Cronbach's alpha) for the measures was acceptable, ranging from 0.70 to 0.92 (Table 2). Competence (.70), job performance (.74), and job satisfaction (.75) had the lowest Cronbach's alphas, while task oriented leadership (.92) and bullying (.92) had the highest alpha scores. Correlations ranged from $-.46$ to $.49$. The relations among measurement concepts measured by Pearson's r were considered adequate. Confirmatory factor analysis using Maximum Likelihood extraction yielded a satisfactory fit among nurses (CFI = 0.92, IFI = 0.92, TLI = 0.90, RMSEA = 0.041).

TABLE 1 Characteristics of the Registered Nurse sample

Variables	N	%
Gender		
Female	2661	90.3
Male	285	9.7
Age		
< 31 years	636	21.6
31–40 years	753	25.6
41–50 years	749	25.4
51–60 years	651	22.1
> 60 years	157	5.3
Postgraduate studies		
Yes	1576	53.5
No	1370	46.5
Year(s) of working		
< 5	508	17.2
5–10	512	17.4
> 10	1377	46.7

Nurses in leadership positions were not included in the study.

The results provide support for the validity and reliability and the use of the measures in this study.

3 | RESULTS

Table 1 presents the frequencies and characteristics of the Registered Nurse sample. Overall, 90% of the sample was female, and 47% were up to 40 years old. Furthermore, 54% completed postgraduate studies following the 3-year general nurse education. Additionally, 47% had more than 10 years of work experience.

3.1 | Assessing model fit of the structural model

The first test of structural relations between concepts indicated good fit between the data and the theoretical model used (CFI = 0.91, IFI = 0.91, TLI = 0.90, RMSEA = 0.042). Still, in the first step, some of the estimated paths indicated insignificant relationships, demonstrating the need for some modifications (Table 3). Task oriented leadership was not significantly related to bullying, job performance, and health. Additionally, bullying did not influence job performance and institutional stress was not significantly related to work ability and work performance in step 1. Hence, in the second step using SEM, the model was modified and estimated with the use of an iterative process, extracting the non-significant paths. As part of this process, five paths were finally removed from the model. This modification did not reduce the fit of the overall model to the data (CFI = 0.91, IFI = 0.91, TLI = 0.90, RMSEA = 0.042), and all beta coefficients were significant in the second step using SEM. Additionally, the directions of the beta estimates were generally in the expected directions, as specified in the hypotheses.

TABLE 2 Descriptive statistics, Cronbach's alphas, and correlations.

Correlations													
	Range	M	SD	Alpha	1	2	3	4	5	6	7	8	9
1. Institutional stress	1–6	1.81	0.96	0.86	–								
2. Competence and development	1–5	4.53	0.53	0.70	–.21**	–							
3. Social support from colleagues	1–5	3.47	0.67	0.74	–.03	.25**	–						
4. Dilemmas at work	1–5	2.70	0.68	0.81	.49**	–.08**	–.06*	–					
5. Task oriented leadership	1–5	3.35	0.93	0.92	–.33**	.27**	.22**	–.26**	–				
5. Bullying	1–5	1.21	0.34	0.92	.28**	–.20**	–.18**	.20**	–.16**	–			
6. Job performance	1–5	4.07	0.45	0.78	–.17**	.24**	.29**	–.17**	.18**	.20**	–		
7. Job satisfaction	1–4	2.94	0.47	0.73	–.46**	.38**	.23**	–.33**	.35**	.28**	.30**	–	
8. Work ability	0–10	9.02	0.83	0.83	–.13**	.14**	.12**	–.10**	.10**	.13**	.23**	.19**	–

* $p < .05$.** $p < .01$.

Hypotheses 1 is supported because colleague support and competence development reduce bullying and increase nurse outcomes (job performance, job satisfaction, and work ability). However, task oriented leadership did only have a significant influence on job satisfaction ($b = 0.14$; $p < .001$) and were not significantly related to the other variables. Hypotheses 2 was generally supported; the result indicated that both job demands, institutional stress and dilemmas, increase bullying and reduce job satisfaction and job performance. However, institutional stress was not significantly related to work ability. Lastly, hypotheses 3 was supported with regard to two nurse outcomes; bullying had direct negative influence on job satisfaction ($b = -0.10$; $p < .001$) and work ability ($b = -0.07$; $p < .001$), but not with job performance ($b = -0.04$; not significant). With the exception of task oriented leadership, that was only significantly related to job satisfaction, the testing of the structural model support that the majority of job resources and job demands inversely influence both bullying and the outcome variables, and that bullying mediates the influence job resources and job demands have on work ability and job satisfaction among nurses.

4 | DISCUSSION

In this study, a model illustrating the mediating role of bullying related to work climate and outcomes among nurses has been developed and tested. As such, the study increases our understanding of performance shaping factors related to nurses work situation. Work characteristics were expected to have direct influence on the three outcomes defined in the study. In the final estimation 18 beta coefficients were significant and in the expected directions, providing relatively solid support for the hypothesis and the theoretical mediational model.

Earlier research supports that organizational factors influence the levels of bullying (Salin & Hoel 2011; Vartia, 1996). Additionally, research among nurses supports that bullying behaviour negatively influences satisfaction (Rodwell, Demir, & Steane, 2013) and health

(Reknes et al., 2014). Furthermore, earlier studies indicated that bullying among nurses can lead to a range of negative outcomes such as depression, lowered work motivation, decreased ability to concentrate, poor productivity, lack of commitment to work, and poor relationships with patients, managers, and colleagues (Yıldırım, 2009).

In this study, bullying did not have a significant direct influence on job performance. Nevertheless, based on the results indicating negative influence of bullying on nurses' work ability as well as earlier prospective design studies indicating negative long-term health effects of bullying (Reknes et al., 2014), it is most likely that bullying over longer periods will have negative influence on job performance due to health impairments of nurses who are victims of bullying. High levels of work related conflicts might also take time and energy away from work tasks and lead to higher degrees of long-term sick leave (Einarsen & Mikkelsen, 2003). Research indicating that bullying among nurses leads to burnout (Giorgi et al., 2016) supports this view. Additionally, bullying negatively influences the work ability of nurses, which correlated significantly with job performance ($r = .13$) in the current study, suggesting that bullying negatively affects job performance through its negative influence on work ability.

However, the non-significant influence of bullying on job performance might explain why negative behaviours are allowed to grow in organizational cultures, for instance, if managers do not understand the severe and long-term consequences of such behaviours, or how to prevent them. Another problem might be managers perceiving bullying to be caused primarily by individual factors out of their control, and not by organizational or structural factors which they can influence. Nurse managers should be aware of the various ways that can be used to assess job performance, some of which are associated with problems and challenges related to validity and reliability of job performance indicators (Viswesvaran, Ones, & Schmidt, 1996). The validity and reliability of the job performance indicator used in the current study seemed adequate and satisfactory. Nevertheless, the influence of bullying on job performance might have been significant with the use and selection of another type of job performance indicator.

TABLE 3 Structural equation modelling with standardized beta coefficients ($N = 2946$)

	Hypotheses	Step 1		Step 2	
		Beta standardized	P	Beta standardized	P
Task oriented leadership → Bullying	H1	.00	.91		
Colleague support → Bullying	H1	-.12	***	-.12	***
Competence development → Bullying	H1	-.13	***	-.14	***
Dilemmas → Bullying	H2	.10	***	.10	***
Institutional stress → Bullying	H2	.21	***	.22	***
Competence development → Job performance	H1	.21	***	.22	***
Task oriented leadership → Job performance	H1	.03	.22		
Colleague support → Job performance	H1	.25	***	.26	***
Institutional stress → Job performance	H2	.04	.12	-.08	.04
Dilemmas → Job performance	H2	-.19	***	-.18	***
Bullying → Job performance	H3	-.04	.06		
Competence development → Job satisfaction	H1	.34	***	.35	***
Task oriented leadership → Job satisfaction	H1	.14	***	.14	***
Colleague support → Job satisfaction	H1	.11	***	.11	***
Institutional stress → Job satisfaction	H2	-.30	***	-.30	***
Dilemmas → Job satisfaction	H2	-.13	***	-.14	***
Bullying → Job satisfaction	H3	-.11	***	-.10	***
Colleague support → Work ability	H1	.09	***	.09	***
Task oriented leadership → Work ability	H1	.01	.65		
Competence development → Work ability	H1	.13	***	.13	***
Institutional stress → Work ability	H2	-.05	.08		
Dilemmas → Work ability	H2	-.07	.02	-.06	***
Bullying → Work ability	H3	-.07	.00	-.07	***

*** $p < .001$.

Structural equation modelling using Maximum likelihood extraction. Blank fields are not estimated in Step 2. Percentage explained variances (squared multiple correlations) for the mediator and outcome variables (based on Step 2): Bullying (14%), job performance (23%), job satisfaction (52%) and work ability (6%).

There are many pitfalls nurse leaders can fall into when trying to help their employees experience a positive work life, free of bullying. These include dismissing the importance of role conflicts and responsibilities, reducing work autonomy and information flow, measuring the quality of employees' work using the wrong parameters, taking important organizational decisions without employees' participation or not informing them of changed priorities. Research suggests that work environments that are perceived as high on the above-mentioned issues, lead to a range of harmful work consequences such as higher levels of experienced negative acts, more work stress, plans to resign, lower job satisfaction and reduced job performance (Einarsen & Hoel, 2008; Einarsen et al., 1994; Vartia, 1996).

Nurses face multiple stressors in their jobs related to work overload, role conflicts, and experiences of aggression (Lim, Bogossian, & Ahern, 2010). This study indicates that institutional stress and dilemmas create stress. Nurses can be surrounded by a high degree of ambiguity, dilemmas, and incompatible demands, which can create frustration and conflicts. This, in turn, can have negative influences on the working environment and different nurse outcomes. Nurses

therefore need to create coping strategies in their daily work. Such coping strategies might be seeking problem-solving and self-control (Lim et al., 2010). This study also suggests that particularly seeking colleague support and development of nurse competencies are important and relevant for the coping of nurses.

Study findings clearly indicates that job resources decrease bullying while job demands increase bullying. Furthermore, job resources generally have positive influence on outcome variables, whereas job demands have negative influence on outcome variables. Beyond providing additional support for earlier research, the major finding and contribution of this study is the explanatory power of organizational factors related to job performance, job satisfaction, and work ability, and the mediating role of bullying.

Most public hospitals in developed countries have, over the years, adopted a functional-like organizational structure built around a discipline-based specialization (Shortell & Kaluzny, 2000). Hospital culture has been described as a culture that is full of hierarchies and professional borders (Bate, 2000). There are many stakeholders and complex levels of decision-making authority in a public hospital, and

hospitals have been criticized for being too hierarchical and too bureaucratic. This type of organization may lead to a higher risk of bullying by creating a power structure with elite and subordinate professions, and by lack of common goals and cooperation between professions or departments.

4.1 | Limitations

This study has certain limitations based on the cross-sectional design. Structural modelling assessed with SEM is not proven longitudinally. Self-reported measures used in the study can lead to measurement bias. However, psychometric techniques were applied to increase the objectivity and validity of the study and measures. Additionally, it is important to emphasize that the organizational factors investigated in this study are not exhaustive, and other factors could have been included based on different organizational perspectives and approaches. The sample is based on healthcare nurses working in hospitals in a Norwegian healthcare region. This sample is probably relatively similar to the other healthcare regions in Norway many of which follow the same regulations and national requirements for Norwegian hospitals and nurses. Regarding the generalizability of the findings, more research needs to be conducted to generalize the findings to other cultures and settings.

5 | CONCLUSION

High levels of bullying can be caused by numerous factors, one is the quality of leadership style and the manager's ability to discover and act upon employees participating in bullying. Nurse leaders need to balance different performance shaping factors in directions that favour less bullying and support outcomes such as job performance, job satisfaction and work ability. Such leadership tasks aim to reduce the influence of repressive job demands and stressors, such as dilemmas and institutional stress, and enhance job resources, such as competence development, task oriented leadership, and social support from colleagues. Improvement programs in hospitals should work towards achieving adequate levels of job resources and job demands in relation to the work environment of nurses. A clear organizational structure and suitable supporting systems will potentially reduce role conflicts and dilemmas. Adequate nurse-to-patient ratios as well as competence building initiatives are some examples of initiatives to decrease bullying and increase the health, satisfaction and performance of nurses. To monitor status, organizational factors should be assessed repeatedly, and leaders must possess tools and competences to improve the organizational scores of units at different levels. It is important to identify and eliminate organizational factors that allow bullying to flourish to reduce the problems of bullying (Hutchinson et al., 2006). Systematic efforts towards reducing bullying and improving nurse outcomes will require investments in multiple forms of resources. If this becomes a major concern for hospital managers

or boards, the cost of low productivity, job strain, and bullying of workers (McTernan, Dollard, & LaMontagne, 2013) should be emphasized.

AUTHOR CONTRIBUTIONS

All authors have agreed on the final version and meet at least one of the following criteria (recommended by the ICMJE [<http://www.icmje.org/recommendations/>]): (1) substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; (2) drafting the article or revising it critically for important intellectual content.

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CONFLICT OF INTERESTS

No conflict of interest has been declared by the authors.

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Survey_v-10 (not including questions specifically for managers)

Employee survey – HELSE VEST (Western Norway Regional Health Authority) 2013

Thank you for participating in this Helse Vest employee survey.

The employee survey will be carried out so that all the employees in Helse Vest can express their opinions about the organisation and the work environment. The results of the survey will help to develop the quality of services and good working conditions for employees.

The survey focuses in particular on *work planning, management* and *the use of ICT* to support coordination and management. The survey forms part of a larger research project that is examining Helse Vest's commitment to "Employee, organisation and technology". This project is being run in cooperation with the University of Stavanger.

Helse Vest conducted a similar employee survey in 2003. That survey was conducted in cooperation with two organisations: the regional research foundation Rogaland Research (*Rogalandsforskning*, now known as IRIS); and the EU-funded research programme NEXT – Nurses' Early Exit Study, which conducted research in many European countries. Several of the questions from the 2003 survey are repeated in our current survey (2013).

Focus on management forms part of the national strategic plan "Health 2020" and is required under the Norwegian health authorities' terms of reference. The same applies to ICT-supported work planning. The survey thus includes several questions about leadership and collaboration. In order to provide good leadership training and positive work environments, we need to collect good data to enable us to understand how leaders and other employees perceive their work situation.

The survey also contains questions about work planning, job satisfaction, the working environment, workplace bullying and management and organisational matters. It is important that all leaders and employees take the time to answer *all* of the survey questions. The results of the 2003 survey have been extremely useful in our efforts to improve working conditions and the effectiveness of our organisation; this includes, for instance, the MOT-, TOLK- and KLEM-projects.

Read each question carefully and try to choose the best answer from the lists provided. There are no right or wrong answers.

The survey forms are confidential. The results will not be used in any way that will allow individual respondents to be identified.

If you have any technical questions about submitting your responses electronically, please contact:

XXXXXXXXXXXXX XXXXXXXXXXXXXXXX.

Please direct other queries to:

- Professor Aslaug Mikkelsen, tel. 51 83 37 70. aslaug.mikkelsen@uis.no
- Associate Professor Thomas Laudal, tel. 51 83 37 22. thomas.laudal@uis.no
- PhD fellow/psychologist Gunhild Bjaalid, tel. 51 83 15 15. gunhild.bjaalid@uis.no

Thank you very much in advance for your assistance!

Stavanger, xx, October 2013

Professor Aslaug Mikkelsen
University of Stavanger

Background information:

1: Please indicate your employer:	
Sjukehusapoteka Vest (Western Norway Hospital Pharmacies)	
Helse Bergen	
Helse Fonna	
Helse Førde	
Helse Stavanger	

2: If you answered Sjukehusapoteka Vest, please indicate the hospital pharmacy you work in:	
Bergen Hospital Pharmacy	
Haugesund Hospital Pharmacy	
Førde Hospital Pharmacy	
Stavanger Hospital Pharmacy	

3: If you are employed by Helse Bergen, please indicate the unit you work in:	
Paediatric clinic	
Rehabilitation clinic	
Surgical services clinic	
Head and neck clinic	
Gynaecology clinic	
Neurology clinic	
Orthopaedic clinic	
Department for cancer treatment and medical physics	
Department of cardiology	
Dermatology department	
Department of surgery	
Department of pulmonary medicine	
Medical department	
Department of plastic surgery	
Department of radiology	
Department of rheumatology	
Department of occupational medicine	
Department of ophthalmology	
Operational services division	
Medical services division	
Psychiatric division	
Voss Hospital	
Administrative personnel	

4: If you are employed by Helse Førde, please indicate where you work:	
Førde Central Hospital (<i>sentralsjukehus</i>)	
Lærdal Hospital (<i>sjukehus</i>)	
Nordfjordeid Hospital (<i>sjukehus</i>)	
Florø Hospital (<i>sjukehus</i>)	
Centre for psychiatry	
Child and Adolescent Mental Health Services (BUP)	
Other	

5:	
If you are employed by Helse Førde, please indicate the department you work in:	
Department of ophthalmology, ENT or maxillofacial surgery, or general services for one of these departments	
Gynaecology clinic, paediatric department, child services department	
Department of surgery or orthopaedics	
Department of medicine, cancer outpatient clinic or dermatology outpatient clinic	
Department of neurology, rheumatology, or physiotherapy and rehabilitation (AFMR)	
AOIS, Emergency department	
Department of clinical chemistry, microbiology, radiology or pathology	
Psychiatric clinic	
IT or technical medical services department	
Operational services department	
KPS services, administration	

6:	
If you are employed by Helse Stavanger, please indicate the unit you work in:	
Rehabilitation clinic	
Psychiatric clinic	
Haematology and oncology clinic	
Gynaecology clinic	
Special medicine clinic	
Surgical/orthopaedic clinic	
Medical services clinic	
Medical clinic	
Emergency clinic	
Paediatric clinic	
Internal services	
Administrative personnel	

7:	
If you are employed by Helse Fonna, please indicate which unit you work in:	
Psychiatry	
Gynaecology/paediatrics	
Surgery	
Medicine	
Emergency room	
Internal services	
Patient services	
Administrative personnel	

8:	
Do you take on paid work in addition to your job with the health authority?	
Yes	
No	
If yes, please enter your average number of hours of additional paid work each week:	

9:	
Gender	
Female	
Male	

10:	30 or under	31 – 40	41 – 50	51 – 60	61 or over
Your current age:					

11:	What is the highest level of education that you have completed?	
Lower secondary school		
Upper secondary school/vocational training		
University college/university, Bachelor's degree level		
University college/university, higher (Master's) degree level		
Doctorate		

Position of employment and working hours

12: You have a:	
Permanent position	
Temporary training position	
Temporary position	
Other	

16:	YES	NO
Would you like to hold a managerial position in the future?		

17: What type of position do you have?	
Administration/leadership	
Patient-oriented position (social educator, dentist, speech therapist, social worker, teacher, milieu therapist, audiologist, medical secretary, therapist etc.)	
Doctor	
Psychologist	
Nurse/midwife	
Auxiliary nurse/care assistant	
Diagnostic services	
Pharmacy personnel	
Operational/technical personnel (including catering, cleaning or portering)	
Ambulance personnel	
Researcher	
External	
Other	

18: Do you work full- or part-time?	
Full time	
Part time	

19: Percentage of full time position:
Enter the percentage here:

20: If you work part time – what is the main reason for this?	
My own choice	
Graduated contractual pension (AFP)/ state pension	
Graduated sick leave	
Graduated disability pension	
Reduced position due to health reasons	
Reduced position due to social or welfare reasons	
Position with another employer	
Educational leave	
Position / secondary position educational leave	
A full time position was not available	
Other	

21:	
Working hours per week (average)	
Number of hours according to contract	
Number of hours overtime	
Number of hours overtime compensated with time off	
Number of hours of additional work	
Other arrangements	

22:	
Do you always work in the same department?	
No, I often rotate between departments	
No, I sometimes rotate between departments	
Yes, I always work in the same department	
Yes, but I would also like to work in other departments	

23:	
How long have you been working in your current profession (please do not include training)?	
Enter the number of years here:	

23B:	YES	NO
Do you have specialist training?		

23C: If "no" to 23B:	
I am undergoing specialist training	
I would like to start specialist training	
Not applicable	

23D: If "No" to 23B:	
What is the main reason you haven't taken specialist training?	
Family reasons	
I like my current job	
The salary/grant is too low during training	
The salary increase after completing the education is inadequate	
I don't want more education	
Other reasons	

24:	
How many days have you spent on professional development during the past twelve months?	
Enter the number of days here:	

25:	
How many hours of ICT-related training have you undertaken during the past 12 months?	
Enter the number of hours here:	

26:

How often during the past year have you thought about...						
	Never	A few times during the year	A few times each month	A few times each week	Every day	N/A
Further training related to your job?						
Further training unrelated to your job?						
Leaving your job?						
Moving to a job in a completely different field?						
Transferring to a different department or unit?						
Looking for a job at a different hospital?						
Moving to a job in municipal health services?						
Moving into general practice?						
Becoming self-employed?						

27: Are you planning to leave your job within the coming 12 months?	
Yes	
No	

28: If you answered yes, please specify your main reason(s). You may select more than one answer.	
To undertake further training	
Family obligations	
Working conditions	
A desire for new challenges	
Pay	
Retirement	
Professional conflicts	
Other	

Planning of work

Helse Vest aims to adopt advanced working methods and integrate ICT systems in a new way.

Below are some questions regarding this work:

29: How much influence do you have in the development of your work plan?	
None	
A little	
Some	
Considerable	
I decide independently	

30: Which answer option best fits your work schedule?	
I work during the day (between 7 a.m. and 4 p.m.)	
I work during the day as well as shifts	
I work irregular hours, but not shifts	
I work one shift: day shift only	
I work one shift: evening shift only	
I work one shift: night shift only	
I work two shifts, but not night shifts	
I work two shifts including night shifts	
I work 3 shifts including night shifts	

31: Work planning	Yes	No	Partly
Have good processes been established for the development of work plans in your department/unit?			
Does the planning of work take into consideration the coordination of various professional groups?			
Are the work plans coordinated in relation to the needs of other professional groups?			

32: Do you have the possibility to change shifts at short notice (1-3 days advance notice)?	
No	
Changing shifts is quite difficult	
Changing shifts is quite easy	
Not applicable	

33: How often do you have to take over shifts at short notice (1-3 days advance notice)?	
Never	
Approximately once or twice per month	
Approximately three to five times per month	
More than five times per month	
Not applicable	

34: How many weekends (Saturday and/or Sunday) per month do you have to work?	
None	
Approximately one	
Approximately two	
Approximately three	

Each third weekend	
--------------------	--

35: In the past three months, what was the longest period you had to work without a single day off in between (including night shifts)?	
Enter the number of days here	

36: All in all, are you satisfied with your working hours:		
	Yes	No
With regard to your well-being at work?		
With regard to your private life?		

37:	No	Yes
Have you participated in the testing of new working hours arrangements?		

38:	No	Yes	Not applicable
Could you consider a working hours scheme where you had 12 hours weekend shifts in exchange for working fewer weekends?			

39:	No	Yes
Would you be interested in participating in work planning that takes into account different levels of activity during the year?		

40:	3 mths	6 mths	12 mths	24 mths
What period of time should the work planning cover?				

41: Do you use GAT (Gatsoft) for the following tasks?	Yes	No	Don't know
To check when you are going to work			
Change shifts			
Inquiries concerning compensatory time off, vacations, and leaves of absence with or without pay			

43: Concerning other ICT-systems apart from GAT:	Yes	No	Don't know
Do you use Outlook to found out about which shifts or tasks you have?			
Do you have a smart-telephone or other portable device which you use to register/read about shifts that others have?			
Are you responsible for registering personal information in DIPS? - That is, registration of information concerning who has which shifts/tasks?			

44: How would you describe your competence regarding the following ICT systems?	Poor	Satisfactory	Good
- DIPS			
- ePhorte			
- Competence portal			
- Learning portal			
- GAT			
- My GAT			
- Part time			
- Additional employment			
- Travel expenses module			

45: Please consider the following statements about ICT and work planning:								
I am open to using new functionality in ICT systems for planning activities, operations and staffing								
(Strongly agree)	1	2	3	4	5	6	7	(Strongly disagree)
Lack of coordination of ICT systems is a problem in your department.								
(Strongly agree)	1	2	3	4	5	6	7	(Strongly disagree)
There is considerable resistance to the use of ICT systems for planning activities, operations and staffing								
(Strongly agree)	1	2	3	4	5	6	7	(Strongly disagree)
Employees in my department look forward to using more modern ICT tools for planning activities, operations and staffing								
(Strongly agree)	1	2	3	4	5	6	7	(Strongly disagree)
I am positive about spending time learning new ICT systems								
(Strongly agree)	1	2	3	4	5	6	7	(Strongly disagree)

Job satisfaction

47: How satisfied are you with:				
	Very dissatisfied	Dissatisfied	Satisfied	Very satisfied
Your job prospects?				
The physical working conditions?				
Opportunities to use your abilities?				
The psychological support at your workplace?				
The opportunities to give patients the treatment/care they need?				
The way work is planned?				
Your job as a whole – all things considered?				

48: Are you concerned about:		
	Yes	No
Being unable to work?		
Being transferred to another job / workplace you don't like?		
Not having enough competence for your role?		
Getting a work plan you do not like?		

49: Below is a set of statements about your relationship with your organisation. Please tick the box that is closest to your view.	To a very small extent	To a small extent	Sometimes	To some extent	To a large extent
I feel that I really belong to the organisation					
The organisation is of great personal value to me					
I am proud of being a part of the organisation					
I do not feel like part of the "family" in the organisation					
I feel that I really belong to my profession					
My profession is of great personal value to me					
I am proud of belonging to my profession					
I don't feel like part of my profession					
I feel there are clear expectations of me when it comes to performing my job					

50:	To a very small extent	To a small extent	Sometimes	To some extent	To a large extent
Does your work require that you take initiative?					
Do you have the opportunity to learn new things through your work?					
Does your work require adaptability?					
Can you use your skills and expertise in your work?					
Is your work meaningful?					
Do you feel that the work you do is important?					
Do you feel motivated and involved in the work you do?					

51:					
	Almost never	Rarely	Sometimes	Often	Always
Is your work varied?					

Do you have enough time to talk to patients?					
How often do you have too little time to finish all your tasks?					
Can you take a break at work whenever you want?					
Are you afraid of making mistakes?					
Do you have to work very quickly?					
Do you experience "downtime"?					
Is your workload unevenly distributed so that things pile up?					

52:					
Below is a list of situations that may arise at work. Indicate how often you experience these situations.					
	Never	Sometim es	Often	Very often	Not applicabl e
Insufficient information from other health care staff regarding a patient's medical condition					
Prescribing of wrong treatment for a patient					
No doctor present at a medical emergency					
Not enough staff to provide adequate services					
Doubts concerning whether a patient or his/her relatives should be given information about the patient's medical condition and treatment					
Uncertainty regarding the use and function of special equipment					
That you need to be at several different locations at the same time to carry out important tasks					
Lack of integration of ICT systems that are important for the planning and execution of the work					
No list of available staff					

53:						
Below are some questions about work-related stress; we define work-related stress as "the feeling that the demands of work exceed your resources."						
How much work-related stress have you experienced concerning the following?						
	Not stressful					Very stressful
	1	2	3	4	5	6
The relationship to my leader						
My relationship with colleagues						
My relationship to employees I have a managerial responsibility for						
Workload						
Making mistakes						
Feeling undervalued						
Time pressure and deadlines						
Opportunities for promotion						
Size of salary						
The impact the work load has on my private life						
My spouse's attitude to my work						
The amount of travelling my work requires						
Taking work home						
The organisation's policy						
Lack of power and influence						
My values conflicting with those of the organisation						

Lack of cooperation and communication in my department						
Lack of clarity related to my work						
The leadership not understanding the challenges of my work						
Conflicts between my profession and other professions						
Introduction of new technology						
Lack of learning and development opportunities						
The organisation introducing new technical systems without providing adequate training						
The organisation using the wrong parameters to measure the quality of my work						

54: Please answer the following questions:					
	Never	Rarely	Sometimes	Fairly often	Very often
Is your immediate supervisor able to appreciate the value of your work and see the results of it?					
Are your colleagues able to appreciate the value of your work and see the results of it?					
Are you able to appreciate the value of your work from your leaders' perspective, and see the result of it?					

55: Please answer the following questions					
	Never	Rarely	Some times	Fairly often	Very often
Does your immediate supervisor express his/her opinion concerning your work?					
Does your immediate supervisor offer constructive advice?					
Do your colleagues express their opinions about your work?					
Do your colleagues offer constructive advice?					

56: In your department do you have the opportunity to discuss professional issues you think are important?	
No	
Yes, to some extent	
Yes, to a great extent	

Requirements of the job and coping

57: Requirements of the job	1 = Very rarely/never	2 = Fairly rarely	3 = Sometimes	4 = Fairly often	5 = Very often/always
Is it necessary to work at a fast pace?					
Do you have too much to do?					
Does your work require making quick decisions?					
Are your tasks too difficult for you?					
Does your work require making complicated decisions?					
Do you perform tasks that require more training to execute?					
Is the work challenging in a positive way?					
Are your daily tasks well planned?					

58: Coping with work tasks	1= Very rarely/never	2 Fairly rarely	3 Sometimes	4 Fairly often	5=Very often/always
Are you satisfied with the quality of your work?					
Are you satisfied with the amount of work you get done?					
Are you satisfied with the quality of your work?					
Are you satisfied with the amount of work you get done?					
Do you receive information about the quality of work that you perform?					
Can you quickly determine if the work you have done is good or bad?					

58A: Distribution of work tasks		
	Yes	No
Do you carry out duties that employees from other health care professions could have done just as well?		
Do you carry out tasks that mercantile staff could have done equally well?		
Are there tasks that other healthcare professionals carry out which you could have carried out equally well?		

Working environment

59: Participation	Strongly disagree				Strongly agree
In my department, we work together to influence the standards that constitute good work.					
In my department we often have the opportunity to influence goals or actions					
All employees in my department are involved in important decisions that affect them					
Employees have ample opportunities to influence how work is carried out.					

60: In your work, how often do you experience ethical or professional dilemmas related to:					
	Never	Rarely	Sometimes	Often	Always
Lack of qualified personnel?					
Lack of cooperation between departments?					
Lack of equipment?					
Lack of coordination of key tasks?					
Conflicts between professional and financial goals?					
Waiting lists and priorities?					

61: Negative behaviour in the workplace In the last six months how often have you experienced the following:	Never	Very rarely	Monthly	Weekly	Daily
Been exposed to excessive teasing or joking					
Been overlooked or excluded from the social community					
Hostility or silence in response to questions or attempts at discussions					
Persistent criticism of your work or efforts					
Been abused or subjected to spontaneous outbursts of anger					
That gossip or rumours about you have been spread around					
Inappropriate jokes at your expense made by people you don't get along with					
Received repeated reminders of errors or mistakes you've made					
That some people have criticized you on person grounds (e.g. your habits or background)					
Been deprived of responsibilities, or been set to carry out trivial or unpleasant tasks					
Neglect of your opinions and assessments					
Necessary information was withheld from you so that your job was made more difficult					

**62:
Bullying**

Bullying (such as harassment, ostracism, and hurtful teasing or joking) is a problem in some workplaces and for some employees. We would like to know if this occurs in your workplace. In order for us to call behaviour bullying, it must occur repeatedly over a period of time, and the person being bullied must be having difficulty in defending himself/herself. It is not considered bullying when two equally powerful people are in conflict with each other or when it only

concerns a single episode. Tick the answer that best fits your situation.

Have you been the victim of bullying in your workplace over the last 6 months?

	No	Rarely	Sometimes	Weekly	Daily

63:

Have you observed that others have been subjected to bullying in your workplace over the last 6 months?

	No	Rarely	Sometim es	Weekly	Daily

64:

Has the psychosocial work environment changed in the past year?

It has become worse	
It has remained the same	
It has become better	

65:

Have you participated in initiatives to improve the working environment and health in the past year?

Yes	
No	

66:

Assessment of your own health

	Poor	Satisfacto ry	Good	Very good	Excellent
Generally, would you say your health is					

67:

We assume that your ability to work at full capacity may be assessed using a scale of 0-10. How many points would you give your current work capacity? "0" means that you are not able to work at all at present.

0	1	2	3	4	5	6	7	8	9	10

68:

We assume that your ability to work at full capacity may be assessed using a scale of 0-10. How many points would you assess your future capacity to work (for the next 6 months)? "0" means that you are not able to work at all at present.

0	1	2	3	4	5	6	7	8	9	10

69:

How many days have you been absent from work due to personal illness in the last

12 months?	
Enter the number of days here:	

70: Over the last three months ...					
	Never	Rarely	Sometimes	Fairly often	Often
Have you been able to enjoy your daily activities?					
Have you felt that you are full of hope for the future?					

Leadership questions

82: Below are some statements that describe different aspects of being a leader. To what extent would you say you agree or disagree with the following statements in relation to your immediate supervisor?	1= Strongly disagree	2	3	4	5=Strongly agree
My leader creates a detailed plan of how an important task or project should be implemented					
My leader gives me support and encouragement when I have a difficult or stressful task					
My leader proposes new and creative ideas to improve products, services and processes					
My leader explains clearly what responsibilities I have with regard to a task or project					
My leader is behind me and supports me in difficult situations					
My leader proposes changes in a confident and optimistic way					
My leader explains clearly what results are expected of a task or project					
My leader gives me credit for helpful ideas and suggestions					
My leader takes a long-term perspective on the problems and opportunities facing the organisation					
My leader determines which resources are needed in a project					
My leader contacts me to get my reactions and proposals before decisions affecting me are taken					
My leader provides a clear and appealing vision of what the organisation can achieve or how it can develop					
My leader determines how work activities should be organised and coordinated to avoid delays, extra work and wastage of resources					
My leader gives me the opportunity to develop my abilities and show what I can do					
My leader negotiates in a convincing manner with people outside the department in order to get the necessary support to carry out major changes					
My leader checks that the progress of the work is on schedule					
My leader expresses confidence in my abilities to perform a difficult task					
My leader examines how other leaders solve the challenges of getting ideas for improvement in their own department					

83: Please consider the following statements					
	Incorrect	Mostly incorrect	Yes and no	Mostly correct	Fully correct
The leadership of the regional organisation (Helse Vest) has good knowledge of our hospital					
In my health organisation (Hospital pharmacies, Bergen, Forde, Fonna, Stavanger) the leadership prioritises correctly with regard to overall assessments					
The organisational leadership (Hospital pharmacies, Bergen, Førde, Fonna, Stavanger) has good knowledge about the situation in the departments					
The leadership of the individual departments have good knowledge of the work of the various departments					
In my department the leadership prioritizes correctly					
My immediate supervisor has good knowledge about my work					
The leadership places great emphasis on retaining employees					
The leadership places great emphasis on further developing its employees					
The leadership tries out new ways of organising work					

84: To what extent are the following statements about your workplace correct?											
	1 Wholly incorrect	2	3	4	5	6	7	8	9	10	11 Wholly correct
Expectations from the immediate supervisor are clear											
Work tasks are clearly defined											
The supervision and guidance of new employees is good											
I enjoy the pace of work											
The environment allows me to perform my job in line with my own professional assessments											
The organisation of work is good											
Our organisation has a clearly formulated equality policy											
There are good development opportunities for those who work here											
The overall leadership objectives (for the department) are clearly defined											

85: (Note: 85 b, c., d and e are only for those who responded "yes" to 85 a)		Yes	No
a)	Did you have an employee appraisal in 2012?		
b)	If "yes" to 85 a) did you receive feedback on the results of your work in the employee appraisal?		
c)	If yes to 85 a) did you get specific targets for the next period in the employee appraisal?		
d)	If yes to 85 a) was the work environment in your department discussed during the employee appraisal?		
e)	If yes to 85 a) Overall, did you benefit from the employee appraisal?		

86: An organisation can, more or less, be exposed to various events that affect employees and their everyday work. To what extent have the following events affected your organisation over the last 12 months?				
	Not at all	To a small extent	To some extent	To a great extent
Budget savings				
Technological changes				
Changes with respect to who performs which tasks				
Changes in leadership				
Reorganisation				
Establishment of new overall goals and strategies				
Changes in the composition of the workforce (more part-time employees, more personnel hired on contracts, etc.)				

Organisational questions

87: Learning environment					
	Strongly disagree	Partly disagree	Neither agree nor disagree	Partly agree	Strongly agree
In some of my work areas there is no time to keep up with developments					
There is no time to practice tasks that I need to carry out.					
I have the opportunity to carry out a fair number of tasks beyond my usual activities					
I don't get the time I need to learn new tasks					
I have the opportunity to learn about areas outside my field of work					

88: Below are statements that describe how employees relate to each other. Please indicate to what extent you think the statements describe your organisation.						
	Strongly disagree					Strongly agree
Employees in this organisation do not trust each other						
Employees in this organisation tend to be distant and condescending towards each other						
There is a lot of warmth in the relationship between management and employees in this organisation						
Employees in this organisation complain about things without doing anything						
Employees with different professional backgrounds work well together						

89: How would you characterize...										
	1 Strongly lacking	2	3	4	5	6	7	8	9	10 Completely adequate
The proportion of doctors in relation to the tasks of the department/unit?										
Nurse staffing in relation to the tasks of the department / unit?										
Staffing of professional health workers / auxiliary nurses / care workers in relation to the tasks of the department / unit?										
Staffing of other groups in relation to the tasks of the department / unit?										
The capacity of the administrative services of the department?										
The competence of the nurses in the department?										
The competence of auxiliary nurses / care workers in the department / unit?										
The expertise of the doctors in the department / unit?										

The competence of the administrative staff in the department / unit?										
The expertise of other groups in the department /unit?										

90: To what extent are the following statements correct?					
	Wholly incorrect	Mostly incorrect	Yes and no	Mostly correct	Wholly correct
My department/unit is well organised					
We have great capacity problems in our department/unit					
This department is built to meet the demands of the operations carried out here.					
There is equality between the sexes in the health organisation					

91: Are patients' problems not treated because					
	No	Perhaps a couple of times a year	Yes, once a month	Yes, once a week	Yes, almost daily
The necessary equipment is not available					
Proper expertise is not available					
The organisation of the work prevents it					
Tasks are poorly planned					
Staffing levels are too low					

92: Absence culture					
	Strongly disagree				Strongly agree
With us, it is expected that people come to work, no matter how they feel					
Here people stay at home with a clear conscience when they are sick					
With us it is OK to stay at home when you have a sick child to take care of					
With us there is too much unnecessary absence from work					

93: Which areas of health, environment and safety, and personnel policy do you think Helse Vest should prioritise in the next 12 months?	
Skills development / training	
Working time arrangements	
Salaries	
Staffing /use of resources	
Senior policy/life cycle oriented personnel policy	
Career development	
Communication	
Equality	

Co-determination	
Facilitation of psychosocial work environment	
Facilitation of physical work environment	
Delegation	
Leadership	
Measures to lower sickness absence, and improve health and well-being	
Interdisciplinary cooperation	
Other matters	

Thank you...

Survey_v-12 (For managers only)

Employee survey – HELSE VEST (Western Norway Regional Health Authority) 2014

Thank you for participating in this Helse Vest employee survey.

We are conducting this survey in order to enhance the quality of our services and to assist us in developing good working conditions for our employees.

The survey focuses in particular on *work planning, management and the use of ICT to support coordination and management*. The survey forms part of a larger research project that is examining Helse Vest's commitment to "employees, organisation and technology". This project is being run in cooperation with the University of Stavanger.

Helse Vest conducted a similar employee survey in 2003. That survey was conducted in cooperation with two organisations: the regional research foundation Rogaland Research (*Rogalandsforskning*, now known as IRIS); and the EU-funded research programme NEXT – Nurses' Early Exit Study, which conducted research in many European countries. Several of the questions from the 2003 survey are repeated in our current survey. The results of the 2003 survey have been extremely useful in our efforts to improve working conditions and the effectiveness of our organisation. Focus on management forms part of the national strategic plan "Health 2020" and is required under the Norwegian health authorities' terms of reference. The same applies to ICT-supported work planning.

The survey also contains questions about job satisfaction, the working environment, workplace bullying and organisational matters. It is important that all leaders and employees take the time to answer *all* of the questions.

Read each question carefully and try to choose the best answer from the list provided. There are no right or wrong answers.

The survey forms are confidential. The results will not be used in any way that will allow individual respondents to be identified. Managers at Helse Vest will not have access to the raw data generated by the survey. They will only be able to view group-level reports that will preserve the anonymity of individual respondents. The University of Stavanger is responsible for processing the survey results. Helse Vest IKT AS is responsible for sending out the forms and the actual survey process. All links between ID numbers and responses will be severed as soon as the survey has been completed. Managers at Helse Vest will not know whether any individual employee has or has not completed the survey. A decision not to participate in the survey will not have any consequences for the employee concerned. The same applies if an employee decides to withdraw from participation in the survey. In the interests of obtaining the most accurate survey results possible, we would nonetheless encourage all employees to take this opportunity to express their opinions about important aspects of their working environment.

If you have any technical questions about submitting your responses electronically, please contact:

- **Heidi Rovik, Helse Vest IKT AS, tel. XXX**

Please direct other queries to the project research team at the University of Stavanger:

- Professor Aslaug Mikkelsen, tel. 51 83 37 70. aslaug.mikkelsen@uis.no
- Associate Professor Thomas Laudal, tel. 51 83 37 22. thomas.laudal@uis.no
- PhD fellow/psychologist Gunhild Bjaalid, tel. 51 83 15 15. gunhild.bjaalid@uis.no

Thank you very much in advance for your assistance!

Stavanger, xx, January 2013

Background information:

1: Please indicate your employer:	
Sjukehusapoteka Vest (Western Norway Hospital Pharmacies)	
Helse Bergen	
Helse Fonna	
Helse Førde	
Helse Stavanger	

2: If you answered Sjukehusapoteka Vest, please indicate the hospital pharmacy you work in:	
Bergen Hospital Pharmacy	
Haugesund Hospital Pharmacy	
Førde Hospital Pharmacy	
Stavanger Hospital Pharmacy	

3: If you are employed by Helse Bergen, please indicate the unit you work in:	
Paediatric clinic	
Rehabilitation clinic	
Surgical services clinic	
Head and neck clinic	
Gynaecology clinic	
Neurology clinic	
Orthopaedic clinic	
Department for cancer treatment and medical physics	
Department of cardiology	
Dermatology department	
Department of surgery	
Department of pulmonary medicine	
Medical department	
Department of plastic surgery	
Department of radiology	
Department of rheumatology	
Department of occupational medicine	
Department of ophthalmology	
Operational services division	
Medical services division	
Psychiatric division	
Voss Hospital	
Administrative personnel	

4: If you are employed by Helse Førde, please indicate where you work:	
Førde Central Hospital (<i>sentralsjukehus</i>)	
Lærdal Hospital (<i>sjukehus</i>)	
Nordfjordeid Hospital (<i>sjukehus</i>)	
Florø Hospital (<i>sjukehus</i>)	
Centre for psychiatry	
Child and Adolescent Mental Health Services (BUP)	
Other	

5: If you are employed by Helse Førde, please indicate the department you work in:	
Department of ophthalmology, ENT or maxillofacial surgery, or general services for one of these departments	
Gynaecology clinic, paediatric department, child services department	

Department of surgery or orthopaedics	
Department of medicine, cancer outpatient clinic or dermatology outpatient clinic	
Department of neurology, rheumatology, or physiotherapy and rehabilitation (AFMR)	
AOIS, Emergency department	
Department of clinical chemistry, microbiology, radiology or pathology	
Psychiatric clinic	
IT or technical medical services department	
Operational services department	
KPS services, administration	

6:	
If you are employed by Helse Stavanger, please indicate the unit you work in:	
Rehabilitation clinic	
Psychiatric clinic	
Haematology and oncology clinic	
Gynaecology clinic	
Special medicine clinic	
Surgical/orthopaedic clinic	
Medical services clinic	
Medical clinic	
Emergency clinic	
Paediatric clinic	
Internal services	
Administrative personnel	

7:	
If you are employed by Helse Fonna, please indicate which unit you work in:	
Psychiatry	
Gynaecology/paediatrics	
Surgery	
Medicine	
Emergency room	
Internal services	
Patient services	
Administrative personnel	

8:	
Do you take on paid work in addition to your job with the health authority?	
Yes	
No	
If yes, please enter your average number of hours of additional paid work each week:	

9:	
Gender	
Female	
Male	

10:	30 or under	31 – 40	41 – 50	51 – 60	61 or over
Your current age:					

11:	
What is the highest level of education that you have completed?	
Lower secondary school	
Upper secondary school/vocational training	

University college/university, Bachelor's degree level	
University college/university, higher (Master's) degree level	
Doctorate	

Position of employment and working hours

13: What management level is your job at Helse Vest?	1	2	3	4
Please indicate the appropriate level:				

L-14: How many employees are you personally responsible for?	
Enter the number here:	

L-15:	YES	NO
Could you see yourself continuing in a management role in the future?		
Could you see yourself in a purely academic or clinical role in the future?		

17: What type of position did you have before you became a leader?	
Administration/leadership	
Patient-oriented position (social educator, dentist, speech therapist, social worker, teacher, milieu therapist, audiologist, medical secretary, therapist etc.)	
Doctor	
Psychologist	
Nurse/midwife	
Auxiliary nurse/care assistant	
Diagnostic services (bioengineer, radiographer, laboratory technician, radiotherapy technician)	
Pharmacy personnel	
Operational/technical personnel (including catering, cleaning or portering)	
Ambulance personnel	
Researcher	
External	
Other	

19: Do you work full- or part-time?	
Enter the percentage of full-time hours you work here:	

21A: Working hours per week	
On average, how many hours do you work per week?	

23A: How long have you held a managerial position (not including time spent training)?	
Enter number of years here:	

24: How many days have you spent on management development training during the past 12 months?	
Enter number of days here:	

24A: How many days have you spent on management development training during the past 12 months?	
Enter number of days here:	

24B:	
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Please indicate the year(s) in which you have participated in formal management training:	
2001	
2002	
2003	
2004	
2005	
2006	
2007	
2008	
2009	
2010	
2011	
2012	
2013	

24C: If you have participated in management training, what type(s) of training did this involve?	
Local initiatives for management development	
Management training provided by a former employer	
External management development programme/course	
Management training at a university/higher-education institution (e.g. an MBA)	
Other	

25: How many hours of ICT-related training have you undertaken during the past 12 months?
Enter number of hours here: <input type="text"/>

26: How often during the past year have you thought about...	Never	A few times during the year	A few times each month	A few times each week	Every day	N/A
Further training related to your job?						
Further training unrelated to your job?						
Transferring to an academic/clinical position?						
Leaving your job?						
Moving to a job in a completely different field?						
Transferring to a different department or unit?						
Looking for a job at a different hospital?						
Moving to a job in municipal health services?						
Moving into general practice?						
Becoming self-employed?						

27: Are you planning to leave your job within the coming 12 months?	
Yes	
No	

28: If you answered yes, please specify your main reason(s). You may select more
<input type="text"/>

than one answer.	
To undertake further training	
Family obligations	
Working conditions	
A desire for new challenges	
Pay	
Retirement	
Professional conflicts	
Other	

Planning of work

Helse Vest aims to adopt advanced working methods and integrate ICT systems in a new way. Below are some questions regarding this work:

29B: As leader, how much influence do you have on the development of work plans in your department/unit?	
None	
A little	
Some	
Considerable	
Not applicable	

31: Work planning	Yes	No	Partly
Have good processes been established for the development of work plans in your department/unit?			
Does the planning of work take into consideration the coordination of various professional groups?			
Are the work plans coordinated in relation to the needs of other professional groups?			
Are the work plans in your unit tailored to the needs of specific activities?			

36: Are you satisfied with your working hours:		
	Yes	No
With regard to your well-being at work?		
With regard to your private life?		

37:	No	Yes
Has your department/unit participated in the testing of new working hours arrangements?		

39:	No	Yes
Would you be interested in your department/unit participating in work planning that takes into account different levels of activity during the year?		

40:	3 mths	6 mths	12 mths	24 mths
What period of time should the work planning cover?				

41:			
Do you use GAT (Gatsoft) for the following tasks?	Yes	No	Don't know
To check when employees are going to be at work			
To check when employees will handover shifts			
Inquiries concerning compensatory time off, vacations, and leaves of absence with or without pay			

42:			
How do you plan the tasks for your department/unit?	Yes	No	Don't know
Using the task planning function in GAT			
Using Excel spreadsheet			
Using both the task planning function in GAT and Excel spreadsheet			
'Paper' solution (Word, notices and the like)			
Using verbal messages			
Delegate the responsibility to others			
The employees in my department/unit know about the tasks and we divide these when they come to work			

43A:			
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Concerning other ICT-systems apart from GAT:	Yes	No	Don't know
Do you use Outlook to provide information about shifts or tasks so that employees have access to this information when attending meetings, etc.?			
Do you use a smart-phone or other portable device to register/read about shifts or tasks that others have?			

44: How would you describe your level of competence concerning the following ICT systems?	No	Limited	Satisfactory	Good
- DIPS				
- Staff portal				
- Competence portal				
- WebCruiter				
- Learning portal				
- My GAT				
- GAT task planning				
- Part time				
- Additional employment				
- Travel expenses module				
- Focal point				
- Booking system (Visma/Merida)				
- Integrated management information/Management portal				
- ePhorte				

45:									
Please consider the following statements about ICT and work planning:									
I am open to using new functionality in ICT systems for planning activities, operations and staffing.									
(Strongly agree)	1	2	3	4	5	6	7	(Strongly disagree)	
Lack of coordination of information (which should be the same in different ICT systems) is a problem in your department/unit.									
(Strongly agree)	1	2	3	4	5	6	7	(Strongly disagree)	
I am aware that we can plan tasks in GAT, which will then be available in DIPS appointment diary, Outlook and task planners on the intranet.									
(Strongly agree)	1	2	3	4	5	6	7	(Strongly disagree)	
I am aware that work is being carried out on integrated processes whereby information in GAT will be made available in the operation planning system and the X-ray system.									
(Strongly agree)	1	2	3	4	5	6	7	(Strongly disagree)	
In my unit, we are not aware that it is possible to have the same information available across several different IT systems for planning activities, operations and staffing without entering it manually into each system.									
(Strongly agree)	1	2	3	4	5	6	7	(Strongly disagree)	
The employees in my department/unit look forward to more modern/better functionality in ICT systems for planning activities, operations and staffing.									
(Strongly agree)	1	2	3	4	5	6	7	(Strongly disagree)	
I am positive about spending time learning new features that will help ensure the necessary information is automatically available in ICT systems (the same information in GAT, DIPS, operations planning and the X-ray system).									
(Strongly agree)	1	2	3	4	5	6	7	(Strongly disagree)	

46:									
I think my staff are positive to learn about new functionality that would facilitate the same information being accessible in various ICT systems.									
(Strongly agree)	1	2	3	4	5	6	7	(Strongly disagree)	

Job satisfaction

47: How satisfied are you with:	Very dissatisfied	Dissatisfied	Satisfied	Very satisfied
Your job prospects?				
The physical working conditions?				
Opportunities to use your abilities?				
The psychological support at your workplace?				
The opportunities to give employees the support they need?				
The way work is planned?				
Your job as a whole – all things considered?				

48A: Are you concerned about:	Yes	No
Being unable to work?		
Being transferred to another job/ workplace?		
Not having sufficient competence for your role?		

49: Below is a set of statements about your relationship with your organisation. Please tick the box that is closest to your view.	To a very small extent	To a small extent	Sometimes	To some extent	To a great extent
I feel that I really belong to the organisation.					
The organisation is of great personal value to me.					
I am proud of being a part of the organisation.					
I do not feel like part of the "family" in the organisation.					
I feel that I really belong to my profession.					
My profession is of great personal value to me.					
I am proud of belonging to my profession.					
I don't feel like part of my profession.					
I feel there are clear expectations of me when it comes to performing my job.					

50: Positive challenges at work	To a very small extent	To a small extent	Sometimes	To some extent	To a great extent
Does your work require that you take initiative?					
Do you have the opportunity to learn new things through your work?					
Does your work require adaptability?					
Can you use your skills and expertise in your work?					
Is your work meaningful?					
Do you feel that the work you do is important?					
Do you feel motivated and involved in the work you do?					

51: Autonomy at work					
	Almost never	Rarely	Sometimes	Often	Always
Is your work varied?					
Do you have enough time to talk to staff?					
How often do you have too little time to complete all your tasks?					
Can you take a break at work whenever you want?					
Are you afraid of making mistakes?					
Do you have to work very quickly?					
Do you experience "downtime"?					

Is your workload unevenly distributed so that things pile up?					
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52: Below is a list of situations that may arise at work. Indicate how often you experience these situations.					
	Never	Sometim es	Often	Very often	Not applicabl e
Insufficient information from other health care staff regarding a patient's medical condition.					
Prescribing of wrong treatment for a patient.					
No doctor present at a medical emergency.					
Not enough staff to provide adequate services.					
Doubts concerning whether a patient or his/her relatives should be given information about the patient's medical condition and treatment.					
Uncertainty regarding the use and function of special equipment.					
That you need to be at several different locations at the same time to carry out important tasks.					
Lack of integration of ICT systems that are important for the planning and execution of work.					
No list of available staff.					

53: Below are some questions about work-related stress; we define work-related stress as "the feeling that the demands of work exceed your resources". How much work-related stress have you experienced concerning the following?							
	Not stressful	A little stressful	Some stress	Quite often stressful	Very often stressful	A lot of stress/ always stressful	Not applicab le
The relationship to my leader							
My relationship to colleagues							
My relationship to employees I have a managerial responsibility for							
Workload							
Making mistakes							
Feeling undervalued							
Time pressure and deadlines							
Opportunities for promotion							
Size of salary							
The impact my work load has on my private life							
My spouse's attitude to my work							
The amount of travelling my work requires							
Taking work home							
The organisation's policy							
Lack of power and influence							
My values conflicting with those of the organisation							
Lack of cooperation and communication in my department							
Lack of clarity related to my work							
The leadership not understanding the challenges of my work							
Conflicts between my profession and other professions							
Introduction of new technology							
Lack of learning and development							

opportunities							
The organisation introducing new technical systems without providing adequate training							
The organisation using the wrong parameters to measure the quality of my work							

54: Please answer the following questions:					
	Never	Rarely	Sometimes	Fairly often	Very often
Is your immediate supervisor able to appreciate the value of your work and see the results of it?					
Are your colleagues able to appreciate the value of your work and see the results of it?					
Are you able to appreciate the value of your work from your leaders' perspective, and see the result of it?					

55: Please answer the following questions:					
	Never	Rarely	Someti mes	Fairly often	Very often
Does your immediate supervisor express his/her opinion concerning your work?					
Does your immediate supervisor offer constructive advice?					
Do your colleagues express their opinions about your work?					
Do your colleagues offer constructive advice?					

56: In your department, have you provided the opportunity to discuss professional issues you think are important?	
No	
Yes, to some extent	
Yes, to a great extent	

Requirements of the job and coping

57: Requirements of the job	1 = Very rarely/never	2 = Fairly rarely	3 = Sometimes	4 = Fairly often	5 = Very often/always
Do you have to work at a fast pace?					
Do you have too much to do?					
Does the work require that you make quick decisions?					
Are your tasks too difficult for you?					
Does your work require making complicated decisions?					
Do you perform tasks that require more training to execute?					
Is the work challenging in a positive way?					
Are your daily tasks well planned?					

58: Coping with work tasks	1 = Very rarely/never	2 = Fairly rarely	3 = Sometimes	4 = Fairly often	5 = Very often/always
Are you satisfied with the quality of your work?					
Are you satisfied with the amount of work you get done?					
Are you satisfied with your ability to solve problems that arise at work?					
Are you satisfied with your ability to maintain good relationships with your colleagues?					
Do you receive information about the quality of work that you perform?					
Can you quickly determine if the work you have done is good or bad?					

Working environment

59: Participation	Strongly disagree				Strongly agree
In my department, we work together to influence the standards that constitute good work.					
In my department, we often have the opportunity to influence goals or actions.					
All employees in my department are involved in important decisions that affect them.					
Employees have ample opportunities to influence how work is carried out.					

60: In your work, how often do you experience ethical or professional dilemmas related to:						
	Never	Rarely	Sometimes	Often	Always	Not applicable
Lack of qualified personnel?						
Lack of cooperation between departments?						
Lack of equipment?						
Lack of coordination of key tasks?						
Conflicts between professional and financial goals?						
Waiting lists and priorities?						

61: Negative behaviour in the workplace In the last six months, how often have you experienced the following:	Never	Very rarely	Monthly	Weekly	Daily
Been exposed to excessive teasing or joking					
Been overlooked or excluded from the social community					
Hostility or silence in response to questions or attempts at discussions					
Persistent criticism of your work or efforts					
Been verbally abused or subjected to spontaneous outbursts of anger					
That gossip or rumours about you have been spread around					
Inappropriate jokes at your expense made by people you don't get along with					
Received repeated reminders of errors or mistakes you've made					
That some people have criticized you on personal grounds (e.g. your habits or background)					
Been deprived of responsibilities, or been set to carry out trivial or unpleasant tasks					
Neglect of your opinions and assessments					
Necessary information was withheld from you so that your job was made more difficult					

62: Bullying <i>Bullying (such as harassment, ostracism, and hurtful teasing or joking) is a problem in some workplaces and for some employees. We would like to know if this occurs in your workplace. In order for us to call behaviour bullying, it must occur repeatedly over a period of time, and the person being bullied must be having difficulty in defending himself/herself. It is not considered bullying when two equally powerful people are in conflict with each other or when it only concerns a single episode. Tick the answer that best fits your situation.</i>					
Have you been the victim of bullying in your workplace over the last 6 months?					
	No	Rarely	Sometimes	Weekly	Daily

63: Have you observed that others have been subjected to bullying in your workplace over the last 6 months?					
	No	Rarely	Sometimes	Weekly	Daily

64: Has the psychosocial work environment changed in the past year?	
It has become worse	
It has remained the same	
It has become better	

65: Have you participated in initiatives to improve the working environment and health in the past year?	
Yes	
No	

66: Assessment of your own health					
	Poor	Satisfactory	Good	Very good	Excellent
Generally, would you say your health is:					

67: We assume that your ability to work at full capacity may be assessed using a scale of 0 - 10. How many points would you give your current work capacity? "0" means that you are not able to work at all at present.										
0	1	2	3	4	5	6	7	8	9	10

68: We assume that your ability to work at full capacity may be assessed using a scale of 0 - 10. How many points would you assess your future capacity to work (for the next 6 months)? "0" means that you are not able to work at all at present.										
0	1	2	3	4	5	6	7	8	9	10

69: How many days have you been absent from work due to personal illness in the last 12 months?	
Note the number of days:	

69A: How many times during the past 12 months have you gone to work even if for health reasons you considered staying home?	
Note the number of days:	

70: Over the last three months...					
	Never	Rarely	Sometimes	Fairly often	Often
Have you been able to enjoy your daily activities?					
Have you felt that you are full of hope for the future?					

Leadership questions

71: Please consider the following statements:					
	Incorrect	Mostly incorrect	Yes and no	Mostly correct	Fully correct
All new managers are given leadership training upon appointment.					
I receive good individual support in my role as leader.					
The health organisation prioritizes leadership development.					

75: Below are some statements that describe different characteristics of being a leader. To what extent would you say you agree or disagree that the following statements apply to you as a leader?	1 = Strongly disagree	2	3	4	5 = Strongly agree
I make a detailed plan of how an important task or project is be implemented.					
I give my colleagues support and encouragement when they have a difficult or stressful task.					
I suggest new and creative ideas to improve products, services and processes.					
I explain clearly the responsibilities my colleagues have regarding a task or project.					
I stand behind my colleagues and support them in difficult situations.					
I suggest changes in a confident and optimistic way.					
I explain clearly what results are expected of my colleagues when I give them a task or project.					
I give my colleagues credit for helpful ideas and suggestions.					
I have a long-term perspective on the problems and opportunities facing the organisation.					
I determine which resources are needed for a project.					
I keep close contact with my colleagues to get their reactions and suggestions before decisions affecting them are taken.					
I provide a clear and appealing vision of what the organisation can achieve or how it can develop.					
I decide how work activities are organised and coordinated to avoid delays, extra work and wastage of resources.					
I give my colleagues the opportunity to develop their skills and show what they can do.					
I negotiate in a convincing way with people outside the department to get the necessary support to carry out major changes.					
I check that the progress of the work is on schedule.					
I express my confidence in colleagues' abilities to perform a difficult task.					
I examine how other leaders solve challenges to get ideas for improvement in my own department.					
I communicate decisions that have been approved in a constructive way, even if I disagree with the decision.					

76. Below are some statements about employees you are personally responsible for. We ask that you take a position on each of the statements. The employees....	1 = Completely disagree	2	3	4	5 = Completely agree	Cannot answer
Share ideas with each other.						
Show creativity at work when the opportunity						

arises.						
Develop good plans for implementation of new ideas.						
Often have new and innovative ideas.						
Propose new ways of working on tasks.						
Use their own time to help others who have problems.						
Mediate between others who disagree.						
Are a stabilizing force when conflicts arise.						
Take leadership when the situation requires it.						

77: Below we have listed a number of conflict situations leaders may be involved in. How often do you experience the following situations at work?	1 = Never	2	3	4	5 = All the time	Cannot answer
The leaders and employees you are responsible for make different demands of you.						
Patients and their families have needs and demands which your employees are unwilling to accommodate.						
The top management have requirements of operations that your employees resist.						
The job makes demands of you that affect your marriage/relationship.						
The focus on daily tasks leads to the neglect of long-term tasks.						
The different professional competencies among your employees makes it hard to get them to work as a team.						
You defend your organisation against criticism from patients, families, media, etc., even when you agree with the criticism.						
You have to implement decisions that conflict with your own professional viewpoints.						
You sometimes have to make decisions that are contrary to your ethics and values.						
The job makes demands of you that jeopardise your ability to maintain good relationships.						
Politicians make decisions that make it difficult for the organisation to work efficiently.						
You believe you should go to work even when you feel ill.						

78: There are many things to take into consideration in a leadership role. How much do you agree that you take into account the following in your daily work as a leader?	1 = Strongly disagree	2	3	4	5 = Strongly agree	Cannot answer
Events in the political environment						
Patients/family members/users						
Competitors						
What I want to achieve in terms of goals and strategies						
The organisation's partners						
The owners' goals concerning the organisation						
My leaders						
The organisation's financial situation						
The organisation's working environment						

The organisation's reputation in the media						
Unwritten rules of how to do things in the organisation						
Other departments in the organisation						
Formal work instructions and procedures						
Input from our own staff						
Well-being of employees						
Shop stewards and unions						
Consultants and the organisation's advisors						
My marriage/relationship						
My future career						
My professional reputation						
My personal reputation in the media						

79: We have listed a number of strategies below you might follow to deal with conflict situations. How often, do you as leader, follow these strategies?	1 = Never	2	3	4	5= All the time	Cannot answer
When you disagree with the employees you are responsible for, do you propose that you work together to find solutions?						
When you disagree with the employees you are responsible for, do you try to take into account the concerns of all parties to find a common solution?						
In situations where you disagree with the employees you are responsible for, do you insist that your view is accepted?						
In situations where you disagree with the employees you are responsible for, do you hold fast to your own views ?						
Do you avoid discussions with employees you are responsible for when confrontations are likely?						
If you disagree with the employees you are responsible for, do you keep your views to yourself?						
If you disagree with the employees you are responsible for, do you propose compromises to reach a middle ground solution?						
If you disagree with the employees you are responsible for, do you enter into a compromise in order to reach an acceptable solution?						
When you disagree with people you are responsible for, do you adapt to their wishes?						
When you disagree with people you are responsible for, do you yield to their suggestions?						

80: The same strategies for conflict resolution may also be followed by others in the organisation. How often do you think that the employees you are responsible for use the following strategies?	1 = Never	2	3	4	5 =All the time	Cannot answer
When the employees you are responsible for disagree with you, do they suggest that you work together to find solutions?						
When the employees you are responsible for						

disagree with you, do they try to take into account the concerns of both parties to find a common solution?						
In situations where employees you are responsible for disagree with you, do they insist that their position is accepted?						
In situations where employees you are responsible for disagree with you, do they hold fast to their own views?						
Do your subordinates avoid discussions with you when confrontations are likely?						
When the employees you are responsible for disagree with you, do they keep their views to themselves?						
When the employees you are responsible for disagree with you, do they suggest a compromise to reach a middle ground solution?						
When the employees you are responsible for disagree with you, do they enter into a compromise in order to reach an acceptable solution?						
When the employees you are responsible for disagree with you, do they adapt to your wishes?						
When the employees you are responsible for disagree with you, do they yield to your suggestions?						

81: Below are some statements about your colleagues. Please indicate on a scale of 1 - 5, where 1 = strongly disagree and 5 = strongly agree						
My colleagues:	1 Strongly disagree	2	3	4	5 Strongly agree	Cannot answer
Use their own time to help others who have problems at work.						
Are willing to use their own time to recruit and train new employees.						
Before carrying out initiatives will inform those that are likely to be affected.						
Take steps to avoid causing problems for others.						
Encourage others when they're down.						
Mediate among others who disagree.						
Are a stabilizing force when conflicts arise.						

82: Below are some statements that describe various aspects of being a leader. To what extent would you say you agree or disagree with the following statements in relation to your immediate supervisor?	1 = Strongly disagree	2	3	4	5 = Strongly agree
My leader creates a detailed plan of how an important task or project should be implemented.					
My leader gives me support and encouragement when I have a difficult or stressful task.					
My leader proposes new and creative ideas to improve products, services and processes.					

My leader explains clearly what responsibilities I have with regard to a task or project.					
My leader is behind me and supports me in difficult situations.					
My leader proposes changes in a confident and optimistic way.					
My leader explains clearly what results are expected of a task or project.					
My leader gives me credit for helpful ideas and suggestions.					
My leader takes a long-term perspective on the problems and opportunities facing the organisation.					
My leader determines which resources are needed in a project.					
My leader contacts me to get my reactions and proposals before decisions affecting me are taken.					
My leader provides a clear and appealing vision of what the organisation can achieve or how it can develop.					
My leader determines how work activities should be organised and coordinated to avoid delays, extra work and wastage of resources.					
My leader gives me the opportunity to develop my abilities and show what I can do.					
My leader negotiates in a convincing manner with people outside the department in order to get the necessary support to carry out major changes.					
My leader checks that the progress of the work is on schedule.					
My leader expresses confidence in my abilities to perform a difficult task.					
My leader examines how other leaders solve the challenges of getting ideas for improvement in their own department.					

83:					
Please consider the following statements:					
	Incorrect	Mostly incorrect	Yes and no	Mostly correct	Fully correct
The leadership of the regional organisation (Helse Vest) has good knowledge of our hospital.					
In my health organisation, the leadership prioritizes correctly with regard to overall assessments.					
The organisational leadership (Hospital pharmacies, Bergen, Førde, Fonna, Stavanger) has good knowledge about the situation in the departments.					
The leadership has good knowledge about the work of the various departments.					
In my department the leadership prioritizes correctly.					
My immediate supervisor has good knowledge about my work.					
The leadership places great					

emphasis on retaining their employees.					
The leadership places great emphasis on further developing its employees.					
The leadership tries out new ways of organising work.					

84:											
To what extent are the following statements about your workplace correct?											
	1 Wholly incorrect	2	3	4	5	6	7	8	9	10	11 Wholly correct
Expectations from the immediate supervisor are clear.											
Work tasks are clearly defined.											
The supervision and guidance of new employees is good.											
I enjoy the pace of work.											
The environment allows me to perform my job in line with my own professional assessments.											
The organisation of work is good.											
My health organisation has a clearly formulated equality policy.											
There are good development opportunities for those who work here.											
The overall leadership objectives (for the department) are clearly defined.											

85:		Yes	No
(Note: 85 b, c, d and e are only for those who responded "yes" to 85 a)			
a)	Did you have an employee appraisal in 2013?		
b)	If yes to 85 a, did you receive feedback on the results of your work in the employee appraisal?		
c)	If yes to 85 a, did you get specific targets for the next period in the employee appraisal?		
d)	If yes to 85 a, was the work environment in your department discussed during the employee appraisal?		
e)	If yes to 85 a: overall, did you benefit from the employee appraisal?		

86:				
An organisation can, more or less, be exposed to various events that affect employees and their everyday work. To what extent have the following events affected your organisation over the last 12 months?				
	Not at all	To a small extent	To some extent	To a great extent
Budget savings				
Technological changes				
Changes with respect to who performs which tasks				
Changes in leadership				
Reorganisation				
Establishment of new overall goals and strategies				
Changes in the composition of the workforce (more part-time employees, more personnel hired on contracts, etc.)				

Organisational questions

87: Learning environment					
	Strongly disagree	Partly disagree	Neither agree nor disagree	Partly agree	Strongly agree
In some of my work areas, there is no time to keep up with developments.					
There is no time to practice tasks that I need to carry out.					
I have the opportunity to carry out a fair number of tasks beyond my usual activities.					
I don't get the time I need to learn new tasks.					
I have the opportunity to learn about areas outside my field of work.					

88: Below are statements that describe how employees relate to each other. Please indicate to what extent you think the statements describe your organisation.						
	Strongly disagree					Strongly agree
Employees in this organisation do not trust each other.						
Employees in this organisation tend to be distant and condescending towards each other.						
There is a lot of warmth in the relationship between management and employees in this organisation.						
Employees in this organisation complain about things without doing anything.						
Employees with different professional backgrounds work well together.						

89: How would you characterize...												
	1 Strongly lacking	2	3	4	5	6	7	8	9	10 Completely adequate	Not applicable	
The proportion of doctors in relation to the tasks of the department/unit?												
Nurse staffing in relation to the tasks of the department/unit?												
Staffing of professional health workers/ auxiliary nurses/care workers in relation to the tasks of the department/unit?												
Staffing of other groups in relation to the tasks of the department/unit?												
The capacity of the administrative services of the department?												
The competence of the nurses in the department?												
The competence of professional health workers/auxiliary nurses/care workers in the department/unit?												
The expertise of the doctors in the department/unit?												
The competence of the administrative staff in the department/unit?												
The expertise of other groups in the department/unit?												

90: To what extent are the following statements correct?					
	Wholly incorrect	Mostly incorrect	Yes and no	Mostly correct	Wholly correct
My department/unit is well organised.					
We have great capacity problems in our department/unit.					
This department is built to meet the demands of the operations carried out here.					
There is equality between the sexes in the health organisation.					

91: Are patients' problems not treated because:						
	No	Perhaps a couple of times a year	Yes, once a month	Yes, once a week	Yes, almost daily	Not applicable
The necessary equipment is not available?						
Proper expertise is not available?						
The organisation of the work prevents it?						
Tasks are poorly planned?						
Staffing levels are too low/staff have too little time?						

92: Absence culture					
	Strongly disagree				Strongly agree
With us, it is expected that people come to work, no matter how they feel.					
Here, people stay at home with a clear conscience when they are sick.					
With us, it is OK to stay at home when you have a sick child to take care of.					
With us, there is too much unnecessary absence from work.					

93: Which areas of health, environment and safety, and personnel policy do you think Helse Vest should prioritise in the next 12 months?	
Skills development/training	
Working time arrangements	
Salaries	
Staffing/use of resources	
Senior policy/life cycle oriented personnel policy	
Career development	
Communication	
Equality	
Co-determination	
Facilitation of psychosocial work environment	
Facilitation of physical work environment	
Delegation	
Leadership	
Measures to lower sickness absence, and improve health and well-being	

Interdisciplinary cooperation	
OD (organizational development) measures	
Other matters	

THANK YOU FOR PARTICIPATING IN THE EMPLOYEE SURVEY!