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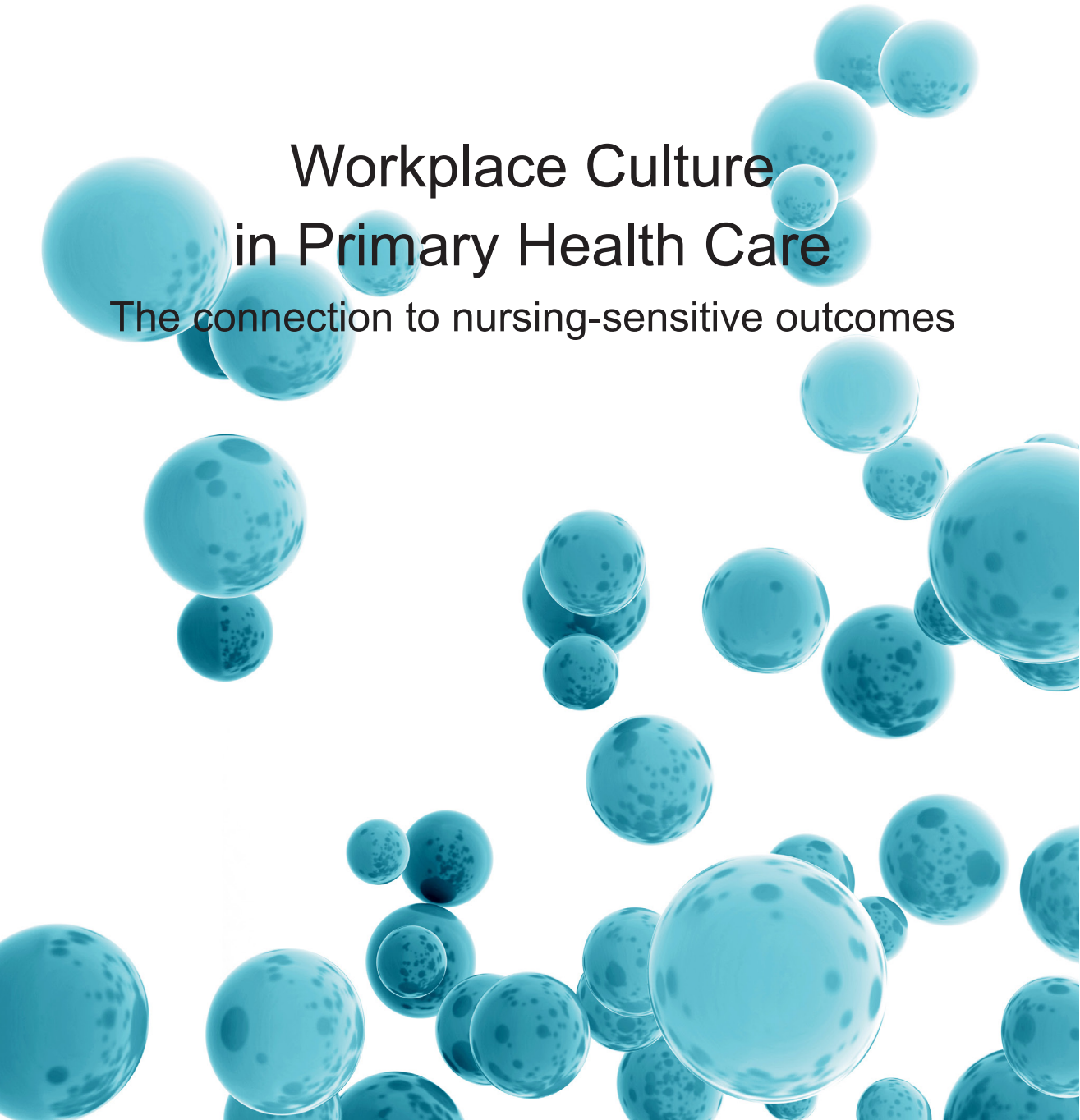
NINA HAHTELA

Workplace Culture in Primary Health Care

The connection to nursing-sensitive outcomes



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Workplace Culture in Primary Health Care

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ACADEMIC DISSERTATION
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the Board of the School of Health Sciences of the University of Tampere,
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UNIVERSITY OF TAMPERE

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To Jussi, Henri and Kalle

Abstract

The purpose of this study was to describe nursing personnel's perceptions of workplace culture in primary health care and to explore nursing-sensitive, patient, nurse and organizational outcomes. In addition, the study looked to explain the connection between these nursing-sensitive outcomes and the workplace culture, and eventually create a model that reflected this connection in primary health care. Nursing-sensitive outcomes are those that are relevant, based on nurses' scope and domain of practice, and for which there is empirical evidence linking nursing inputs and interventions to the outcomes.

In phase I, a cross sectional questionnaire survey was used to describe the perception of workplace culture of nursing personnel in 22 primary health care in-patient units. A total of 220 nursing personnel (108 licensed practical nurses, 95 registered nurses and 17 nurse managers) were involved. In phase II, a cross sectional questionnaire survey was used to collect patient data (53 patients), and register indicators which concerned patient, nurse and organizational outcomes as provided by 21 nurse managers. In phase III, the connections between workplace culture and patient, nurse and organizational outcomes from 21 units in primary health care were examined over a period of one month. In phase IV, all of the collated data was used to create a model of the connection between the workplace culture and the nursing-sensitive outcomes in primary health care. The data were statistically analyzed in all phases.

Overall, the nursing personnel were uncertain whether or not their workplace culture was positive or negative. Workplace culture showed several connections between patient, nurse and unit-level predictors, and furthermore with patient, nurse and organizational outcomes. The workplace culture showed connections with a patient-level predictor (patient educational level), nurse-level predictors (profession, age and shift work), and furthermore with unit-level predictors (in-patient daily charge, number of beds, open vacancies and length of service of nurse manager). A lower educational level of patients' was related to a lower

perception of workplace culture among nursing personnel. The perception varied between occupations, personnel age and work shifts. Negative perception of workplace culture was related to higher in-patient daily charge, number of beds, number of open vacancies and length of service of nurse manager.

From a patient point of view, the negative perception of workplace culture was connected with increased amount of complications, adverse events, but also with better self-care. Favourable perception was connected with person centred care. From the perspective of nurse outcomes, workplace culture was seen to be both negatively and positively connected with sickness absences, overtime work and occupational injuries. With organizational outcomes, workplace culture connections were demonstrated both negatively and positively with the use of supplemental nursing staff. A favourable perception of workplace culture was connected with a shorter length of patient stay and a lower bed occupancy rate.

The workplace culture plays a significantly important role in nursing-sensitive outcomes, and therefore it is essential that a unit's workplace culture is systematically evaluated and improved. Furthermore, the study points out the need for systematic follow-up of unit-level indicators in order to develop both the care and workplace culture within primary health care.

Key words: workplace culture, primary health care, nursing-sensitive outcomes.

Tiivistelmä

Tutkimuksen tarkoituksena oli kuvata hoitohenkilöstön käsitystä työpaikkakulttuuristaan, sekä kuvata tutkimukseen osallistuneiden työyhteisöjen potilas-, hoitaja- ja organisaatiotuloksia perusterveydenhuollon akuuttivuodeosastoilla. Lisäksi tutkimuksen tarkoituksena oli kuvata työpaikkakulttuurin yhteyttä hoitotyösensitiivisiin tuloksiin perusterveydenhuollossa, ja lopuksi muodostaa malli työpaikkakulttuurin ja hoitotyösensitiivisten tulosten yhteyksistä perusterveydenhuollossa. Hoitotyösensitiiviset tulokset ovat niitä hoitotyölle ominaisia hoitotoimintoja ja interventioita, joiden yhteydestä tuloksiin on empiiristä näyttöä.

Tutkimuksen ensimmäisessä vaiheessa tarkasteltiin, miten hoitohenkilöstö kuvaa työpaikkakulttuuriaan perusterveydenhuollon 22 akuuttivuodeosastolla. 220 vastaajasta 108 oli lähihoitajia, 95 sairaanhoitajia ja 17 osastonhoitajia. Tutkimuksen toisessa vaiheessa 53 potilasta vastasi potilaskyselyihin, lisäksi 21 osastonhoitajaa vastasi kyselyyn, jolla tarkasteltiin yksikön potilaita, hoitajia sekä organisaatiota koskevia tulostunnuslukuja. Kolmannessa vaiheessa tutkittiin sekä potilas-, hoitaja- ja organisaatiotulosten yhteyttä työpaikkakulttuuriin. Aineisto sisälsi 21 osaston tiedot yhden kuukauden ajalta. Neljännessä vaiheessa luotiin malli työpaikkakulttuurin ja hoitotyösensitiivisten tulosten välisistä yhteyksistä. Tässä analyysissä käytettiin koko aineistoa. Kaikki aineistot analysoitiin tilastollisilla menetelmillä.

Hoitohenkilöstö ei osannut sanoa oliko yksikön työpaikkakulttuuri positiivinen vai negatiivinen. Työpaikkakulttuurilla oli useita yhteyksiä potilas-, hoitaja- ja työyksikkötason muuttujiin sekä potilas-, hoitaja- ja organisaatiotuloksiin. Potilas-muuttujista potilaiden koulutustaso, hoitaja-muuttujista hoitajien ammattinimike, ikä ja työaikamuoto sekä työyksikkö-muuttujista potilasmaksut, potilaspaikkojen määrä, täyttämättömien vakanssien määrä ja osastonhoitajan työkokemus olivat yhteydessä työpaikkakulttuuriin. Potilaiden alhainen koulutustaso oli yhteydessä hoitohenkilökunnan heikompaan arvioon työpaikkakulttuurista.

Hoitohenkilökunnan arvio työpaikkakulttuurista vaihteli ammatti- ja ikäryhmittäin sekä hoitohenkilöstön työvuorojen välillä. Heikompi arvio työpaikkakulttuurista oli yhteydessä korkeampiin potilasmaksuihin ja potilasmääriin sekä täyttämättömiin vakansseihin ja osastonhoitajan pitkään työkokemukseen.

Potilastulosten osalta hoitohenkilökunnan antama heikompi arvio työyksikön kulttuurista oli yhteydessä potilaiden lisääntyneisiin komplikaatioihin ja haittatapahtumiin, mutta myös parempaan itsehoitoon. Myönteisellä työpaikkakulttuurilla oli yhteys yksilökeskeiseen hoitoon. Hoitajatulosten osalta yksikön työpaikkakulttuurilla oli sekä negatiivisia että positiivisia yhteyksiä hoitohenkilökunnan lyhyisiin sairauspoissaoloihin, ylityöhön ja työtapaturmiin. Organisaatiotulosten näkökulmasta työpaikkakulttuurilla oli sekä negatiivisia että positiivisia yhteyksiä sijaisten käyttöön. Myönteisellä työpaikkakulttuurilla oli yhteys lyhyempiin hoitoaikoihin sekä matalampaan osaston käyttöasteeseen.

Työpaikkakulttuurilla on merkittävä vaikutus hoitotyösensitiivisiin tuloksiin. On tärkeää, että yksiköt arvioivat ja kehittävät työpaikkakulttuuriaan systemaattisesti. Lisäksi tämä tutkimus osoittaa, että perusterveydenhuollon kehittämiseksi tarvitaan systemaattista työyksikkökohtaista tunnuslukujen seurantaa.

Asiasanat: työpaikkakulttuuri, perusterveydenhuolto, hoitotyösensitiiviset tulokset.

Contents

Abstract
Tiivistelmä
List of Tables
List of Figures
List of Appendices
List of Abbreviations
List of Original Publications

1 Introduction 17
2 Overview of the literature 20
2.1 Primary health care 22
2.2 Workplace culture 23
2.3 Nursing-sensitive outcomes 25
2.4 Connection of workplace culture to nursing-sensitive outcomes 28
2.5 Patient Care Delivery Model 28
2.6 Conclusions from the literature 29
3 The purpose of the study 31
4 Materials and Methods 32
4.1 Study design 32
4.2 Phases of the study 34
4.3 Setting, sampling and participants 36
4.4 Instruments 39
4.5 Data collection 42
4.6 Data analysis 42
4.7 Ethical considerations 43

5 Results 45
5.1 Workplace culture in municipal primary health care 45
5.2 The connection between workplace culture and outcomes 46
5.2.1 The connection between workplace culture and patient outcomes 46
5.2.2 The connection between workplace culture and nurse outcomes 46
5.2.3 The connection between workplace culture and organizational outcomes 47
5.3 A conceptual model of the connections between workplace culture and nursing-sensitive outcomes 47
6 Discussion 50
6.1 Validity and reliability of the study 50
6.1.1 Validity and reliability of study design 50
6.1.2 Validity and reliability of the instruments 52
6.2 Discussion of the main findings 54
6.3 Recommendations for management 57
6.4 Recommendations for practice 58
6.5 Recommendations for education 58
6.6 Recommendations for future research 58
7 Conclusions 60
Acknowledgements 61
References 63
Original Publications 77

List of Tables

Table 1. The limiters used in database searches.

Table 2. Different terms related to workplace culture.

Table 3. Conceptual definitions of nursing-sensitive outcomes.

Table 4. Examples of the Nursing Minimum Data sets used in the USA.

Table 5. Phases of the study.

Table 6. The demographic profile of nurse participants.

Table 7. The demographic profile of patients.

Table 8. Instruments employed in this study.

List of Figures

Figure 1. Patient Care Delivery Model – conceptual framework.

Figure 2. Study design with detailed items of inputs and throughputs adapted from the Patient Care Delivery Model.

Figure 3. Conceptual model of the influence of workplace culture on nursing-sensitive outcomes.

List of Appendices

Appendix 1. Studies related to the characteristics of workplace culture and outcomes.

Appendix 2. Correlation coefficient between 19 constructs of workplace culture.

List of Abbreviations

ANOVA = One-way Analysis of Variance
CINAHL = Cumulative Index to Nursing and Allied Health Literature
LOS = Length of stay
LPN = Licensed Practical Nurse
n = Number of cases
NCI = Nursing Context Index
NHPPD = Nursing Hours per Patient Day
ns = not significant
p = p-value
PCMD = Patient Care Delivery Model
RN = Registered Nurse
r = Spearman Correlation
SD = Standard Deviation
SPSS = Statistical Package for the Social Sciences
WHO = World Health Organization
WMA = World Medical Association

List of Original Publications

This thesis is based on the following articles, which are referred to by their Roman numerals I-IV.

I Hahtela N, Paavilainen E, McCormack B, Helminen M, Slater P & Suominen T 2015. Nurses' perceptions of workplace culture in primary health care in Finland. International Nursing Review. DOI: 10.1111/inr.12207

II Hahtela N, McCormack B, Doran D, Paavilainen E, Helminen M, Slater P & Suominen T 2015. The connections between workplace culture and patient outcomes. Submitted.

III Hahtela N, Paavilainen E, McCormack B, Slater P, Helminen M & Suominen T 2014. Influence of workplace culture on nursing-sensitive nurse outcomes in municipal primary health care. Journal of Nursing Management. doi: 10.1111/jonm.12237.

IV Hahtela N, McCormack B, Paavilainen E, Helminen M, Slater P & Suominen T 2015. The Relationship of Workplace Culture With Nursing-Sensitive Organizational Factors. Journal of Nursing Administration, 45 (7/8), 370-376.

The articles are reprinted with the kind permissions of the copyright holders. Article II is not included in the electronic version of the summary, as it has not yet been published. The summary contains some unpublished results.

1 Introduction

The current study of workplace culture belongs to the context of nursing management. During the 21st century, the attention given to the workplace culture in health care has mainly focused on organizational or corporate culture (Mannion et al. 2005), instead of unit level culture (Manley et al. 2011; Patterson et al. 2011; Kirwan et al. 2013.) However, workplace culture has greater effect on patients and staff than organizational or corporate culture, and therefore it plays an important role when it comes to the outcomes of nursing. According to Manley et al. (2011, p. 4.):

> "workplace culture is the most immediate culture experienced and/or perceived by staff, patients, users and other key stakeholders. It is the culture that impacts directly on the delivery of care. It both influences and is influenced by the organizational and corporate cultures with which it interfaces as well as other idiocultures through staff relationships and movement."

Workplace cultures interact and affect each other, and have a reciprocal affect on organizational culture. Subcultures however originate directly from the organizational culture. Therefore the term idioculture may be seen as more suitable than the term subculture (Bolan & Bolan 1994). The culture of a workplace in health care can have either positive (Manley et al. 2011; Kane et al. 2007; Rathert & May 2007), or negative (Francis 2010) influences on patients, employers and the organization. Its significant influence has been recognized in health care (Wilson et al. 2005), but the evidence which supports it has not yet been effectively brought forward (McCormack et al. 2011).

From a patient point of view, it essential to recognize that unit level workplace culture impacts significantly on patients, care delivery and safety issues (Kramer et al. 2009; Manley et al. 2011). Positive characteristics of the nurses' work environment and adequate staffing have been related to better patient outcomes (Lankshear et al. 2005; Kane et al. 2007; Aiken et al. 2008; Aiken et al. 2012). The development of

effective workplace cultures has been linked with person-centredness and also with evidence based practice (Manley 2004).

In a time when a shortage of nurses and high levels of turnover are to be seen (and have been predicted to increase in coming years: International Council of Nurses 2004, Sermeus & Bruyneel 2010, Currie & Carr-Hill 2012), there is a need for recognizing workplace culture and its prospective consequences for nursing personnel (Manley et al. 2011). Evidence suggests that workplace culture has a significant effect on e.g. the behaviour of individuals and teams (Kramer et al. 2009), practice development and innovation (Apekey et al. 2011; Mannion et al. 2005), job satisfaction (Aiken et al. 2012; Van den Heede et al. 2013), and evidently the success of the organization (Kramer et al. 2009). Negative or poor working environments may cause nurses to leave the profession (Buchan & Aiken 2008).

The increased need for health care organizations to recruit and retain nurses has been noted at both international (Heinen et al. 2013; Van den Heede et al. 2013) and national (Meretoja & Koponen 2008; Koponen et al. 2012) levels. Several social and health care programs and legislation reforms in Finland have set a focus on the development of primary health care. The essential aim of the National Development Program for Social Welfare and Health Care (Kaste) was a strengthening of primary health care (Ministry of Social Affairs and Health 2008; 2012). The aim of the Effective Health Centre Action Plan (Ministry of Social Affairs and Health 2010) was also to develop practices, administration, management of health care centres, as well as developing education and research in this field (Ministry of Social Affairs and Health 2010, Vallimies-Patomäki 2010). The Health Care Act (1326/2010) also looked to strengthen primary health care, by promoting welfare and health and also the availability and effectiveness of health care services. Its aim was to ensure client centredness and intensify the co-operation between primary health care and specialized health care (Ministry of Social Affairs and Health 2011).

To be able to strengthen client centredness and the attractiveness of primary health care for both clients and employers, there is a need for research that focuses on the workplace cultures of primary health care units. Prospective changes in social and health care (such as the social welfare and health care reforms which are taking place in Finland) will

reshape the organizational structures of primary health care, but the importance of workplace culture with relation to nursing-sensitive, patient and organizational outcomes will remain or even increase.

2 Overview of the literature

The literature review of this study is based of four concepts. First, the concept of *primary health care* is defined. Secondly, the term *workplace culture* is discussed and viewed in connection with primary health care. Thirdly the concept of *nursing-sensitive outcomes* is defined and viewed in connection with primary health care. Fourthly, the connection of workplace culture to nursing-sensitive outcomes is discussed. This culminates in the concept of a patient care delivery model which is lastly described.

The literature review for the dissertation drew from two databases covering articles published from January 2010 through May 2015: CINAHL (Cumulative Index to Nursing & Allied Health Literature) and Medline (Ovid). Cinahl Headings, MeSH terms (Medical Subject Heading) and free-text searches were used. To gain as comprehensive literature search as possible, a grey literature search was completed using a manual search for published articles references, dissertations and webpages that connected to the subject topic (Conn et al 2003).

The search covering primary health care was conducted using the term "primary health care" and "primary healthcare". To produce the term for primary health care, both terms were combined using the Boolean operator "OR".

The searches covering culture aspects were conducted using the following terms: "workplace culture", "organizational culture", "organisational culture", "corporate culture", "work environment", "unit* culture" and "ward* culture". To produce the term for culture, the above-mentioned terms were combined using the Boolean operator "OR". Later in the work, the term "workplace culture" is used to describe the phenomenon.

In the search covering nursing-sensitive outcomes, the following terms were used: "nurse-sensitive patient outcome*", "nurse-sensitive nurse outcome*", "nurse-sensitive organizational outcome*", nurse-sensitive organisational outcome*", "nursing-sensitive patient outcome*", "nursing-sensitive nurse outcome*", "nursing-sensitive organizational outcome*"

"nursing-sensitive organizational outcome*", "patient* outcome*", "nurs* outcome*", "unit* outcome*", "system* outcome*", "organi* outcome*" and "nurs* sensitive outcome*". To produce the term for nursing-sensitive outcomes, all of the above-mentioned terms were combined using the Boolean operator "OR".

To search for the connections with primary health care and workplace culture, the terms were combined using the Boolean operator "AND". In the search for nursing-sensitive outcomes connected to primary health care, and to discover the connection between workplace culture and nursing-sensitive outcomes, the terms were combined using the Boolean operator "AND". The limiters used in the database search are described in Table 1.

Table 1. The limiters used in database search

Database	Limiters
CINAHL	Abstract Available; Published Date: 20100101-20150531; Peer Reviewed; Research Article; Exclude MEDLINE records; Language: English, Finnish; Age Groups: All Adult
Medline	Abstract Available; Published Date: 20100101-20150531: Peer Reviewed; Research Article; Language English, Finnish; All Adult: 19+years

After removing duplicates, the selected search terms together with the selection process described in Table 1 identified a total of 745 articles dealing with primary health care, 673 articles with workplace culture, and 4761 articles with nursing-sensitive outcomes. After searching for connections between primary health care and workplace culture, 14 studies was identified but all of the articles were rejected after inspecting the abstract as the content was beside the point. 65 studies were identified describing the connection between primary health care and nursing-sensitive outcomes, but only one study (Tsang et al. 2012) was included after abstract inspection. 89 studies were identified to describe the connection between workplace culture and nursing-sensitive outcomes, and after abstract inspection 13 studies were included. The selected studies are described in Appendix 1.

2.1 Primary health care

Primary health care has been defined in various ways. Kringos et al. (2015) suggest that the concept of primary health care should be separated from primary care, as having a wider and more political meaning. They also define primary care as an organizational concept. Boeckxstaens and De Graaf's (2011) definition of primary health care is consistent with that of Kringos et al. (2015), defining that "primary health care comprised practices of care that are provided in the community, are easily accessible, comprehensive and person-oriented."

In Finland, the Ministry of Social Affairs and Health (1972; 2011) define primary health care as national health care that focuses on the health promotion of individuals, population and the environment, the prevention of diseases and accidents, and the hospital care of individuals. The development of primary health care (and especially health care centres) reaffirms the overall concept of health care, and there are several on going initiatives to improve health care in general (Mäntyranta et al. 2011). In Finland (and exceptional to e.g. other EU countries), health care centres are operational environments that are responsible for all of the municipalities' primary health care demands (Mattila 2011). Based on this, health care centres cannot only be described as organizations, as basically they represent the whole health care services of the municipalities in which they are located (Sannisto 2011).

In Finland, in-patient units in primary health care play an important role in providing in-patient care for patients. In 2013, approximately 149 000 patients were cared for in in-patient units in primary health care, although the number of care days has decreased by approximately 10% between 2003 and 2013. Most of the patients cared for were older people. The average age was 76 years, and three quarters of the in-patient care days involved patients of up to 75 years of age (National Institute for Health and Welfare 2014). In 2010, the average period of treatment in inpatient units was 25 days). A decision for a referral for longer-term inpatient care is usually made after three months have elapsed (National Institute for Health and Welfare 2012). Patients are usually admitted to in-patient primary health care from hospitals' specialized healthcare units, emergency departments, or from other institutions on a physician's referral.

2.2 Workplace culture

The terms 'workplace culture', 'organizational culture' and 'corporate culture' are used in the literature (Drennan 1992, Hemmelgarn et al. 2006, Schein 2010, Manley et al. 2013). The different terms related to workplace culture are described in Table 2. The main difference of these term is of their impact. In this study, the term workplace is defined as the most immediate culture that patients and staff experience on a daily basis (Manley et al. 2011). The term workplace culture has been used as the study was conducted at the unit level, however, according to Aiken et al. (2011b), due to the multidimensional aspects of the workplace, the work environment is difficult to measure.

Table 2. Different terms related to workplace culture

Concept	Definition	Author(s), year
Workplace culture	"How things are done around here"	Drennan 1992, p. 3, Hemmelgarn et al. 2006, p. 75
	"The most immediate culture experienced and/or perceived by staff, patients, users and other key stakeholders. This is the culture that impacts directly on the delivery of care. It both influences and is influenced by the organizational and corporate cultures with which it interfaces as well as other idiocultures through staff relationships and movement."	Manley et al. 2011, p. 4
Organizational culture	"Culture is both a here and now dynamic phenomenon and a coercive background structure that influences us in a multiple ways. Culture is constantly re-enacted and reacted by our interactions with the others and shaped by our own behaviour."	Schein 2010, p. 3
	"A pattern of shared basic assumptions learned by group as it solves its problems of external adaptation and internal integration"	Schein 2010, p. 18
Corporate culture	"The distinctive ethos of an organization that influences the level of formality, loyalty, and general behaviour of its employees"	Collins English Dictionary, 2012

Workplace culture has been paid less attention than organizational or corporate culture (Patterson et al. 2011). Manley et al. (2011, 2013) locate workplace culture at a micro-systems level, and at the same level where most care is delivered. Workplace culture includes shared norms, values, expectations, assumptions and beliefs (Gershon et al. 2004, Kramer & Schmalenberg 2004, Smith 2008, Malloy et al. 2009, Schein 2010, Manley et al. 2013), and can be seen as a "normative glue" (Kramer &

Schmalenberg 2004). In this study the workplace culture was looked from stress, satisfaction and practice environment view points as they have an impact on culture (Slater et al. 2009).

In the literature, organizational climate is sometimes used as synonym for organizational culture, however it is conceptually different as it refers to organizational features that can be more easily measured and changed (Gershon et al. 2004, Stone et al. 2005.)

An effective work environment has been positively linked with autonomy (McCormack & Slater 2009), the willingness and ability to learn (Manley et al. 2011), clinical performance (McCormack & Slater 2009, Brazil et al. 2010), job satisfaction (Aiken et al. 2011b, Tsai 2011), staff well-being (Manley et al. 2011), professional and career development (McCormack & Slater 2009), commitment (Manley et al. 2011), teamwork and co-operation (McCormack & Slater 2009, Manley et al. 2011, Person et al. 2013), patient outcomes (Aiken et al. 2011a, Manley et al. 2011, Trinkoff et al. 2011) and patient safety (Armellino et al. 2010, Huang et al. 2010). In this study the workplace culture is seen to be a part of the work environment. Work environment is the context where patients receive care and where staff work. Within that there is a particular culture, which is the workplace culture.

The literature search in this study did not identify any relevant studies published between 2010-2015 that covered the connection between workplace culture and primary health care. This result might be due to the search terms employed, but it cannot be ignored that primary health care has been less studied than e.g. specialist health care areas. Thus, the connections between workplace culture and primary health care should be studied to gain a wider knowledge of this phenomenon.

2.3 Nursing-sensitive outcomes

Some conceptual definitions of nursing-sensitive outcomes are presented in Table 3. In this study, the nursing-sensitive outcomes are defined based on the definition provided by Doran (2003; 2011), as: “those that are relevant, based on nurses’ scope and domain of practice, and for which there is empirical evidence linking nursing inputs and interventions to the outcomes”.

Table 3. Conceptual definitions of nursing-sensitive outcomes.

Concept	Definition	Author(s), year
Nursing-sensitive outcome	"A measurable change in a client's health status related to the receipt of nursing care."	Marek, 1989
Nursing-sensitive outcome	"Those outcomes that nursing inputs and interventions most influence."	Montalvo, 2007
Nursing-sensitive outcome	"Those that are relevant, based on nurses' scope and domain of practice, and for which there is empirical evidence linking nursing inputs and interventions to the outcomes."	Doran, 2003; 2011

Nursing-sensitive outcomes information is expanding (Doran 2011), and similarly as health care service systems change, the need for effective and appropriate care increases, and the retention of an adequate nursing workforce is in jeopardy (IOM 2010, Porter 2010, Kvist et al. 2013). The most studied nursing-sensitive indicators are falls, falls with injury, nosocomial infections, pressure ulcer prevalence, hospital-acquired pressure ulcer prevalence, restraint prevalence, nursing care hours per patient day, skill mix, RN education /certification, RN satisfaction, voluntary nurse turnover, and nurse vacancy rate (Montalvo 2007). In this study the selected nursing-sensitive indicators were patient gender, educational level, age, marital status, assessment of self-care and client-centred care, complications, adverse events, nurse' profession, nurse' age, nurse' shift work, short-term sickness absence times, the total days of short-term sickness absence, overtime work, occupational injuries, in-patient daily charge, number of beds, number of open vacancies, the length of service of the nurse manager, length of stay, bed occupancy rate, and use of supplemental nurses.

Nursing data is needed to ensure there is a balance between the competing demands of access, cost and quality (Doran 2010). According to Goossen et al. (1998), many healthcare databases miss nursing-sensitive outcome data, even though the need for outcome data to measure nurses' contribution to patient outcomes has been identified (Canadian Nurses Association 2000). To make nurses contributions visible, many Nursing Minimum Data Sets (NMDSs) have been developed (Montalvo 2007, Doran et al. 2011). A few of the different Nursing

Minimum Data sets used in the USA and their abbreviations are listed in Table 4.

Table 4. Examples of Nursing Minimum Data sets used in the USA.

Database	Abbreviation
Nursing Management Minimum Data Set	NMMDS
The Perioperative Nursing Data Set	-
Nursing Outcomes Databases	-
The National Database of Quality Indicators	NDNQI
California Nurse Outcomes Coalition Database Project	CalNOC
The Veterans Affairs Nursing Outcomes Database	VANOD
The Military Nursing Outcome Database	MilNOD

(Kleib et al. 2011)

Several other countries have also developed their own version of NMDSs, at least in Canada (Hannah et al. 2009), Belgium (Sermeus et al. 2006), Netherlands (Goossen et al. 2006), Switzerland (Junger et al. 2004), Finland (Tanttu & Ikonen 2006), Ireland (Butler et al. 2006), Iceland (Gudmundsdottir et al. 2004), Australia (Goosen et al. 2006), Brazil (Ribeiro & Marin 2006), and in Thailand (Phuphaibul 2006). Altough the minimum data sets have been developed in many countries it can be agrued that they should be utilized in a wider extent.

In this study, the literature search revealed one relevant article published between 2010-2015 to cover the connection between primary health care and nursing-sensitive outcomes. The literature review of Tsang et al. (2011) revealed a connection between adverse events and patients' deaths in primary health care. The study stated that the majority of severe adverse events might be avoidable, and also that routinely collected data concerning adverse events is only used to a limited extent. The findings of a study by Tsang (2011) highlight that more research related to primary health care and nursing-sensitive outcomes needs to be undertaken.

2.4 Connection of workplace culture to nursing-sensitive outcomes

The connection between workplace culture and nursing-sensitive outcomes has been noted, but needs to be brought forward more effectively (McCormack et al. 2011). The literature search of this study identified 13 empirical studies connected to workplace culture and nursing-sensitive outcomes (Bae et al. 2010a, Bae et al. 2010b, Flynn et al. 2010, Lake et al. 2010, Rochefort & Clarke 2010, Aiken et al. 2011a, Aiken et al. 2011b, Goode et al. 2011, Aiken et al. 2013, Hickey et al. 2013, Watts et al. 2013, Yang et al. 2013, Lindqvist et al. 2015). The connections between workplace culture and nursing-sensitive outcomes were reveiled from patient point of view (falls, pressure ulcers, quality of care, odds of death, failure to rescue, ability of self-care, infections, postoperative sepsis, postoperative metabolic derangements) and from nurse point of view (burnout, job satisfaction, wellbeing). These studies are reviewed in Appendix 1. The reviewed studies were published between 2010-2015. All studies were quantitative (n=13), and sample sizes varied from 129 to 98,116 nurses. Most of the reviewed studies were conducted in hospitals (n=12) and one in a nursing home (n=1). While the current studies focused mostly on the hospital or organizational level, further research is needed to better understand the connections between the unit level workplace culture and nursing-sensitive outcomes.

2.5 Patient Care Delivery Model

In this study, the Patient Care Delivery Model (PCDM) has been used to explore the connection between workplace culture and nursing-sensitive outcomes. The PCDM emphasizes that input and throughput influence outputs both independently and dynamically (Meyer et al. 2009, O'Brien-Pallas et al. 2004; 2010). Input factors include the patients, nurses and the system characteristics as well as system unit behaviours. Throughputs are often seen as patient care delivery subsystem and intermediate outputs that are influenced by nursing interventions, work environments and the environmental complexity. The outputs are described as patient, nurse and system outcomes (O'Brien-Pallas et al. 2010).

The model has been previously used in hospital (Meyer et al. 2009) and community care (O'Brien-Pallas et al. 2001, 2002) settings.

2.6 Conclusions from the literature

In earlier research, the importance of the characteristics of workplace culture on nursing-sensitive outcomes has been recognized, but to a lesser degree than at the organizational or corporate level. As patients and staff experience the immediate culture of the workplace, more unit level studies are needed to emphasize and aid our understanding of the influence of workplace culture.

Previously, nursing-sensitive outcome studies have mainly been conducted in specialized hospital settings. Therefore there is also a need to explore the influence of workplace culture in primary health care, especially in in-patient units that employ many nurses. It can be assumed that nurses (as the largest occupational group) have the most influence on unit's workplace culture. The other occupational groups e.g. doctors and therapists e.g. psychologists and physiotherapists are in a minority, and often tend to work in several different units.

Existing research demonstrates the link between workplace culture and outcomes for patients, nurses and the organization. Due to the complexity of workplace culture and its connections to outcomes, there is a need for better knowledge of the connections between outcomes and also the factors that have an influence on these outcomes.

In the study the Patient Care Delivery Model (PCDM), the input characteristics include patient characteristics (i.e. gender, age, family support, education level, income), nurse characteristics (i.e. profession, age, experience), and unit characteristics (i.e. in-patient daily charge, number of beds, number of open vacancies and the length of service of the nurse manager). Throughputs are considered as services (i.e. nursing interventions). Outputs are often defined patient, nurse and system outcomes (Meyer et al. 2009) (Figure 1).

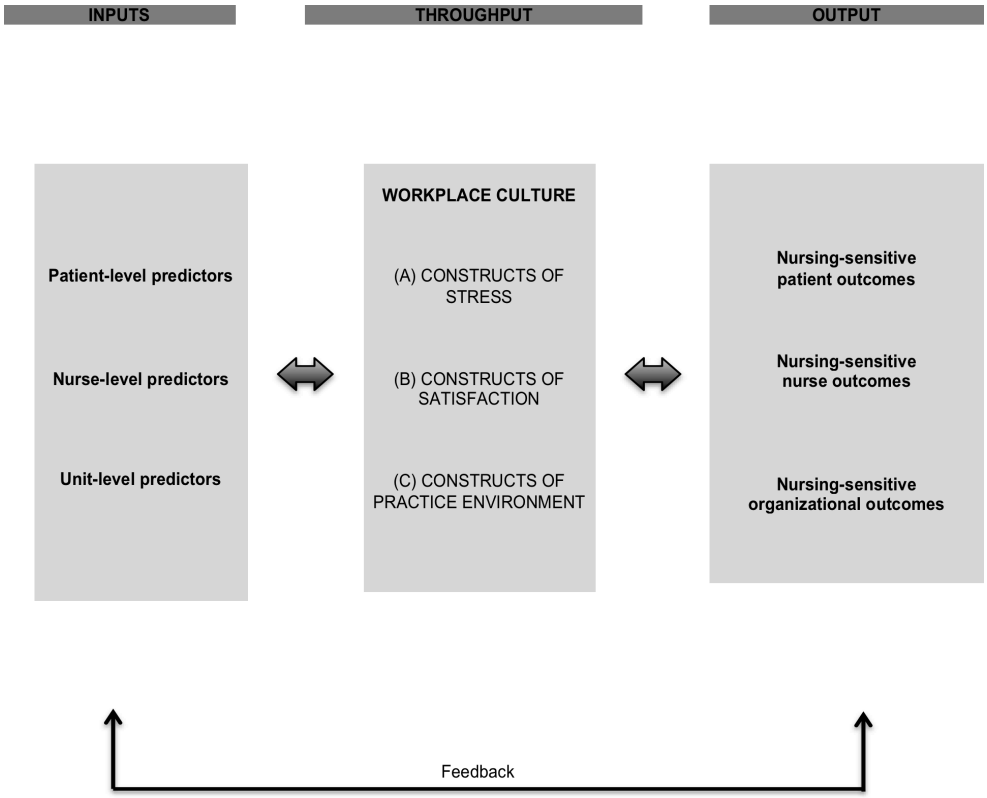

Figure 1. Patient care delivery model Adapted from O'Brien-Pallas et al. (2004) and the NursingContext Index of Slater & McCormack (2006).

In conclusion, there is a lack of research about unit level workplace culture, and especially about the connection between workplace culture and nursing-sensitive outcomes in primary health care.

3 The purpose of the study

The purpose of this four-phase study was to describe nursing personnel's perceptions of workplace culture in primary health care, and to explore the nursing-sensitive patient, nurse and organizational outcomes of those workplaces. In addition, the study looked to explain the relationship between the workplace culture and nursing-sensitive patient, nurse and organizational outcomes, and eventually to create a model of the connections between workplace culture and nursing-sensitive outcomes in primary health care.

Two main research questions were:

1) How do nursing personnel assess their workplace culture in acute in-patient primary health care? (Article I)
2) How is the workplace culture connected to selected nursing-sensitive patient, nurse and organizational outcomes in primary health care? (Articles II, III, IV, & Summary)

4 Materials and Methods

This chapter describes the study design, phases of the study, setting, sampling, participants, instruments, data collection, data analysis, and the ethical considerations related to the study.

4.1 Study design

The Patient Care Delivery Model (PCDM) (O'Brien-Pallas et al. 2004) was used to demonstrate the relationship between workplace culture and nursing-sensitive outcomes. The PCDM emphasizes the fact that inputs, throughputs and outcomes have an interdependent influence on each other (O'Brien-Pallas et al. 2004; 2010). Figure 2 provides more detailed information of studied inputs, throughputs and outputs. The inputs represent the patient, nurse and unit-level predictors that interact with throughputs that represent 19 constructs of workplace culture (Slater & McCormack 2006), and which produce outputs representing nursing-sensitive patient, nurse and organizational outcomes.

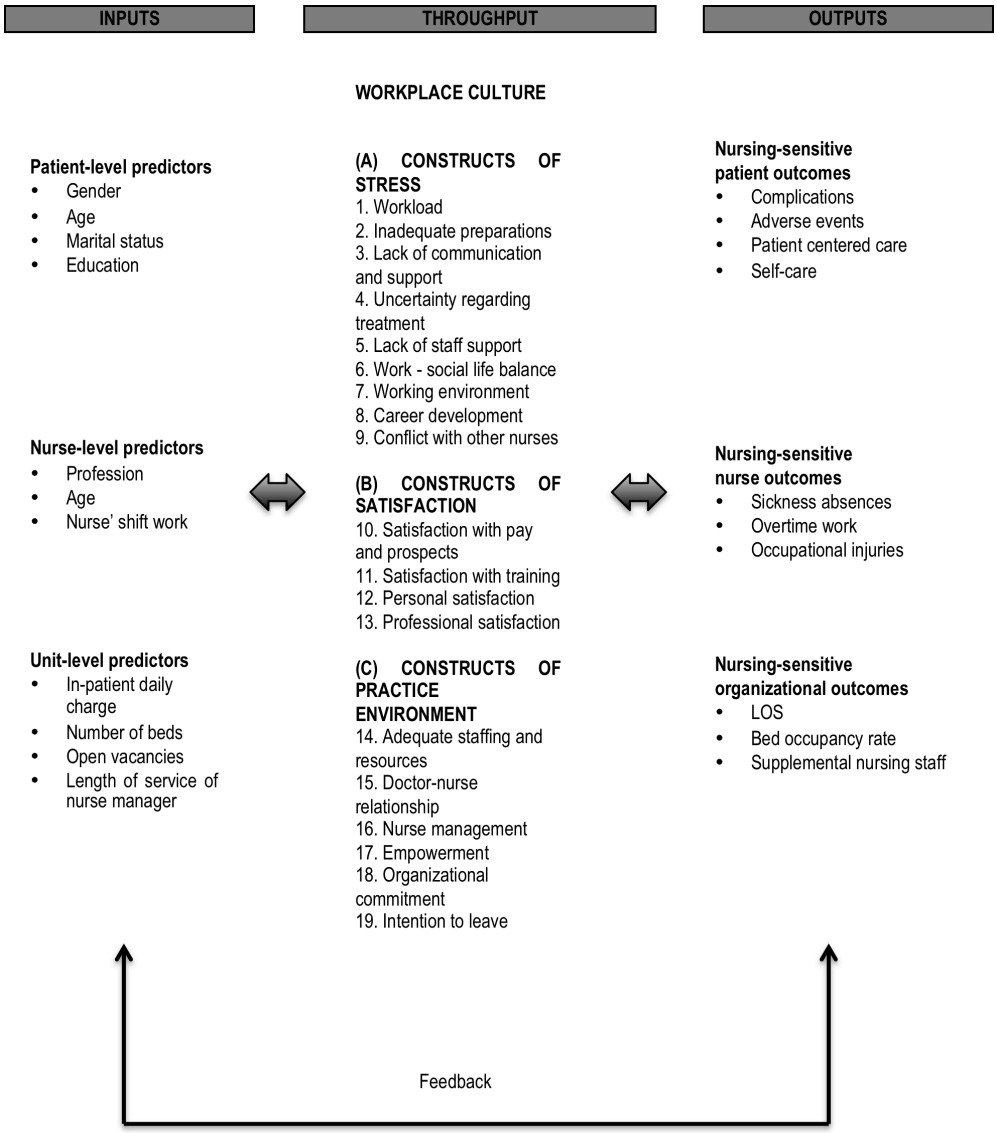

Figure 2. Study design with detailed items of inputs, throughputs and outputs adapted from the Patient Care Delivery Model and the Nursing Context Index.

4.2 Phases of the study

The study was conducted in four phases in acute in-patient units in primary health care (Table 5).

Table 5. Phases of the study

Research purpose of phases	Questions of the phases	Instrument	Data	Articles
To describe nurses' perceptions of workplace culture in municipal health care **(Phase I)**	What is nursing culture like in municipal health care?	Nursing Context Index (NCI)	220 nursing personnel (108 licensed practical nurses, 95 registered nurses and 17 nurse managers) from 22 acute care in-patient units	Nurses' perceptions of workplace culture in municipal health care (Article I)
To describe nursing-sensitive patient, nurse and organization outcomes **(Phase II)**	What are selected nursing-sensitive patient, nurse and organizational outcomes like?	The Therapeutic Self-Care Discharge Questionnaire, the Client-Centred Care Questionnaire and a questionnaire for nurse managers to measure patient outcomes	53 patients and registered indicators of patients from 14 in-patient acute care units	
		A questionnaire for nurse managers to measure nurse outcomes.	Registered indicators of nurses from 21 in-patient acute care units	
		A questionnaire for nurse managers to measure organizational outcomes.	Registered indicators of organization from 21 in-patient acute care units	
To explain the relationship between the workplace culture and the nursing-sensitive patient, nurse and organization outcomes **(Phase III)**	Is there a ~~-~~connection ~~of~~ between workplace culture ~~on~~ and nursing-sensitive patient, nurse and organization outcomes?	The Therapeutic Self-Care discharge questionnaire, the Client-Centred Care Questionnaire and register indicators of patients	53 patients, 142 nursing personnel and 14 nurse managers from 14 acute care in-patient units	The influence of workplace culture and patient outcomes (Article II)
		Nursing Context Index (NCI) and registered indicators of nurses	21 nurse managers and 203 nursing personnel from 21 in-patient acute care units	Influence of workplace culture on nursing-sensitive nurse outcomes in municipal primary health care (Article III)
		Nursing Context Index (NCI) and registered indicators of organizations	21 nurse managers and 203 nursing personnel from 21 in-patient acute care units	Workplace culture: does it have an influence on nursing-sensitive organizational outcomes? (Article IV)
To create a model of the connection between the workplace culture and the nursing-sensitive outcomes **(Phase IV)**	How are the workplace culture and the nursing-sensitive outcomes connected?	All data	All data	Summary

4.3 Setting, sampling and participants

In this study, a cross-sectional study design was used in all study phases, with different samples. Convenience sampling was used to collect data from acute in-patient units in primary health care in Finland, and enabled to study of issues that were not explored earlier (Grove et al. 2013).

Phase I

The study was conducted in 22 primary health care units. At the moment these type of in-patient units are a part of the public primary health care system arranged usually by the community. The average duration of primary care provision in Finland is a few weeks and a decision for referral for longer-term inpatient care is usually made after three months have elapsed (National Institute for Health and Welfare 2012). A total of 220 out of 340 nursing personnel and nurse managers responded to the NCI survey questionnaire, yielding a 65% response rate (Article I). From now on in this summary, the term nurse is used to define nursing personnel. Reflecting the instructions of journals, the term 'ward head nurse' was used to define the term nurse manager. The demographic profile of participants is presented in Table 6.

Table 6. The demographic profile of nurse participants.

	n	%
Gender		
Female	217	98.6
Male	3	1.4
Profession		
Licensed practical nurse	108	49.1
Registered nurse	95	43.2
Nurse manager	17	7.7
Age		
18-25 years	18	8.1
26-35 years	39	17.7
36-45 years	54	24.5
46-55 years	68	30.9
55+	41	18.6
Shift		
Full-time/rotating roster	168	76.3
Full-time/set days or nights	25	11.3
Part-time/rotating roster	25	11.3
Part-time/set days or night	2	0.9
Total	220	100.0

Phase II

In this phase the study was carried out only in 14 different in-patient units in primary health care, since the data was not available from the rest of the units. A total of 53 patients responded to patient survey questionnaires (Therapeutic Self-Care – Discharge and Client-Centred Care). Nurses or nurse managers were mandated to invite those patients who were thought to be able to participate to complete the patient questionnaires. It was briefed in the introduction letter that a family member or significant other was allowed to assist if required. The study also collected statistical information gathered by nurse managers (n=14) over a one-month period concerning patients (complications and adverse events) from those units from which patients responded (Article II).

Slightly over half of the responding patients were male (50.9%). Most (90.6%) were 50 years or older, and a little over half of these (56.6%) were 70 years or older. A comprehensive school education level was recorded by over half of the patients (58%). The demographic profile of the responding patients is presented in Table 7.

Table 7. The demographic profile of patients (n=53).

	n	%
Gender		
Female	26	49.1
Male	27	50.9
Age		
30-49 years	5	9.4
50-69 years	18	34.0
70-89 years	27	50.9
90 years -	3	5.7
Main reason for admission		
Dizziness	8	15.1
Surgery after-care	7	13.2
Fracture	7	13.2
Lung disease	6	11.3
Rehabilitation	4	7.5
Wound care	4	7.5
Other reasons	12	32.3
Marital Status		
Single	11	20.8
Married	13	24.5
Divorced	12	22.6
Widow	13	24.5
Missing	4	7.5
Education		
Comprehensive school	31	58.0
Upper secondary education	13	24.5
College	1	1.9
Bachelor degree	3	5.7
Master's degree	2	3.8
Missing	3	5.7

Nurse managers (n=21) were enquired to generate the statistical information over a month period concerning nurses in their units (short-term sickness absence times and the total days of short-term sickness absence, overtime worked and occupational injuries) (Article III), and organizational statistics (length of stay, bed occupancy rate, use of supplemental nurses, in-patient daily charge, number of beds, number of open vacancies and the length of service of the nurse manager) (Article IV). Statistical information drawn from 21 units was included in the final sample.

Phase III

The responses of Phase I and II were combined to examine the relationship between patient (Article II), nurse (Article III) and organizational (Article IV) outcomes in primary health care.

Phase IV

All of the data gathered from acute in-patient units in primary health care from Phases I, II and III were used to create a model of the connection between the workplace culture and nursing-sensitive outcomes.

4.4 Instruments

Four different instruments were employed in different phases of the study (Table 8). One of the instruments was developed specifically for this study. The remaining instruments are not presented in this study, as they are copyright protected.

Table 8. Instruments employed in this study.

Phase	Name of the instrument	Purpose	Subscales & number of items	Scale
I, II, III, IV	Nursing Context Index	To measure nurses' perception of workplace culture	Demographics (5 items) Nurse stress (36 items) Job satisfaction (18 items) Practice environment (24 items)	Multiple choice and seven-point Likert scale
II, III, IV	Therapeutic Self-Care (discharge)	To measure patients' self-care ability	Taking medication (3 items) Symptom management (2 items) Performing daily activities (2 items) Managing changes in condition (1 item)	Three point Likert scale
II,III,IV	Client-Centred Care	To measure patients'perceived client centressness	Client Centredessness (15 items)	Five point Likert scale
II, III, IV	Unit's Outcome Assessment*	To measure outcomes	Patient outcomes (19 items) Nurse outcomes (4 items) Organizational outcomes (9 items)	Forced choice questions

*Designed for this study

Phase I

Nurses' perception of their working environment was gathered using the Nursing Context Index (NCI) instrument developed by Slater and McCormack (2006). The questionnaire consists of five demographic questions and nineteen constructs of workplace culture; nine aspects related to nurse stress levels (36 items), four aspects measured job satisfaction (18 items), and six aspects measured the practice environment (24 items). Constructs were measured using a 7-point Likert scale (McCormack et al. 2010). The questionnaire is described in detail in Article I.

Phase II

In phase II, patient, nurse and organizational outcomes were collected using various instruments. Patient outcome data were gathered from discharging patients using an instrument that consisted of background, care assessment and Therapeutic Self-Care – discharge questions (Sidani

& Doran 2008), and Client-Centered Care (De Witte, Schoot & Proot 2006) instruments. The background questions included 7 items. The care assessment consisted of multiple choice and 5-point Likert scale questions. The Therapeutic Self-Care – discharge instrument comprised 8 items of self-care after discharge, using a 3-point response scale. The Client-Centered Care instrument consisted of 15 items related to client-centredness and uses a 5-point Likert scale.

Nurse managers were asked to complete the unit's patient outcomes using an instrument specifically designed for this study. The instrument consists of 4 items related to complications, 15 items related to adverse events, and uses forced choice questions. The questionnaires are described in detail in Article II.

The units' nurse and organizational outcome data were also collected via a questionnaire developed for nurse managers for the purposes of this study. Nurse outcomes consisted of items related to sickness absences (2 items), overtime work and occupational injury. Organizational outcome data were measured with items related to length of stay (LOS), bed occupancy rate, the use of supplemental nurses (2 items), in-patient daily charge, number of beds, vacancies (2 items), and the length of service of the nurse manager. Again, forced choice questions were used. The nurse outcome instrument is described in detail in Article III and organizational outcome instrument is described in Article IV.

Phase III

In phase III, the Nursing Context Index (NCI) instrument was used together with patient instruments and a questionnaire developed for nurse managers to collect nurse, patient and organizational outcome information.

Phase IV

The data gathered with the instruments used in this study was utilized to create a model of the connection between the workplace culture and the nursing-sensitive outcomes.

4.5 Data collection

Phase I, II, III and IV

All data collection was carried out during one-month research periods between November 2011 and March 2012. Because of some delayed permissions to conduct the research studies, in different units the data collection was carried out during various months. However in each facility the study was carried out during a one-month period. The researcher visited the 22 participating units to inform the nurse managers and nurses about the study. The nurses and nurse managers were responsible for recruiting the discharging patients for inclusion in the study. Questionnaires with return envelopes were left in the units. The researcher made two reminder calls to the units during the study month, and the sealed envelopes containing completed questionnaires were gathered once the study month was completed.

4.6 Data analysis

The statistical analyses were conducted in all phases using SPSS version 20.0 MacOS (Chicago, USA). The data consisted of descriptive and inferential statistics.

Phase I

Firstly, the characteristics of the nurses and each of the 19 items of workplace culture were described using frequencies, percentages, means and standard deviations. The internal consistency of each factor was tested using Cronbach's alpha coefficients. Secondly, the mean scores of each factor were calculated. Finally, the statistically significant differences between constructs of workplace culture and demographics were evaluated using One-way Anova or Welch tests, and with post-hoc tests for multiple comparisons using either Bonferroni or Tamhane's T2. The Welch test was used if the assumption of the homogeneity of variances between groups was violated. A p-value of <0.05 was considered to be statistically significant (Burns & Grove 2005; Polit & Beck 2012).

Phase II

The sociodemographic data of patients was analyzed using descriptive statistics. The patient, nurse and organizational outcomes were described using frequencies, percentages and means.

Phase III

To assess the correlation between the selected patient outcomes and 19 constructs of workplace culture, Spearman's correlation, Kruskal Wallis and Mann-Whitney tests were used (Article II). The connections between selected nursing-sensitive nurse and organizational outcomes, and the 19 constructs of workplace culture were analyzed using Spearman's correlation (Articles III & IV). The correlations were assessed using unit means.

Phase IV

Previous results of data analysis (Phase I, II and III) were used in creating a model of the connection between the workplace culture and the nursing-sensitive outcomes.

4.7 Ethical considerations

Ethical guidelines (TENK 2013) were followed in all study phases. Several ethical aspects related to the research project, investigated topics, study design, sampling, data collection, the anonymity of participants, and the researcher's responsibility to generalize the results were carefully considered during the study (Fraklin et al. 2012; Polit & Beck 2010.) As the study considered human subjects, ethical approval was needed (David & Sutton 2011). The study conformed to the ethical requirements of the Declaration of Helsinki (2013) and was approved by the Ethics Committee of the Hospital District (Approval registration: 158/13/3/00/11). The participating organizations (n=9) also granted their individual permissions to conduct the study.

The topic and design were chosen as they were thought to provide information that would be useful for improving care and care

environments in primary health care. As the study focused on nursing-sensitive outcomes, in-patient units in primary health care were chosen as a preferred setting as these units employ many nurses.

All phases of the study were carefully managed (Fraklin et al. 2012). Before the study month, the researcher visited all of the participating units giving both verbal and written information (introduction letter) to the nursing personnel and nurse managers. The written information included information concerning the voluntary nature of participation in the study, and the guaranteed anonymity of respondents. The role of nurses and nurse managers in involving the patients was verbally explained. All of the involved patients were given written information by the nurses (introduction letter) concerning their anonymity and voluntary participation. They were also informed that their participation would not affect their care either at the time or at any point in the future. The introduction letter for all participants included the researcher's contact information. After the study month was complete, the researcher returned to the units to collect the sealed questionnaires (Polit & Beck 2012).

The researcher analyzed the results with the guidance of a biostatistician. Results were then reported in aggregates, so ensuring that individual participants or units could not be identified (David & Sutton 2011).

5 Results

The main results of this dissertation are presented in accordance with the research questions which have been previously outlined. The detailed results of each phase of the study are presented in the original articles I-IV.

5.1 Workplace culture in municipal primary health care

In this study, the workplace culture in municipal primary health care was assessed as neither positive nor negative (Article I, Table 1). Several constructs of workplace culture showed both positive and negative relationships with each other. Especially, the constructs as workload, intention to leave, adequate staffing and resources, work-social life balance, working environment, lack of communication and support, nurse management and professional satisfaction showed several relationships with each other. The correlation coefficients between the 19 constructs of workplace culture are reported in more detail in Appendix 2. Overall, the participants reported low stress levels (M = 2.75; SD 0.66). The most important cause of stress was identified as workload (M = 4.04; SD 1.10). The participants indicated that they were neither satisfied nor dissatisfied with their job (M = 4.82; SD 0.74). Their personal satisfaction (M = 5.3; SD 0.75) and professional satisfaction (M = 5.07; SD 0.83) indicated fairly satisfied levels, in contrast with their degree of satisfaction with pay and future prospects (M = 4.11; SD = 0. 98), in which participants were neither satisfied nor dissatisfied. As with stress and job satisfaction, the practice environment was assessed as neither positive nor negative (M = 4.18; SD 0.82).

Participants' perception of workplace culture varied depending on their profession, age and work shifts (Article I, Table 2). The workplace culture was assessed more positively by younger LPNs and RNs, while

older RNs and those who worked in rotating rosters gave a more negative assessment (Article I).

5.2 The connection between workplace culture and outcomes

The connection of workplace culture was assessed in relation to patient, nurse and organizational outcomes (Article II, III and IV).

5.2.1 The connection between workplace culture and patient outcomes

Workplace culture in primary health care in-patient units revealed several connections with patient complications related to pressure ulcers and patient falls (Article II, Table 3), and also to adverse events related to communication errors. In addition, connections were found with patient centred care - particularly recognizing symptoms, taking medication, and patient self-care related to knowing who to call if help was needed.

To be more precise, the frequency of nurse stress and a low agreement as to the positive evaluation of the practice environment were connected with an increased amount of complications, whereas a higher level of satisfaction was connected with a lower prevalence of complications. Higher levels of nurse stress and a similarly lower evaluation of the practice environment were connected with higher amounts of complications. Lower satisfaction and lower evaluations of the practice environment were connected with an increased amount of communication errors. A better agreement among nurses about their practice environment was connected with a better assessment by patients related to their patient centred care. However, a higher level of nurse stress was connected with better assessment by patients related to patients' self-care (Article II).

5.2.2 The connection between workplace culture and nurse outcomes

Findings of this study showed connections between workplace culture and nurses' sickness absences, overtime work and occupational injuries (Article III, Table 2). To be more precise, a higher level of nurse stress

revealed connections with a higher prevalence of overtime work and occupational injury, while a higher level of satisfaction demonstrated connections to a lower prevalence of sickness absences, overtime work and occupational injury. The practice environment constructs were both positively and negatively related to sickness absences and overtime work, and negatively related to occupational injuries (Article III).

5.2.3 The connection between workplace culture and organizational outcomes

Findings showed connections between workplace culture with organizational outcomes such as LOS, bed occupancy rate, and the use of supplemental nursing staff. Furthermore, a connection was observed with structural variables such as in-patient daily charge, number of beds, open vacancies, and the length of service of the nurse manager (Article IV, Table 2). Higher nurse stress was connected with the higher use of supplemental nursing staff, but also when there were no supplemental nursing staff available. Nurses' stress was connected with higher in-patient daily charges, the number of beds and the length of service of the nurse manager. Furthermore, higher levels of nurse stress showed a connection with LOS. Job satisfaction demonstrated a connection with lower bed occupancy rate. A low level of agreement of the practice environment showed connections with higher LOS, use of supplemental nurses and open vacancies (Article IV).

5.3 A conceptual model of the connections between workplace culture and nursing-sensitive outcomes

Based on the results of this study, a conceptual model (Figure 3) is proposed that identifies the connections between workplace culture and nursing-sensitive outcomes in primary health care. The model is based on the Patient Care Delivery Model (PCMD), which identifies internecine correlations among and between components, and also the overall system (O'Brien-Pallas et al. 2004; 2010). The conceptual model presents the significant correlations between inputs-throughputs-outputs. The

internecine correlations with workplace culture are presented in capital letters. The figure shows how the patient, nurse and unit level predictors are related to the constructs of workplace culture, and how the constructs of workplace culture are related with the patient, nurse and organizational outcomes. More detailed data is presented in the original articles I-IV.

The findings of this study showed that a patient's educational level and nurses' age were connected regarding nurses' experience of stress, and furthermore how nurses evaluate the practice environment. The nurse's profession was connected to nurses' satisfaction levels and how they evaluated the practice environment. Shift work was also connected with the nurse's evaluation of the practice environment. In-patient daily charge, the number of beds and the length of service of the nurse manager all had a connection with nurses' stress, while open vacancies were connected with the nurse's evaluation of practice environment.

In this conceptual model, the throughput was defined as workplace culture and combined constructs of stress, satisfaction and the practice environment (Slater & McCormack 2006). Based on the findings, the constructs of stress were connected with patient outcomes (pressure ulcers, falls, patient centred care, self-care), nurse outcomes (overtime work, occupational injuries) and organizational outcomes (length of stay, use of supplemental nursing staff).

Constructs of satisfaction were connected with patient outcomes such as complications related to pressure ulcers, and adverse events related to communications. The constructs of satisfaction were also connected with nurse outcomes such as sickness absences, overtime work and occupational injuries. In addition, satisfaction relates to organizational outcomes, specifically with bed occupancy rates.

The findings indicated that the constructs of practice environment were connected with patient outcomes (pressure ulcers, falls, adverse events related to communications, self-care), nurse outcomes (sickness absences, overtime work, occupational injuries) and organizational outcomes (length of stay, supplemental nursing staff).

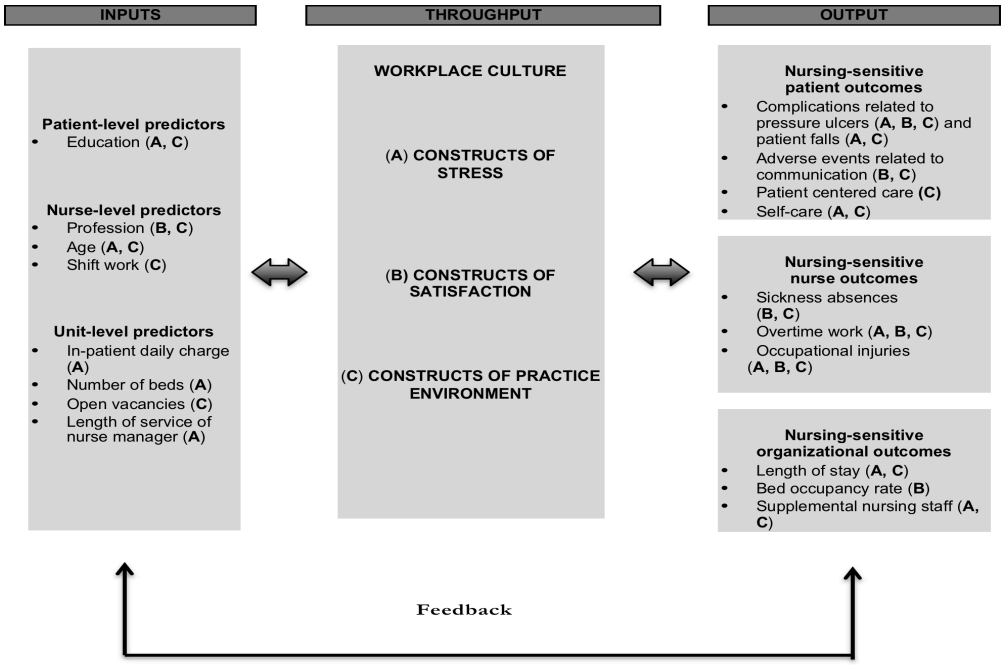

Figure 3. Conceptual model of connection of workplace culture on nursing-sensitive outcomes.

A= significant correlations between inputs-constructs of stress-outputs.
B= significant correlations between inputs-constructs of satisfaction-outputs.
C= significant correlations between inputs- constructs of practice environment – outputs.

6 Discussion

The purpose of this study was to describe nurses' perceptions of workplace culture in primary health care, and to explore the nursing-sensitive patient, nurse and organizational outcomes of those workplaces. An additional aim was to observe the connections between workplace culture and nursing-sensitive patient, nurse and organizational outcomes. The study design enabled the research to achieve its intended purpose. In this chapter, firstly the validity and reliability of this study are described. The main findings are discussed in relation to earlier research, and recommendations for management, practice, education and for future research are presented.

6.1 Validity and reliability of the study

In each participating unit, data collection was carried out during a one-month period. This enabled the research to explore the unit's workplace culture and it's possible connections between patients, nurses and organizational outcomes.

The quality of a study is evaluated by its validity and reliability. In this study, an evaluation was carried out with regard to the internal, external and content validity, as well as internal consistency reliability (Polit & Beck 2012). Validity and reliability are firstly discussed concerning the study design, and secondly related to instruments employed within the study (Grove et al. 2013).

6.1.1 Validity and reliability of study design

Generalizability is a significant criterion for assessing the quality of a study (Polit & Beck 2012). However, in this study, the cross-sectional study design did not enable any causal conclusions to be drawn.

Nevertheless, a cross-sectional study design was appropriate as the aim of this study was to observe the phenomenon over a short period of time (Levin 2006). The researcher is responsible for choosing the most suitable research design (Gerrish & Lacey 2010). To avoid data errors, the study protocols (Dillman et al. 2009) were carefully followed in every phase.

The samples used in this study covered all nursing personnel (RNs, LPNs and nurse managers) working in inpatient units in primary health care in nine health care centres of a large hospital district, and the patients discharged from those units during the data collection period. The study looked to include thirty-inpatient units, and thus cover more than one third of this type of unit in the chosen hospital district. Based on the pilot study data, the number of respondents needed was estimated to be around 600 nursing personnel and 450 patients. The target was to reach around two hundred respondents from both groups. A typical response rate in questionnaire surveys is around 30% (Vehkalahti 2008, Grove et al. 2013). In spite of several attempts, study permission was granted by only 22 units. A possible explanation for this might be that organizations were not happy to evaluate their workplace culture if there were going through some changes at the time. Without these permissions, there was therefore no possibility to include more units at a later stage of the study. Of 340 nursing personnel, 220 returned the questionnaire, with a response rate of 65%. One possible explanation for this good response rate might be the fact that the most of the nursing research tends to focus on specialized care, so perhaps these nurses in primary health care have not yet become saturated with surveys. However, the response rate of patients remained quite low and the reasons for this remain unknown. It was not possible to conduct a loss analysis as the questionnaires were delivered by nurses and the total number of discharged patients was not asked. Some potential explanations for this low patient response might be the advanced age and fragile condition of many of this patient group. It cannot be discounted that due to the fast pace of daily routine, some potential patients may have been missed and were not asked to participate in the study. Thus, the recruitment process for this type of research needs more attention in the future. To involve all potential patients in the study, it would have been useful to name a specific nurse from the unit as responsible for recruiting potential patients. Further research with a larger

sample size of patients is therefore needed to confirm the link between workplace culture and patient outcomes.

Internal validity indicates how the findings of a study truly reflect the reality of a situation (Polit & Beck 2012). In this study the questionnaires involved self-assessment, and this could have reduced the internal validity as participants might have answered either more positively or in a way that they thought was the correct way to answer (Polit & Beck 2012). The Likert scale structure of the questions used in this study also simplifies the given responses and thus fails to explore the issues of interest individually to any depth.

To guarantee the equal provision of information for participants, the researcher visited all of the study units prior to data collection, and informed the participants about the study verbally and with written information. All of the participants were provided with the contact information of the researcher. The data from the nurse managers regarding patient, nurse and organizational information was not necessarily readily available, so the researcher explained all of the individual questions for each of the nurse managers.

External validity indicates the extent to which findings may be generalized beyond the target population (Polit & Beck 2012). In this case, the study context represents the demographic profile of units, nurses and patients in the primary health care sector of a large hospital district in Finland, therefore the representativeness of findings at a national level can be considered reliable. However, there are some limitations that need to be taken account when further generalizing the findings, especially with regard to the non-randomized and rather small sample size of the study. Thus only suggestive conclusions may be drawn with regard to other settings.

6.1.2 Validity and reliability of the instruments

In this study, data were collected using several instruments. The instruments used in a study affect the reliability of the research (Polit & Beck 2012). The used instruments in this study (NCI, Therapeutic Self-Care – discharge, and Client-Centered Care questionnaires) had been previously validated and reliability tested in an international setting.

Hence, the *content validity* of the instruments is assumed as adequate as the instruments were able to be hypothesized to measure what they were supposed to measure (Dane 2011, Polit & Beck 2012). The NCI, Therapeutic Self-Care – discharge and Client-Centered Care questionnaires were translated into Finnish, then verified using back translation (Jones et al. 2001). The instruments helped gather relatively precise data (Polit & Beck 2012) about the workplace culture in primary health care, patients' experience of care, and to register related data concerning patients, nurses and the organization. The only instrument that was not previously used and tested was the questionnaire developed for this study, and used by nurse managers to gather data concerning patients, nurses and their organization. This questionnaire requires further testing to ensure the usability of the instrument in different settings and to confirm the reliability and validity of the instrument.

Experts in the field (n=3) evaluated the *content validity* (subjective evaluation of validity) of the questionnaire used for nurse managers to measure data concerning patients, nurses and their organization. The instrument was pilot tested by nurse managers (n=10) to ensure the face-related validity and reliability of the developed instrument (Tran 2009, Grove et al. 2013). The three other instruments were also pilot tested (Tran 2009, Grove et al. 2013): NCI (n = 24), Therapeutic Self-Care – discharge and Client-Centered Care (n=6). One of the weaknesses of this study was a lack of a pre-existing and pre tested instrument to gather registered data (i.e. data which was held on individual institutional databases). It can be also argued that using structured instruments narrowed the studied phenomenon (Polit & Beck 2012), however in this study, the phenomena are described based on the instruments used.

Cronbach's alpha coefficient was used to test the *reliability* (the ability to produce non-random results) of the instruments (Polit & Beck 2012). A reliability evaluation of the instruments was undertaken, even though the Cronbach's alpha coefficient for each instrument had previously been calculated in other studies, as previous Cronbach's alpha coefficients are regarded as only an estimation (Connelly 2011). The Cronbach's alphas of the three overall factors of NCI were good (0.78-0.93). The Cronbach's alpha of the Client-Centred Care Questionnaire was 0.78 and the Therapeutic Self-Care 0.73. In earlier studies, the Cronbach's alpha of the NCI was registered as 0.57-0.9 (Slater et al. 2009), Client-Centred Care

Questionnaire 0.94 (De Witte et al. 2006) and Therapeutic Self-Care scale 0.93 (Doran et al. 2006). Together, these measurements showed a strong degree of internal consistency. According to Burns & Grove (2009), to use an already tested instrument, a score of at least 0.60 is required. Also, a higher reliability coefficient ensures the consistency of the instrument (Polit & Beck 2012).

6.2 Discussion of the main findings

This stydy has two main findings. The *first main finding* of this study was that the overall perception of workplace culture in primary health care centres appeared to be favourable, even though most of the respondents indicated that they were not certain whether their workplace culture was either positive or negative (Article I). Furthermore, nurses were neither satisfied nor dissatisfied with their job. According to a study of working conditions and hospital quality of care in 12 countries in Europe, 27% of Finnish nurses who worked in the studied hospitals were dissatisfied with their job in general, and 52% of them reported their work environment to be either poor or fair (Aiken et al. 2013). In previous research, a better nurse work environment has been associated with less burnout, increased job satisfaction, higher care quality, better patient self-care capability at discharge (Aiken et al. 2011b), decreased mortality (Aiken et al. 2011a, Trinkoff et al. 2011), decreased patient complications (Trinkoff et al. 2011), and increased empowerment and organizational commitment (Yang et al. 2013).

In this study, nurses working in acute in-patient units in primary health care reported low stress levels (M = 2.75; SD 0.66)(Article I). Earlier findings are contradictory to each other. For example, McCormack et al. (2010) have demonstrated low stress levels among nurses, whilst Aiken et al. (2002) demonstrated high stress levels. This study showed older nurses to be more stressed than younger nurses, and in line with a study of McGillis et al. (2008). The findings of stress were also consistent with previous findings which showed that the most important cause of stress was workload (Hayes et al. 2006, McCormack et al. 2010). Hayes et al. (2006) indicated that workload increase nurses' stress, causing dissatisfaction and burnout which related to an intention to leave.

In future studies, more attention should be paid to the differences between occupations. This study revealed that LPNs felt less empowered and committed than RNs. A study of Krapohl et al. (2010) showed that empowerment had a statistically significant correlation with certification, and inversely with years of experience. According to Yang et al. (2013), the professional practice environment is associated with empowerment and organizational commitment.

The *second main finding* of this study came from the developed model which indicated that the workplace culture had several connections between patient, nurse and unit-level predictors, and furthermore with patient, nurse and organizational outcomes. The connections between workpalce culture and a patient-level predictor (patient educational level), nurse-level predictors (nurses' educational level, age and shift work), and furthermore with unit-level predictors (in-patient daily charge, number of beds, open vacancies and length of service of nurse manager) were revealed. Related to outcomes, the workplace culture was connected with patient outcomes (complications, adverse events, person centred care and self-care), nurse outcomes (sickness absences, overtime work and occupational injuries), and with organizational outcomes (workplace culture the use of supplemental nursing staff, length of patient stay and the bed occupancy rate).

The findings of this stydy indicated that workplace culture was significantly connected with the incidence of complications such as pressure ulcers, patient falls, complications, client-centred care and self-care (Article II). Previously, patient falls have been associated with a higher usage of supplemental nursing staff (Bae et al. 2010a, North et al. 2013, Bae et al. 2014). A lower level of patient falls have been linked with higher degrees of staff satisfaction (Moffitt & Butler 2009), magnet status (Lake et al. 2010), a low level of intention to leave (Bae et al. 2010b), nurse: patient ratios (Manojlovich 2011), and a greater use of LPNs (Bae et al. 2014). However, Lake et al. (2010) demonstrated that falls increased with LPN hours and Patrician et al. (2011) associated an increase with a greater use of clinical nurse assistant hours. Low levels of pressure ulcers have been linked with staff satisfaction (Moffitt & Butler 2009), the timeliness of communications (Manojlovich (2009), a supportive practice environment (Flynn et al. 2010), and magnet hospital status (Goode et al. 2011). The current study revealed a positive

connection between workplace culture and a patient's ability for self-care at the time of discharge. This finding is consistent with that of Aiken et al. (2011b). Furthermore, a review study by Andre et al. (2014) showed a connection between better patient care quality and a nurse's increased empowerment, participation and influence in their work in nursing homes. In contrast to this however, Richardson and Storr (2010) demonstrated in their literature review the limited influence nurses have on patient safety outcomes. A possible explanation for this might be that the quality of the reviewed papers varied, and provided only limited evidence about the influence nurses have on patient safety outcomes.

The findings of this study showed a connection between workplace culture and nurse outcomes, especially with sickness absence, overtime work and occupational injuries (Article III). Higher rates of sickness absence have previously been related with poor health (Roelen et al. 2014), evening shifts (Merkus et al. 2012), stress (Rugless and Taylor 2011), delegating and telling leadership styles (Schreuder et al 2011), overtime work (Schreuder et al. 2010), and physical workload, poor workplace climate and hazardous exposure (Laaksonen et al. 2010). Low rates of sickness absence have also been associated with overtime work (Laaksonen et al. 2010), and supervisor's respect, positive effort–reward ratio and good health (Schreuder et al. 2010). Overtime work has been previously associated with adverse nurse and patient outcomes (Olds & Clarke 2010). A systematic literature review by Bae & Fabry (2014) showed a strong relationship between overtime work and nurses' adverse outcomes such as occupational injury, but suggested that more evidence was needed to draw any conclusion related to adverse patient outcomes. According to Leigh et al. (2015), a decrease of occupational injuries in RNs and LPNs is associated with minimum nurse-to-patient staffing ratios.

Th connection between workplace culture and organizational outcomes such as the use of supplemental nursing staff, LOS and bed occupancy rate (Article IV) was relealed in this study. The use of supplemental nursing staff has been linked with patient mortality (Estabrooks et al. 2005). A study of Bae et al. (2010a) reported the associations between higher levels of use of supplemental nursing staff and nurse back injuries. Bae et al. (2014) have later suggested that an unfavourable working environment can increase the use of supplemental nursing staff. Firth et al. (2010) demonstrated that a shorter patient LOS

was related with a higher RN percentage in the staffing skill mix, and higher RN and LPN hours per equivalent patient day. Surprisingly, the current study emphasized that higher nurses' stress levels were connected with a longer length of service of the nurse manager. So, it would seem that a long length of service of the nurse manager does not necessarily ensure a better outcome with regard to staff stress. However, earlier research (Sherman & Pross 2010, Lindqvist et al. 2015) has emphasized the important role of the unit level nurse leader when improving the work environment.

6.3 Recommendations for management

Based on the findings of this study, the following recommendations for management in primary health care are made:

1. It is essential that nurse managers learn to recognize the different expressions of workplace culture.
2. Better understanding of workplace culture and its connection with patient, nurse and organizational factors would provide ideas on which management can develop strategies for improving nursing-sensitive outcomes.
3. The age of staff influences their perception of workplace culture, thus different means to take this into account should be developed.
4. Working different shifts has different effects on the perception of workplace culture. For this reason, the perspectives of those working in rotating rosters should be particularly be acknowledged.
5. There is a management need for a standardized monitoring system for nursing-sensitive outcomes.

6.4 Recommendations for practice

On the basis of findings of this study, the following recommendations for practice are made:

1. The importance of workplace culture on outcomes should be recognized. For instance, the related incidence of pressure ulcers, falls or nurses sickness absences are important areas that may benefit from further examination in order to determine any linked causative factors.
2. There are differences in how LPNs and RNs experience workplace culture, therefore various means are needed to improve the perception of the unit's workplace culture in health care units.
3. There is a need for workplace culture evaluation prior to the implementation of interventions, so that improvements can be directed based on the particular needs and conditions of the work environment.

6.5 Recommendations for education

Based on the findings of this study, the following recommendation for education is made:

1. There is a need to increase evidence based nursing, and thus it should be implemented in all nursing studies. It is essential that nursing students learn to recognize nursing-sensitive outcomes, and evaluate their own role as for outcomes. One way this might be achieved is to teach students to utilize collected data for improving nursing-sensitive outcomes.

6.6 Recommendations for future research

On the basis of the findings of this study, the following recommendations for future nursing research are made:

1. A lack of studies concerning the immediate culture that patients and staff encounter on a daily basis sets a need for further studies concerning workplace culture.

2. There is a need for in-depth studies with large samples in different settings to confirm the complex interconnections between workplace culture, and patient, nurse and organizational outcomes, and thus to test the developed model.
3. In the future, mixed method research is also needed to deepen the understanding about the complex phenomenon of workplace culture.
4. Interventions to assess~~es~~ the influence of workplace culture on patient, nurse and organizational outcomes is recommended. Comparing the findings of baseline of unit's workplace culture and after-intervention data would give a more comprehensive picture of the influence of workplace culture.

7 Conclusions

This study contributes new knowledge in relation to the connections between workplace culture and nursing-sensitive outcomes. The results suggest that workplace culture was connected with several patient, nurse and unit-level predictors likewise nursing –sensitive outcomes.

Based on the findings of this study, the following conclusions can be drawn: There is a lack of recent research concerning the knowledge of workplace culture and nursing-sensitive outcomes in primary health care settings. In this study workplace culture was assessed as rather favourable, but this perception varied depending on profession, age and work shifts. Workplace culture is worthy of attention, as it is the most immediate culture that patients and staff experience on a daily basis. Therefore it has a direct impact on both patients and staff. As workplace culture in primary health care was significantly connected with patient, nurse and organizational outcomes, it is essential to consistently recognize the influence of workplace culture when evaluating nursing-sensitive outcomes. It is essential that outcome information is used to evaluate the effectiveness of nursing interventions, and also to determine the appropriateness of nursing care. Through outcome data, health care systems can be evaluated and thus provide information on which to formulate strategies that may result in the improvement of patient outcomes.

Further research on this topic needs to be undertaken before the connections between workplace culture and nursing sensitive outcomes are more clearly understood. However, evidenced based decisions demand evidenced based knowledge. Therefore, furher studies which help to develop uniform data related to nursing-sensitive outcomes are recommended.

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Appendices

Appendix 1. Studies related to characteristics of workplace culture and outcomes.

Author(s), Year	Setting, sample	Purpose	Main results
Bae et al. (2010a)	142 hospitals (N=277 medical/surgical units)	To examine the unit level connections between the use of temporary nurses and nurse and patient safety outcomes.	Units with high levels of total nurse hours had significantly more patient falls.
Bae et al. (2010b)	141 hospitals (N=268 medical/surgical and general units	To investigate the effect of nursing unit turnover on key workgroup processes, and the impact of nursing turnover on patient outcomes.	Units' low turnover level was significantly related with fewer patient falls.
Flynn et al. (2010)	63 nursing homes	To examine the influence of nurse staffing levels and modifiable characteristics of the nursing practice environment on pressure ulcers and numbers of deficiency citations in nursing homes	An inverse link was seen between supportive practice the environment and the percentage of residents with pressure ulcers.
Lake et al. (2010)	108 Magnet and 528 non-Magnet hospitals (n=5,388 nursing units)	To examine the connections between a hospitals magnet status, nursing unit staffing, and patient falls.	An extra RN (registered nurse) hour per patient day was linked with a 3% lower patient fall rate in ICUs (intensive care units). An extra LPN (licensed practical nurse) or nursing assistant hour was associated with a 2–4% higher patient fall rate in non-ICUs.
Rochefort & Clarke (2010)	All neonatal intensive care units in the province of Quebec (n=553 nurses)	To investigate the connection between work environments of nurses, care rationing,	18.6% of nurses were dissatisfied with their job, 35.7% were emotionally

		job outcomes, and quality of care.	exhausted, and 19.2% indicated that quality of care was fair or poor.
Aiken et al. (2011a)	665 hospitals (n=1,262,120 patients, n=39,038 staff nurses)	To define the circumstances when the influence of nurse staffing, nurse education and work environment are related to patient outcomes	Better work environment and higher amount of BSc (Bachelor of Science) or higher educated nurses were associated with decreased odds of death. Increased odds of death and failure to rescue were related to higher patient-to nurse ratios.
Aiken et al. (2011b)	1,404 hospitals (n=98,116 nurses)	To define the influence of work environments on hospital outcomes in 9 countries.	Better work environment was related with lower prevalence of burnout, increased job satisfaction, higher care quality and patients' ability for self-care at the time of discharge.
Goode et al. (2011)	35 non-magnet hospitals and 19 magnet hospitals (ICU and general adults units)	To compare patient outcomes and staffing in Magnet® and non-Magnet hospitals.	Better patient outcomes e.g. lower prevalence of infections, postoperative sepsis, and postoperative metabolic derangements were observed in non-Magnet hospitals. Magnet hospitals had a little better outcome with pressure ulcers. Lower staffing numbers were observed in Magnet hospitals.
Aiken et al. (2013)	488 hospitals in Europe.	To obtain a snapshot of European nurses' assessments of their hospital work environments and	11–56% of nurses were dissatisfied with their jobs in most countries. 19–49% of nurses intended to

		quality of care in order to identify promising strategies to retain nurses in hospital practice and to avoid quality of care erosions related to cost containment.	leave their jobs. Nurses reported that important nursing tasks were often left undone because of lack of time, and indicated that adverse events were not uncommon.
Hickey et al. (2013)	38 Children's hospitals (n=3413 nurses, n=26 158 cases of congenital heart surgery)	To investigate the impact of pediatric critical care nursing and organizational factors on children' in-hospital mortality for cardiac surgery patients.	The odds for mortality increased when the percentage of nurses with 2 years clinical experience or less increased, and decreased when the percentage of nurses with 11 years of clinical experience or more increased.
Watts et al. (2013)	3 NHS trusts (n=129 RNs)	To investigate the relationship between burnout and organizational culture and support.	The results suggested that nurses' perception of working environment is related to their wellbeing.
Yang et al. (2013)	5 hospitals (n=750 nurses)	To investigate the relationships between structural empowerment, professional nursing practice environment and organizational commitment.	Professional practice environment, empowerment and organizational commitment showed a strong relationship with each other.
Lindqvist et al. (2015)	11,000 RNs	To investigate hospital characteristics related with nurses' perception of care quality, work environment, burnout and thoughts of leaving.	The work environment and quality of care were ranked better in small hospitals. In urban areas, the nurses who were more likely to leave their work were also more probably looking for work from different hospital. Structural factors had a small influence on nurse-reported outcomes.

Appendix 2. Correlation coefficient between 19 constructs of workplace culture

Constructs	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Workload	1.000	.409**	.554**	.501**	ns	.757**	.729**	.676**	.598**	−.504**	ns	ns	−.474**	−.872**	ns	ns	ns	ns	.495**
2. Inadequate preparations		1.000	ns	.441**	ns	ns	.417**	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
3. Lack of staff support			1.000	ns	ns	.409**	.497**	.497**	.435**	ns	ns	ns	ns	−.530**	ns	ns	ns	ns	ns
4. Conflict with other nurses				1.000	.467**	ns	.487**	.450**	.439**	ns	ns	ns	−.502**	−.452**	ns	ns	ns	ns	ns
5. Unsertainty regarding treatments					1.000	ns	ns	ns	ns	ns	ns	ns	ns	ns	−.421**	−.441**	ns	ns	ns
6. Work-social life balance						1.000	.594**	.542**	.471**	−.412**	ns	ns	−.430**	−.664**	ns	ns	ns	ns	.407**
7. Working environment							1.000	.662**	.539**	−.551**	ns	ns	−.652**	−.643**	ns	−.428**	ns	ns	.525**
8. Lack of communication and support								1.000	.687**	−.609**	−.465**	ns	−.764**	−.631**	ns	−.538**	ns	ns	.518**
9. Career development									1.000	−.558**	ns	ns	−.617**	−.531**	ns	ns	ns	ns	.629**
10. Satisfaction with pay and prospects										1.000	.686**	ns	0.691	ns	ns	.528**	ns	.489**	−.456**
11. Satisfaction with training											1.000	ns	.599**	ns	ns	.518**	.470**	ns	ns
12. Personal satisfaction												1.000	ns	ns	ns	ns	ns	.412**	−.430**
13. Professional satisfaction													1.000	.505**	ns	.689**	ns	ns	−.537**
14. Adequate staffing and resources														1.000	ns	ns	ns	ns	−.471**
15. Doctor-nurse relationship															1.000	.408**	ns	ns	ns
16. Nurse management																1.000	ns	ns	ns
17. Empowerment																	1.000	.620**	ns
18. Organizational commitment																		1.000	ns
19. Intention to leave																			1.000

** Correlation is significant at the 0.01 level (2-tailed)

Original Publications

Original Article

International Nursing Review

Nurses' perceptions of workplace culture in primary health care in Finland

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HAHTELA N., PAAVILAINEN E., MCCORMACK B., HELMINEN M., SLATER P. & SUOMINEN T. (2015) Nurses' perceptions of workplace culture in primary health care in Finland. *International Nursing Review*

Aim: This study aimed to describe nurses' perceptions of workplace culture, especially in regard to stress levels, job satisfaction and the practice environment in primary health care.
Background: Health care is facing many challenges related to its attractiveness as a place of employment and the maintenance of a sufficient workforce supply. Previous studies report increasing rates of nurse job dissatisfaction and intentions to leave their current positions both in Finland and also globally. Improving workplace culture is thus vital in meeting the challenges related to recruitment and retention.
Methods: A cross-sectional descriptive design was used to describe nurses' perceptions of workplace culture. Data were collected by questionnaire from 22 units in nine primary healthcare organizations in Finland, and analysed using descriptive and inferential statistics.
Results: Most of the respondents indicated that they were not certain whether their workplace culture was either positive or negative. Profession, age and work shift characteristics had an effect on the respondents' perceptions of workplace culture. Younger licensed practical and registered nurses assessed their workplace culture more positively, whereas older registered nurses and those working rotating rosters viewed workplace culture more negatively.
Conclusions: The findings suggest that both unit and demographic characteristics affect workplace culture. This survey highlights that a positive workplace culture is one of the key factors in retaining and recruiting nurses, and provides an essential evidence that may be considered by other healthcare organizations.
Implications for nursing and health policy: Nurse managers and healthcare leaders need to address workload management and take into account the related variables that affect a unit's workplace culture.

Keywords: Finland, Job Satisfaction, Practice Environment, Primary Health Care, Stress, Workplace Culture, nurse recruitment and retention, nursing shortage

Introduction

Nursing shortage and high turnover rates have become global phenomena that are likely to persist in the coming years (Sermeus & Bruyneel 2010). Both an increasing demand and a decreasing supply of nurses have contributed to this shortage

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(WHO 2009). However, according to Buchan & Aiken (2008) this shortage is the result of unfavourable working conditions, rather than a mere lack of nurses. Poor working conditions may cause many nurses to exit the profession at the beginning of their career (Flinkman et al. 2010), yet as the global economy recovers and brings more employment opportunities, without improvements in hospital working conditions the nursing shortage is likely to increase (Aiken et al. 2013).

Nursing shortage is often unevenly distributed either geographically or in terms of specialty (Sermeus & Bruyneel 2010). The Finnish healthcare system is mainly tax financed, and all citizens are entitled to health and medical care in public sector healthcare centres and hospitals. In Finland, primary health care has experienced a shortage of physicians and nurses that is projected to extend into the future. Consequently, consideration of the availability and sufficiency of healthcare personnel has become a factor that influences many actions and legislative changes affecting the development of primary health care, and is also a key factor in the functionality of health centres (Ministry of Social Affairs and Health 2010).

Improving working environments and creating a positive workplace culture is essential for patient safety and the delivery of quality care (Kramer et al. 2009). Likewise, when nurses experience professional satisfaction, they remain longer in their positions and experience less job stress and burnout (Aiken et al. 2012; Van den Heede et al. 2013). Relatedly, a poor work environment has been linked to job dissatisfaction, burnout and intention to leave current job (Aiken et al. 2012).

Despite a diminishing nursing workforce, some organizations have managed to both recruit and retain nursing personnel (McClure et al. 2006). Hayes et al. (2006) argue that organizational characteristics have a significant role in attracting and retaining nurses. The retention of nursing staff can be improved by control over nursing practice, a patient-centred culture (Kramer et al. 2009), adaptable work possibilities, access to continuing professional development (Aiken et al. 2008), nurse autonomy in decision making, shared governance (both at unit and hospital level) and also by the involvement of management (O'Brien-Pallas et al. 2010).

Despite the availability of evidence concerning workplace culture in other types of organizations, healthcare organizations have made little effective use of the information (McCormack et al. 2011). In this paper, we present findings on nurses' perceptions of workplace culture in primary healthcare settings. Here, primary health care is not considered as a specific organizational structure, but comprises practices of care that are provided in the community, easily accessible, comprehensive and person oriented (Boeckxstaens & De Graaf 2011).

Background

Workplace culture includes everything that is learned and shared in the social context, relating to the workplace (Manley et al. 2011). In this study, workplace culture is defined as the immediate culture that patients, residents and staff encounter on a daily basis, and is characterized by shared values, expectations, assumptions and beliefs (Manley et al. 2011). Workplace culture is constructed by the organization, as well as by the personal attitudes, manners and knowledge that employees bring to work (Smith 2008). It is important for many reasons, and has direct impacts (positive or negative) on patient care, staff well-being, staff commitment and cooperation, and also on their willingness and ability to learn and use evidence in the workplace (Manley et al. 2011).

In this study, the term *workplace culture* is used to describe nurses' work experiences, particularly in regard to stress levels, job satisfaction and the practice environment in primary health care. Heavy workload is the prime reason for stress among nurses (McCormack et al. 2010). For example, McGillis Hall et al. (2008) found higher patient-to-nurse ratios increased job stress, especially among older and more highly educated nurses. However, this contrasts with Purcell et al. (2011) who reported higher stress levels among younger nurses, even with a lower patient workload. Stacey et al. (2011) also found higher stress levels among nurses working on weekends. Nurses working in medical wards, emergency departments, intensive care units and paediatric wards have demonstrated higher levels of stress than those nurses who worked in an outpatient setting (McCarthy et al. 2010). Empowerment has been found to lower levels of job strain and burnout (Manojlovich 2007), and also to improve nurses' abilities to deliver effective patient care (Bradbury-Jones et al. 2008).

High levels of nurse job dissatisfaction have been reported in many countries (Aiken et al. 2012). The RN4Cast study conducted in 12 European countries and the USA reported a considerable variation in job dissatisfaction between countries, ranging from 11% in the Netherlands to 56% in Greece (Aiken et al. 2012). Studies conducted in Asia have reported job satisfaction rates ranging from 28% in Thailand (Nantsupawat et al. 2011) to 50% in China (Liu et al. 2011).

Job and workplace characteristics have an important role in creating nurses' practice satisfaction (Kutney-Lee et al. 2013). For example, adequate, well-managed staff and resources (McCormack & Slater 2009; Nantsupawat et al. 2011), and good nurse–doctor relationships (Van Bogaert et al. 2013) have been associated with increased nurse satisfaction, as has an effective nurse manager who confers with staff and gives affirmative input (Van Bogaert et al. 2013). McGillis Hall et al. (2008) found casual nurses (supplemental or temporary) to be more

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satisfied with their work than either full-time or part-time nurses. Moreover, nurses working in teaching hospitals have been reported to be more satisfied with their work than those working in community hospitals.

Kutney-Lee et al. (2013) found that a good perception of the practice environment bodes for more consistent and stronger nurse job outcomes. Practice environment influences the effectiveness of healthcare services (Hayes et al. 2006), and also any intention to leave the hospital (Aiken et al. 2012; Heinen et al. 2013; Kutney-Lee et al. 2013; Van den Heede et al. 2013). For example, approximately 30% of nurses have less intention to leave when their perception of the practice environment is positive (Heinen et al. 2013). Lavoie-Tremblay et al. (2010) suggest that all nurses, regardless of generation, will benefit from retention strategies that focus on improving the working environment.

An intention to leave either the hospital or even the profession is most often due to job dissatisfaction (Heinen et al. 2013; Liu et al. 2011; Van den Heede et al. 2013). In the RN4Cast study, Heinen et al. (2013) found that in 10 European countries, 9% of the nurses surveyed intended to leave the profession due to job dissatisfaction. Workload has been raised as a potential indicator of staff intention to leave the hospital (e.g. Hayes et al. 2006; Aiken et al. 2012). The intention to leave an employed post varies in different studies: the RN4Cast study reported high turnover rates in Finland and Greece (49%), with the lowest European rate being found in the Netherlands (19%). In China, nurses have been reported to have a 40% intention to leave the job, acute hospital nurses in Belgium nearly 30% and nurses in the USA only 14% (Aiken et al. 2012; Liu et al. 2011; Van den Heede et al. 2013). Although the Belgian acute hospital study also implicated that a similar number (30%) of nurses planned to leave the profession, however a study of Belgian psychiatric hospitals reported only a 7.7% of nurses intending to leave the profession (Van Bogaert et al. 2013; Van den Heede et al. 2013), so this type of study result is not evidently transferable. In the Chinese study, young, single, less experienced and less educated nurses were seen as being more likely to leave the profession (Liu et al. 2011).

As shown, studies among nurses have demonstrated high levels of stress, job dissatisfaction, unhappiness with the work environment and also an intention to leave. These disquieting findings stress the value of a good workplace culture in order to ensure that nurses remain in their jobs and subsequently remain in the profession. According to Manley et al. (2011, p. 4), 'workplace culture both influences and is influenced by the organizational and corporate cultures with which it interfaces as well as other idiocultures through staff relationships and movement'.

Methods

Design and settings

A cross-sectional study was used to describe nurses' perceptions of workplace culture in primary healthcare centres. The specific objective was to describe nurses' perceptions of stress levels, job satisfaction and the practice environment. The survey was conducted within a single large hospital district from November 2011 to March 2012 in Finland. A convenience sample of 30 acute care inpatient units in primary care was purposefully selected for this study. In each facility, the study was open for a 1-month period. Permission to conduct the study was received from 22 acute care inpatient units. Long-term care units were excluded.

The primary healthcare setting was chosen as the health services organized by municipalities form the core of the Finnish healthcare system and employ a large number of nurses. In Finland, a licensed practical nurse (LPN, also known as an enrolled or licensed vocational nurse) is a healthcare professional with a protected occupational title. In this study, we also use the term *ward head nurse* to indicate roles recognized elsewhere as, for example, charge nurse, ward sister or head nurse.

Participants and data collection

All nursing personnel [LPNs, registered nurse (RNs) and ward head nurses] working in the selected units of a large hospital district were included in the survey. Casual contract nurses (defined as supplemental or temporary nurses) were excluded. The nursing personnel were verbally informed about the study by the researcher and also provided with written information. The researcher distributed the questionnaires to those who were present. Ward head nurses were responsible for distributing the questionnaire to absent employees, together with a sealable envelope in which to return the questionnaire. The confidentiality of the participants was assured. Two reminder calls were sent out to the managers during the data collection period. After 1 month, the researcher revisited the unit and collected the returned sealed envelopes from the nurses' secretariat. The ward head nurses did not know who had returned questionnaires and were not privy to any details of the overall study or individual responses.

Data collection was carried out in November 2011 for 12 units, in February 2012 for eight units and in March 2012 for two units. This staggered data collection was due to late permissions being received from some of the organizations. Of the 340 potential respondents, 220 returned their questionnaires, yielding a 65% response rate.

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Instrument

The Nursing Context Index (NCI) was used to measure nurses' working environments, and is a part of the Person Centred Nursing Index questionnaire developed by Slater & McCormack (2006). Developers have gauged both the face and content validity of the instrument via expert panel feedback ($n = 6$) and pilot testing. Cronbach's alpha scores of the 19 individual constructs were acceptable (0.57–0.9) (Slater et al. 2009). Permission to use the questionnaire was granted by the developing authors. This was the first time the NCI was used in the Finnish context; however, it has previously been used in Australia, Ireland and the UK (McCormack et al. 2010). The questionnaire was translated into Finnish, verified using the back translation method and pilot tested ($n = 24$) before its distribution.

The questionnaire consisted of two parts. Part I consisted of demographic questions relating to gender, educational level, age and work shifts. Part II consisted of 78 items from the NCI. Subjects rated agreement on a 7-point Likert scale. Stress scale was measured on a scale ranging from never to always; job satisfaction was measured on a scale from very dissatisfied, through neither dissatisfied nor satisfied, to very satisfied; and the practice environment was measured on a scale from strongly disagree, through neither disagree nor agree, to strongly agree. Nineteen constructs were identified; nine measuring aspects related to nurse stress levels (36 items), four measuring job satisfaction (18 items) and six measuring the practice environment (24 items) (Slater & McCormack 2006). Nurses were asked to rate their stress, satisfaction and practice environment perceptions relating to the previous week. Some examples of the instrument items were 'Feeling under too much pressure at work', 'The amount of challenge in my job' or 'I often think about quitting'. In this study, the Cronbach's alphas of the 19 individual constructs were found to be acceptable (0.64–0.93), and the Cronbach's alphas of the three overarching factors were good (0.78–0.93) (Table 1).

Statistical data analysis

Data were analysed using SPSS version 20.0 MacOS (Chicago, IL, USA). All of the items that comprised each factor were aggregated to create a mean score calculation. Descriptive statistics were used to describe the characteristics of the respondents and each of the 19 constructs. One-way analysis of variance (ANOVA) was used to evaluate the construct score differences in factorial background variables. The Welch test was used instead of ANOVA if the homogeneity of variances between groups was assumed to be violated. Cronbach's alpha was used for assessing the internal consistency of each factor. In this study, the workplace culture was defined as favourable if the mean stress score was below 4, and the mean scores of satisfaction and practice environment were above 4. The factor of 'intention to leave' was reverse scored.

Table 1 Mean scores, standard deviations on a 7-point scale and Cronbach's alpha scores of each factor contained in the Nursing Context Index

Factors	*Mean*	*SD*	*Alpha*
Overall stress score	2.75	0.66	0.93
Workload (five items)	4.04	1.10	0.91
Inadequate preparations (three items)	3.39	0.88	0.79
Lack of communication and support (five items)	2.85	0.96	0.74
Uncertainty regarding treatment (four items)	2.72	0.90	0.71
Lack of staff support (three items)	2.63	1.10	0.75
Work–social life balance (four items)	2.62	1.01	0.76
Working environment (four items)	2.18	0.94	0.78
Career development (four items)	2.10	0.93	0.76
Conflict with other nurses (four items)	2.08	0.79	0.64
Overall job satisfaction	4.82	0.74	0.86
Personal satisfaction (five items)	5.3	0.75	0.73
Professional satisfaction (five items)	5.07	0.83	0.70
Satisfaction with training (three items)	4.77	1.40	0.92
Satisfaction with pay and prospects (five items)	4.11	0.98	0.73
Overall practice environment	4.05	0.62	0.78
Doctor–nurse relationship (three items)	5.04	1.22	0.84
Nurse management (seven items)	4.53	0.92	0.70
Empowerment (four items)	3.64	1.19	0.80
Adequate staffing and resources (four items)	3.49	1.31	0.82
Organizational commitment (three items)	4.14	1.07	0.66
Intention to leave (three items)	3.12	1.74	0.93

Ethical considerations

The study was granted approval by the ethics committee of the hospital district of Helsinki and Uusimaa. Research permission was received from each of the participating organizations. The consent of each participant was obtained. Prior to data collection, the researcher visited each unit and explained the purpose of the study to personnel. All were informed that their participation was voluntary and anonymous, and that responses would only be reported in aggregates (in accordance with the Declaration of Helsinki of the World Medical Association 2013).

Results

Demographics

In the study, 98.6% of the participants were female ($n = 217$). Of the 220 participants, 49.1% ($n = 108$) were LPNs, 43.2%

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($n = 95$) were RNs and 7.7% ($n = 17$) were ward head nurses. Most respondents were employed full time in a rotating roster ($n = 168$, 76.3%) and set days or nights ($n = 25$, 11.3%), with the remainder working part time in a rotating roster ($n = 25$, 11.3%) and set days or nights ($n = 2$, 0.9%). Nearly half of the participants (49.5%) were over 45 years old.

Perceptions of workplace culture

Most of the respondents indicated that they were not certain whether their workplace culture was either positive or negative, and one-way ANOVA/Welch tests showed that both unit and demographic characteristics had an effect on workplace culture (Table 2).

Stress

The overall mean score for stress was low [mean = 2.75; standard deviation (SD) 0.66] (Table 1), indicating low experiences of stress (hardly ever or occasionally). This score was the lowest of all the workplace culture constructs. Workload was the main cause of stress (mean = 4.04; SD 1.10), indicating that workload-related stress had occurred sometime during the previous week. Conflict with other nurses (mean = 2.08; SD 0.79) and career development (mean = 2.1; SD 0.93) caused the least levels of stress, indicating that they had hardly ever occurred during the previous week.

There was a significant difference between all five age groups concerning inadequate preparations ($P = 0.016$), lack of staff support ($P = 0.040$), conflict with other nurses ($P = 0.002$) and uncertainty regarding treatments ($P = 0.012$) (Table 2). Of the age groups investigated, those nurses between 18 and 25 years evaluated inadequate preparations to deal with the emotional needs of patients and their families as being most significant (mean = 2.78; SD = 0.71). Their evaluations were least significant regarding treatments (mean = 2.26; SD = 0.67). Inadequate preparations were most reported by nurses aged 46–55 years (mean = 3.55; SD = 0.87), whereas nurses over 55 years old most reported the category of treatment (mean = 3.01; SD = 0.76).

Job satisfaction

The highest overall mean score was for job satisfaction (mean = 4.82; SD 0.74), indicating that respondents were neither satisfied nor dissatisfied. Of the job satisfaction areas, personal satisfaction (mean = 5.3; SD 0.75) along with professional satisfaction (mean = 5.07; SD 0.83) achieved the highest mean scores, indicating a fairly satisfied level. Satisfaction with pay and future prospects (mean = 4.11; SD = 0. 98) was the least satisfying area, and indicated that respondents were neither satisfied nor dissatisfied.

'Profession' had a statistically significant difference with 'satisfaction with pay and future prospects' measuring ($P < 0.001$), 'satisfaction with training' ($P = 0.007$), 'personal satisfaction' ($P = 0.003$) and 'professional satisfaction' ($P = 0.017$). RNs were seen to be less professionally satisfied (mean = 4.89; SD = 0.88) than LPNs and ward head nurses. LPNs were the most professionally satisfied (mean = 5.22; SD = 0.76). Ward head nurses were most satisfied with pay and future prospects (mean = 4.87; SD = 1.06) and LPNs were least satisfied (mean = 3.91; SD = 0.90).

Practice environment

Responses did not correlate (positively or negatively) with the overall mean score for the practice environment as a source of dissatisfaction (mean = 4.18; SD 0.82). However, with relation to the practice environment, nurses over 55 years old gave 0.43 lower unit scores than those nurses aged 18–25 years, which produced a statistically significant difference between the five age groups ($P = 0.017$). A statistically significant difference was also found between ward head nurses and LPNs in relation to the practice environment, where ward head nurses gave 0.71 unit ($P = 0.001$) higher scores than LPNs.

'Profession' had a statistically significant difference in relation to 'nurse management' ($P = 0.001$), 'empowerment' ($P < 0.001$) and 'organizational commitment' ($P < 0.001$). Ward head nurses agreed most regarding the influence of nurse management ($P = .002$), but LPNs felt least empowered when compared with RNs and ward head nurses (mean = 3.42; SD = 1.09).

Significant differences in the influence of shift type were noted in the categories of 'nurse management' ($P = 0.005$), 'empowerment' ($P = 0.017$) and 'organizational commitment' ($P = 0.007$). Those working day shifts agreed most regarding the influence of nurse management (mean = 5.29; SD = 0.67), and also felt most empowered (mean = 4.70; SD = 1.39). In contrast, those working rotating rosters agreed least in regard to the influence of nurse management (mean = 4.45; SD = 0.91), and felt least empowered (mean = 3.54; SD = 1.23).

Compared with RNs and ward head nurses, LPNs felt least committed to the organization (mean = 4.00; SD = 1.04). Organizational commitment was evaluated lowest by those nurses working night shifts (mean = 3.33; SD = 1.04), and those working day shifts assessed organizational commitment most positively (mean = 5.18; SD = 0.86). A significant difference between age groups and an intention to leave was found ($P = 0.016$), with nurses under 35 years more likely to leave the job.

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Table 2 Statistically significant differences between constructs and demographic characteristics

	Stress				*Job satisfaction*				*Practice environment*			
	Inadequate preparations	*Lack of staff support*	*Conflict with other nurses*	*Uncertainty regarding treatment*	*Satisfaction with pay and prospects*	*Satisfaction with training*	*Personal satisfaction*	*Professional satisfaction*	*Nurse management*	*Empowerment*	*Organizational commitment*	*Intention to leave*
Profession	ns	ns	ns	ns	<0.001***	0.007**	0.003**	0.017*	0.001**	<0.001***	<0.001***	ns
LPN (reference group)												
RN	ns	ns	ns	ns	ns	ns	ns	0.013*	ns	ns	ns	ns
Ward head nurse	ns	ns	ns	ns	<0.001***	ns	ns	ns	0.002*	<0.001***	<0.001***	ns
Age	0.016*	0.040*	0.002**	0.012*	ns	ns	ns	ns	ns	ns	ns	0.016*
18–25 (reference group)												
26–35	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
36–45	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
46–55	0.009**	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
55+	0.042*	ns	ns	0.032*	ns	ns	ns	ns	ns	ns	ns	ns
Shift	ns	ns	ns	ns	ns	ns	ns	ns	0.005**	0.017*	0.007*	ns
Full time/rotating roster (reference group)												
Full time/set days or nights	ns	ns	ns	ns	ns	ns	ns	ns	0.003**	0.005*	0.026*	ns
Part time/rotating roster	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Part time/set days or nights	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns

One-way analysis of variance or Welch test, with post-hoc tests for multiple comparisons, using either Bonferroni or Tamhane's T2.
LPN, licensed practical nurse; ns, not significant; RN, registered nurse.
*p-Value < 0.05; **p-Value < 0.01; ***p-Value < 0.001.

Discussion

The study aimed to examine the workplace culture in inpatient units in primary healthcare settings. The participants indicated that they were not certain about either their workplace culture or practice environment. This finding has important implications when developing workplace culture, as any uncertainty places special strain on the area of nurse management.

The results showed a nurses' education, age and work shifts to have an effect on the perception of workplace culture. The effect of education, age and work shifts have been studied, but not with relation to workplace culture (Heinen et al. 2013; Liu et al. 2011; Van Bogaert et al. 2013). This study showed relatively low stress levels (excluding workload) among nurses in primary healthcare centres. The findings are consistent with a study of McCormack et al. (2010). This may be explained by either the nurse's working experience or perhaps that their familiarity with the workplace might prevent work stress. In communities in Finland, primary healthcare centres are often the main and sometimes only employers for nurses in the area, and therefore the workforce tends to be quite stable. However, the experience of stress was affected by the respondents' age. Older nurses appeared to be more stressed than younger colleagues. Higher stress levels among older nurses have been previously reported (McGillis Hall et al. 2008), with workload being seen to be the prime reason for stress among the general nursing population (McCormack et al. 2010). To control nurses' workloads, there is an urgent need to consider the distribution of work at the unit level. It has been questioned whether this work is functionally organized between different professions, and whether nurses work to their scope of practice (Unruh 2008), but the findings of this study serve to further emphasize the importance of effective workload management.

The findings re-affirm those of earlier literature that shifts, workload and payment influence nurses' levels of job satisfaction. However, in contrast to earlier findings (Aiken et al. 2012; Liu et al. 2011; Nantsupawat et al. 2011), overall, the respondents reported that they were fairly satisfied with their jobs. In other words, the respondents were quite satisfied in general, but simultaneously a need for improvements was found. Respondents' views concerning their job were more positive than a study of Aiken et al. (2012) presented. Their results indicated, for example, that 27% of Finnish nurses were dissatisfied with their job in general, and 49% intended to leave their current job within a year.

This paper offers new knowledge of professional satisfaction levels between different areas of nursing. Comparatively, RNs were the least professionally satisfied, whereas LPNs were the most satisfied. This perhaps reflects that RNs felt that their higher level of education and also the demanding nature of their work were not sufficiently valued. This finding clearly indicates that the needs of different nursing professions are worthy of attention.

In our findings, respondents were not certain about their work environment. This uncertainty should be emphasized, as Hinno et al. (2011) revealed that positive assessments of work environment characteristics were linear with a decreased intention to leave the current job. The current study showed the perception of the work environment to be affected by factors such as profession and shifts. Those working rotating rosters gave the lowest scores for nurse management, and therefore the impact of nurse management may be less visible to those working in rotating rosters. Also, LPNs and those working rotating rosters felt least empowered, in contrast to ward head nurses who felt most empowered. In earlier studies, empowerment has been associated with a nurses' ability to deliver effective patient care (Bradbury-Jones et al. 2008), and less nurse burnout and job strain (Manojlovich 2007). Thus, it is essential to pay attention to the different experiences of empowerment that exist between different professions, and notably those who work different shifts.

Respondents aged 35 years or younger were found to be more likely than others to leave their current job; however, no statistically significant differences between age groups were found in this study. Nevertheless, the results for age were in line with previous findings (e.g. Liu et al. 2011; Flinkman et al. 2010), indicating that younger nurses are more likely to look for a new job. This may imply differences between generations, in that younger people are more likely to look elsewhere if they are not satisfied with their current position. In contrast, however, Heinen et al. (2013) found that older nurses were more likely to leave the profession. Flinkman et al. (2010) also showed that an intention to leave predicts the actual decision to leave the profession. As the nursing shortage may increase in the coming years, it is essential for nurse managers to address those issues that may increase nurses' intentions to leave their job or the profession. Another challenge that primary health care faces is how to attract nurse students and young nurses for the care of older adults (Cozort 2008), so addressing the causative issues of attraction and retention is also envisaged to help in this respect.

Study limitations

As in any survey, there are some limitations that should be conceded. Firstly, the small sample size, convenience sampling and self-reported evidence were limiting factors; however, the response rate was 65% and the participants represented nine different organizations. Secondly, the 78-item questionnaire was a limitation. The estimated time to complete the questionnaire was 20 min. There were some missing values coded, and not

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included in analysis. Thirdly, the questionnaire was used in a Finnish context for the first time. To strengthen the validity of the study, the questionnaire was translated into Finnish using the translation–back translation method and piloted with nurses in two units similar to those used in the final study. After pilot testing, minor changes were made to improve the potential understanding of the instrument. As a fourth limitation, the sample consisted mainly of females; however, this is in line with the gender distribution within the nursing profession. Fifthly, the study used a cross-sectional design making it hard to extrapolate causal relationships. Although the results showed statistically significant findings, the differences in means were quite small; therefore, the results need to be interpreted with caution. As such, further studies on a larger scale would be beneficial to establish results that may be more widely representative of the national and international primary healthcare setting.

Conclusion

The findings highlight the fact that both unit and demographic characteristics affect workplace culture. Furthermore, the results showed that workload achieved the highest scores as evaluating stress. The evidence provided by this study regarding the components and perceptions of nursing workplace culture is essential for all primary healthcare organizations seeking to attract and retain nurses. This is especially critical for those institutions providing services for older people, where shortages of nurses and high turnover rates have become a global issue. The AACN (2014) has stated that one way of addressing the potential shortage has been the expansion of student enrolment; however, attention may be better paid to workplaces as the nursing shortage has been linked to unfavourable working conditions, rather than a lack of supply (Buchan & Aiken 2008). The conclusion of this study is that despite the challenges involved, it is worth investing in the nursing work environment because it has been shown to be one of the key factors in retaining and recruiting nurses. Furthermore, it is essential to address unit and demographic characteristics that has been shown to affect workplace culture.

Implications for nursing and nursing policy

This study has demonstrated that nurses' evaluated workload the highest source of stress. Therefore, it is essential that nurse managers consider appropriate levels of nurse staffing and skill-mix when determining the workload of nurses. As the results showed that LPNs in particular felt less empowered and committed to their organization, it is essential to find a way to increase the levels of empowerment and commitment of this group. The study also showed that nurse managers need to manage people of different ages individually, and to consider the important influence that shift working has on nurse management, empowerment and commitment. In taking into account the variables that have been shown to affect a unit's workplace culture, nurse managers and other healthcare leaders can recognize and develop these aspects, and improve their potential to attract and retain nurses. Longitudinal research is however needed and we recommend that qualitative nursing research methods are used to deepen the understanding of unit's workplace culture prior to any implementation of cultural change.

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Conflict of interest

No conflict of interest has been declared by the authors.

Author contributions

NH, TS and EP: Study design. NH: Data collection. NH, MH and PS: Analysis. NH, TS, EP, MH, BM and PS: Manuscript preparation.

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Influence of workplace culture on nursing-sensitive nurse outcomes in municipal primary health care

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Influence of workplace culture on nursing-sensitive nurse outcomes in municipal primary health care

Aim To explore the influence of workplace culture on sickness absences, overtime work and occupational injuries in municipal primary health care.
Background The need to improve nursing sensitive outcomes has been highlighted. Therefore, an adequate understanding of the influence of workplace culture on nursing-sensitive nurse outcomes is essential for nurse managers to meet the requirements of improving nursing outcomes.
Methods A cross-sectional survey design was used to incorporating the data from 21 inpatient acute care units of nine organisations at the Finnish municipal primary health care system from 2011 to 2012.
Results Findings emphasise in particular the importance of the practice environment as being an interpretative factor for nurses' absences owing to sickness, overtime work and occupational injuries.
Conclusion and implications for nursing management To ensure favourable nursing sensitive outcomes it is essential that there is a shared interest in the unit to invest in the creation of a supportive practice environment. Outcome improvements require a special focus on issues related to nursing management, adequate staffing and resources and intention to leave.

Keywords: outcome assessment, primary health care, work environment

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Introduction

The nursing environment and organisational performance have been prioritized as key issues in addressing the global shortage of nurses (International Council of Nurses 2006). Many studies have shown that positive patient, nurse and organisational outcomes are related to favourable working environment (Verhaeghe *et al.* 2006, Rathert & May 2007), while work demand, a lack of control and support have shown a strong relationship between sickness absence and occupational injury (Way & MacNeil 2006). An adequate understanding of the associated factors of workplace culture that influence on nursing sensitive

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nurse outcomes is therefore essential for nurse managers, in order to meet the requirements of improving nursing sensitive outcomes.

Most of the earlier outcome studies have focused on organisational characteristics while unit-level outcomes have been under-examined (Kirwan *et al.* 2013), despite the fact that it is the units that witness the effects of the decisions about the allocation of resources (Duffield *et al.* 2010). This present study aims to explore the influence of workplace culture on sickness absences, overtime work and occupational injury at the unit level.

Background

Indicators of nursing-sensitive outcomes have been identified at an international level (Kleib *et al.* 2003). This study identifies three of these indicators, namely, sickness absences, overtime work and occupational injuries related to nurses.

The highest sickness absence levels have been found in fields where employees take care of others, as found in nursing (Aronsson & Gustafsson 2005). According to Rugless and Taylor (2011) nurses were shown to have more sickness absences than other staff groups. Some additional studies have shown women to have higher sickness absence rates than men (Laaksonen *et al.* 2010) The majority of earlier research focused on long-term sickness absence, even though short-term sickness (1–3 days) occurs more often, increasing stress levels (Plant & Coombes 2003) and having a negative affect on nursing efficiency and effectiveness (Hurst 2008).

Life situations have been related to absences owing to sickness: separation, divorce or being widowed increased both short- and long-term sickness absences (D'Souza *et al.* 2006). Conversely, good health, a positive effort–reward ratio (D'Souza *et al.* 2006, Schreuder *et al.* 2010) and respect from supervisors (Schreuder *et al.* 2010) have all been positively related to low absence owing to sickness. Strong evidence between absence owing to sickness and other issues have been shown in previous studies, for example, poor workplace climate, exposure to hazardous materials and physical workload (Laaksonen *et al.* 2010), fixed evening work (Merkus *et al.* 2012), high worker demands with low control (Roelen *et al.* 2008, Schreuder *et al.* 2010), gender (Laaksonen *et al.* 2010), high stress levels at work (Rugless & Taylor 2011) and overtime work (Schreuder *et al.* 2010). In contrast to this latter issue, however, the study of Laaksonen *et al.* (2010) also showed that working overtime decreased the risk of short-term sickness absence.

Nursing overtime work has often been used for two reasons: either to handle chronic understaffing or control variation in patient flow (Berney *et al.* 2005). According to the Institute of Medicine's recommendations nurses should work no more than 12 hours in a 24-hour period and no more than 60 hours in a 7-day period to avoid error-producing fatigue (Institute of Medicine 2004). Despite such recommendations, however, in reality many nurses work overtime. For example, an American study found that 6% of nurses worked 60 hours or more weekly, and 6% of them worked over 12 hours/day (Trinkoff *et al.* 2006). de Castro *et al.* (2010) found that 65% of nurses in the Philippines worked over 40 hours weekly and 23% worked longer than 8 hours per shift. However, evidence has shown that long working hours are connected with harmful health outcomes (Dembe *et al.* 2005, Costa *et al.* 2006) and lower performance (Lundstrom *et al.* 2002).

With regard to occupational injury, evidence shows that health care providers are especially at risk of back injuries (Smedley *et al.* 2003) as well as sharps and needlestick injuries (Mustafa *et al.* 2006). de Castro *et al.* (2010) found that 37% of nurses had a work-related injury during the past year and 31% had at least two sickness absence days as of result of an occupational injury or illness.

An increased risk of occupational injury in nursing has been associated with poor work environment (Stone & Gershon 2006), long working hours (Trinkoff *et al.* 2006), shift work (Dembe *et al.* 2006) and unit turnover (Taylor *et al.* 2012).

These earlier studies have highlighted that several aspects of workplace culture (e.g. stress, poor working climate, low control and low staffing) were negatively related to the three selected nursing-sensitive outcome indicators of this study, while managerial support has been shown to reveal a positive relationship.

Aim

This study aimed to explore the influence of workplace culture on sickness absence, overtime work and occupational injuries in municipal primary health care.

Method

Design

This was a cross-sectional questionnaire survey of ward head nurses and nursing personnel, in 21 acute care inpatient units in municipal primary health care.

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Sample

The municipal primary health care setting was selected as these organisations form the core of the Finnish health care system and employ a large number of nurses. The sample represented one-third of the municipal inpatient acute care units in the chosen hospital district. A questionnaire to measure nursing-sensitive outcomes was voluntarily completed from 21 units by 21 ward head nurses; two ward head nurses did not complete the questionnaire. A response rate of 91% was achieved. A total of 206 questionnaires for nursing personnel to measure workplace culture were returned from the same units as ward head nurses, giving an average response rate of 68%. Casual nurses were not included in the sample.

Data collection

In each unit, the data were collected by two questionnaires over a 1-month period between November 2011 and March 2012. The participants received a questionnaire and return envelope. Two reminder calls were made to ward head nurses who were responsible for issuing the questionnaires to personnel.

Instruments

The selection of nurse-sensitive outcome indicators used in the questionnaire was adapted from the evidence on nursing minimum data sets presented by Kleib *et al.* (2003). The questionnaire comprised three nursing-sensitive nurse outcome questions concerning (1) sickness absences (short-term sickness absence times and total days of short-term sickness absences), (2) overtime work and (3) occupational injuries. These aspects were measured in numbers and hours, and data pertained to one selected month.

The questionnaire to measure workplace culture was developed by Slater and McCormack (2006) and consisted of 78 items with a seven-point Likert scale. Items were divided into 19 constructs. Constructs comprised a demographics section and three overarching factors comprising nurses' stress, job satisfaction and the practice environment.

Data analysis

Descriptive statistics were used to describe the characteristics of the respondents and each of the 19 constructs of the Nursing Context Index (NCI) questionnaire (Slater & McCormack 2006). Cronbach's alpha was used to assess the internal consistency of each factor. Spearman correlation was used to assess the association between each unit's three overarching factors and selected nursing-sensitive nurse outcomes, as well as between each unit's 19 constructs of workplace culture and selected nursing-sensitive nurse outcomes. In addition, the demographics at unit level were tested with the selected nursing sensitive-nurse outcomes. The data were analysed using SPSS version 20.0 MacOS (Chicago, IL, USA).

Validity and reliability

The outcome data of the units were gathered from ward head nurses using an instrument developed for this study. At the time of data collection, the requested information was not easily available and informants may have used different methods (e.g. patients records, databases, manual documents and their own notes) to gather the data. This may therefore raise a potential reliability issue. Before use the developed instrument was pilot tested by 10 ward head nurses.

The questionnaire to measure workplace culture was used for the first time in a Finnish context. It has been previously used and tested elsewhere (McCormack *et al.* 2010). The questionnaire was translated into Finnish using the back-translation method and pilot tested by nursing personnel ($n = 24$) before use (Erkut 2010). The Cronbach's alphas of the three overarching factors were good (0.78–0.93) and those of the 19 constructs were acceptable (0.64–0.93).

Results

Description of nurses and units

The ward head nurses who answered the questionnaire indicated for them were all female ($n = 21$, 100.0%). Sixty-two per cent ($n = 13$) were employed set days and 19% ($n = 4$) on a rotating roster. All participants worked full time but four of the ward head nurses ($n = 4$, 19%) did not identify the shifts they worked.

Most of the nursing personnel who answered the NCI questionnaire were female ($n = 203$, 98.5%). Of the 206 respondents 49.5% ($n = 101$) were licensed practical nurses, 42.2% were ($n = 86$) registered nurses and 8.3% ($n = 17$) were head ward nurses. More than half of the participants (52.4%) were over 45 years old. From the sample, 75.2% ($n = 155$) were employed full-time in the rotating roster and 12.1%

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($n = 25$) had set days or nights; 11.7% ($n = 24$) worked part-time in the rotating roster and 1% ($n = 2$) had set days or nights.

The numbers of selected outcomes per unit are shown in Table 1. The average number of permanent nursing personnel per unit was 18.7, with a variation of between 12 and 35 nursing personnel.

The results of the correlation analysis of relationships between the workplace culture's three overarching factors, 19 constructs and sickness absence, overtime work and occupational injuries are shown in Table 2.

Correlation analysis did not demonstrate any significant relationships between a nurse's age, education, shifts and sickness absences, overtime work or occupational injuries at the unit level.

Workplace culture and influence on sickness absences

In the study, the occurrence of short-term (1–3 days) sickness absences varied between 1 and 14 times per month per unit. The average occurrence of short-term sickness absence was 5.8 times. The total number of days of short-term sickness absence varied between 2 and 34 days, and the average short-term sickness absence for units was 12.8 days. None of the three overarching factors were significantly related to sickness absences. Unit level data concerning the respondents' age, education and shifts are presented in Table 3.

Correlation analysis demonstrated only weak correlations between the constructs of stress and sickness absence. Moderate relationships between the constructs of satisfaction and sickness absence were revealed. Satisfaction with pay and prospects ($r_s = -0.38$, $P \leq 0.01$) revealed a moderate negative relationship with the number of sickness absence times. In other words, dissatisfaction with pay and prospects was related to a greater number of sickness absence times. Satisfaction with pay and prospects ($r_s = -0.34$, $P \leq 0.01$) also revealed a moderate negative relationship with the total number of days of short-term sickness absences, meaning that dissatisfaction with pay and prospects was also associated with a greater number short-term sickness absence days.

Strong relationships between the constructs of practice environment and sickness absence were revealed. Nurse management ($r_s = -0.53$, $P \leq 0.01$), empowerment ($r_s = -0.41$, $P \leq 0.01$) and organisational commitment ($r_s = -0.50$, $P \leq 0.01$) revealed a strong negative relationship with the number of sickness absence times, revealing that dissatisfaction with nurse management as well as feeling less empowered or less committed was related to a greater amount of sickness absence times. Furthermore, a strong negative relationship ($r_s = -0.53$, $P \leq 0.01$), between nurse management and short-term sickness absence days was

Table 1
Prevalence of sickness absences, overtime work, occupational injuries and permanent staff

Units	*Number of short-term sickness absences (1–3 days)/month*	*Total number of days of short-term sickness absences/month*	*Overtime work, hours/month*	*Occupational injuries/month*	*Number of permanent staff*
1	3	9	0	0	18
2	5	7	0	0	17
3	2	4	6	0	15
4	14	28	5	0	35
5	10	18	20	0	19
6	1	2	24	1	19
7	5	12	42	1	21
8	7	12	0	0	21
9	6	11	0	0	21
10	2	25	0	0	24
11	4	6	10	0	17
12	5	13	16	0	17
13	5	10	43	0	15
14	4	7	8	0	14
15	5	9	0	0	18
16	4	10	410	0	17
17	11	34	75	0	21
18	2	5	18	0	12
19	7	13	71	1	12
20	6	11	0	0	20
21	13	22	0	0	20

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Table 2
Correlation coefficient between workplace culture and sickness absences, overtime work and occupational injuries

	Number of short-term sickness absences (1–3 days)/month	*Total number of days of short-term sickness absences/month*	*Overtime work hours/month*	*Occupational injuries/month*
Overall stress	ns	ns	0.352*	ns
Workload	ns	ns	0.428*	0.309*
Inadequate preparations	ns	ns	ns	ns
Lack of staff support	ns	ns	ns	ns
Conflict with other nurses	ns	ns	ns	ns
Uncertainty regarding treatments	ns	ns	ns	0.518*
Work–social life balance	ns	ns	ns	ns
Working environment	ns	ns	0.509*	ns
Lack of communication and support	ns	ns	0.556*	0.427*
Career development	ns	ns	0.392*	ns
Overall satisfaction	ns	ns	−0.353*	−0.304*
Satisfaction with pay and prospects	−0.384*	−0.341*	−0.309*	ns
Satisfaction with training	ns	ns	ns	ns
Personal satisfaction	ns	ns	ns	−0.583*
Professional satisfaction	ns	−0.330*	−0.552*	ns
Overall practise environment	ns	ns	ns	ns
Adequate staffing and resources	ns	ns	−0.562*	−0.380*
Doctor–nurse relationship	ns	−0.376*	ns	ns
Nurse management	−0.530*	−0.422*	−0.482*	−0.378*
Empowerment	−0.406*	ns	ns	ns
Organisational commitment	−0.495*	ns	ns	ns
Intention to leave	ns	0.561*	0.415*	ns

ns, not significant.
*Correlation is significant at the 0.01 level (two-tailed).

revealed. Thus, dissatisfaction with nurse management was related to greater numbers of sickness absence days. The doctor–nurse relationship ($r_s = -0.38$, $P \leq 0.01$) revealed a moderate negative relationship with the total number of days of short-term sickness absences, revealing that dissatisfaction with the doctor–nurse relationship was associated with a greater number of short-term sickness absence days. A strong positive relationship ($r_s = 0.56$, $P \leq 0.01$) between intention to leave and the number of short-term sickness absence days was observed. A greater intention to leave was thus associated with a greater number of sickness days.

Workplace culture and influence on overtime work

Participating units reported very different amounts of overtime work: eight units indicated that they had no overtime work, while at the same time, one unit reported 410 hours of overtime work. The average overtime work during 1 month per unit was 35.6 hours. The overarching stress factor ($r_s = 0.35$, $P < 0.01$) showed a moderate positive relationship with overtime work, meaning that higher levels of stress were related to higher levels of overtime work. However, the overarching satisfaction factor ($r_s = -0.35$, $P < 0.01$) revealed a moderate negative relationship with overtime work, revealing that nurses who were not satisfied with their work worked more overtime.

Table 3
Unit level data concerning participants' age, education and shifts

Units	*Mean age range*	*Number of LPNs/RNs*	*Shifts worked*
1	36–45	6/7	12*/2†
2	36–45	3/5	7*/1†/1‡
3	46–55	1/1	1*/1†
4	36–45	5/6	9*/2†/1‡
5	36–45	2/7	7*/2†
6	36–45	7/5	10*/2†
7	36–45	8/2	9*/1†/1‡
8	36–45	5/7	11*/2†
9	36–45	6/8	10*/1†/1‡/2§
10	36–45	3/5	8*/1†
11	36–45	6/6	12*/1†
12	36–45	4/1	3*/1†/2‡
13	26–35	4/4	7*/1†/1‡
14	36–45	3/4	7*/2†
15	36–45	4/2	6*/1†
16	36–45	7/2	6*/1†/2‡
17	36–45	6/6	8*/1†/4‡
18	46–55	6/1	3*/2†/3‡
19	36–45	6/1	6*/1†/1‡
20	36–45	7/2	9*/1†
21	36–45	3/4	3*/4†/1‡

LPN, licensed practical nurse; RN, registered nurse.
*Full time; in the rotating roster.
†Full time; days or nights.
‡Part time; in the rotating roster.
§Part time; set days or nights.

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Strong relationships between the constructs of stress and overtime work were revealed. Workload ($r_s = 0.43$, $P < 0.01$), working environment ($r_s = 0.51$, $P < 0.01$) and a lack of communication and support ($r_s = 0.56$, $P < 0.01$) had a strong positive relationship with nurses' overtime work. In other words, higher workload, bad working environment and a lack of communication and support were related to increased overtime work. Career development ($r_s = 0.39$, $P < 0.01$) revealed a moderate positive relationship between overtime work, meaning that a lack of career development was associated with more overtime work.

A connection between the overarching satisfaction factor and overtime work was seen through professional satisfaction and satisfaction with pay and prospects. A strong negative relationship ($r_s = -0.55$, $P < 0.01$) was revealed between professional satisfaction and overtime work. This indicated that dissatisfaction with professional support was related to greater amounts of overtime work. A moderate negative relationship ($r_s = -0.31$, $P < 0.01$) was observed with satisfaction with pay and prospects and overtime work, revealing that dissatisfaction with pay and prospects was also related to greater amounts of overtime work.

Strong relationships between the constructs of practice environment and overtime work were revealed. A strong negative relationship was observed between adequate staffing and resources and nurse overtime work ($r_s = -0.56$, $P < 0.01$), and similarly between nurse management and nurse overtime work ($r_s = -0.48$, $P < 0.01$). In other words, lower levels of staffing and resources and the dissatisfaction with nurse management were associated with higher levels of nurse overtime work. Intention to leave ($r_s = 0.42$, $P < 0.01$) revealed a strong positive relationship between overtime work. Thus a greater intention to leave was associated with high levels of overtime work.

Workplace culture and influence on occupational injuries

Only three participating units reported nurses' occupational injuries. The overarching satisfaction factor ($r_s = -0.30$, $P < 0.01$) had a moderate negative relationship with occupational injuries. In other words, a higher level of job satisfaction was related to lower levels of occupational injuries.

Both moderate and strong relationships between the constructs of stress and occupational injuries were revealed. Workload ($r_s = 0.31$, $P < 0.01$) had a moderate positive relationship with occupational injuries and a higher level of workload was associated with higher levels of occupational injuries. Uncertainty with treatments ($r_s = 0.52$, $P < 0.01$) had a strong positive relationship with occupational injuries, and were was thus related to a higher incidence of occupational injuries.

Connection between constructs of satisfaction and occupational injuries was observed through personal satisfaction. Personal satisfaction ($r_s = -0.58$, $P < 0.01$) was revealed to have a strong negative relationship with occupational injuries. In other words, a higher level of personal satisfaction was associated with fewer occupational injuries.

Moderate relationships between the constructs of practice environment and occupational injuries were revealed. Adequate staffing and resources ($r_s = -0.38$, $P < 0.01$) and nurse management ($r_s = -0.38$, $P < 0.01$) were revealed to have a moderate negative relationship with occupational injuries. Thus, a good level of staffing and resources, and a satisfaction with nurse management, were both associated with fewer occupational injuries.

Discussion

Findings indicate that workplace culture is related to nurses' sickness absences, overtime work and occupational injuries. Some constructs of nurses' stress show a relationship with overtime work and occupational injuries, while several constructs of satisfaction and practice environment relate to sickness absences, overtime work and occupational injuries.

The results of this study clearly emphasise the importance of nurse management. Findings show that nurse management is negatively related to all of the selected nursing-sensitive outcomes. A negative perception towards nurse management seems to increase sickness absences, overtime work and occupational injuries. Schreuder *et al.* (2011) also found nurse managers' leadership style to be associated with sickness absence of nursing personnel. It can be argued that ward head nurses face various expectations in their role, as the role has changed from a managerial position to one of leadership. Similarly, there are ongoing changes in organisational structures. Therefore, it is essential that expectations of nurse management are clarified from the perspective of both staff and ward head nurses.

This study showed a strong positive relationship between intention to leave, the number of sickness days and overtime work. These findings are consistent with those of Flinkman *et al.* (2010) and Simon *et al.* (2010) who found that intention to leave was strongly related to personal and work/home factors. These

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findings should be acknowledged because there is growing evidence that levels of nurse shortages and turnover may increase in coming years (Simoens *et al.* 2005). Thus it is essential that rates of sickness and overtime are continuously monitored and early intervention should be advocated. Findings also show a strong negative relationship between both empowerment and organisational commitment, and the number of short-term absences owing to sickness. It can therefore be assumed that if the levels of empowerment and commitment of nurses can be increased at the unit level, it would have some effect on short-term absences owing to sickness.

As well as an intention to leave, workload, working environment and a lack of communication also show a strong positive relationship with overtime work. Personal satisfaction, an adequate level of staffing and resources and the perception of nurse management reveal a strong negative relationship with nurse overtime work. As a whole, however, findings indicate that workplace culture plays an important role in overtime work. In earlier studies, overtime work has been associated with error-producing fatigue (Institute of Medicine 2004), adverse health outcomes (Dembe *et al.* 2005, Costa *et al.* 2006) and lower performances (Lundstrom *et al.* 2002), so further attention to this area is merited, especially in units where high levels of overtime work have been found.

The findings show that an uncertainty about treatment and a lack of communication are positively related to occupational injuries, and that personal satisfaction shows a strong negative relationship with occupational injuries. Clarke *et al.* (2002) showed that occupational injuries were more likely to happen with inadequate levels of nurse staffing, and a moderate negative relationship was also revealed in this study. Furthermore de Castro *et al.* (2010) found that nurses who worked more frequent mandatory or unplanned overtime or non-day shifts were at higher risk of both occupational injury and absences through sickness.

Limitations

The first potential limitation is related to the research design. Current findings appear sensible but within this research design, the possible interference of some other related aspects, such as possible changes in the delivery of nursing care or in organisational structures, cannot be ruled out. Correlation is not causation and relationships such as stress, satisfaction and overtime, while correlated with each other may have an unmeasured reason to explain the relationships. The second potential bias in this study includes the reliability of the data. The lack of a systematic electronic form to gather unit outcomes could be considered a risk factor. Therefore, the questionnaire based on earlier literature (Kleib *et al.* 2003) was developed for this study. To improve the intelligibility of the instrument it was pilot tested with 10 ward head nurses. To strengthen the validity, the NCI questionnaire was translated into Finnish using the back-translation method (Parahoo 2006) and a pilot test was conducted in 10 similar units to those used in this study. The third potential bias is related to sample size. Although the sample represented one-third of the municipal inpatient acute care units in the chosen hospital district, the sample sizes of ward head nurses ($n = 21$) and nursing personnel ($n = 206$) were rather small, which may influence the generalisability of findings.

Conclusion

This study demonstrates that workplace culture is related to nurses' sickness absences, overtime work and occupational injuries. Above all, the findings of this study emphasise the importance of the practice environment as an interpretative factor for nurses' sickness absences, overtime work and occupational injuries. Furthermore the results highlight the significance of nursing management.

Implications for nursing management

To ensure favourable nursing-sensitive outcomes, it is essential that units have a shared interest to invest in the creation of a supportive practice environment by focusing in particular on those issues related to nursing management, adequate staffing and resources and intention to leave.

Source of funding

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Ethical approval

The ethical committee of the Hospital District of Helsinki and Uusimaa granted ethical approval. (158/13/3/00/11). In addition, research permissions were provided by each organisation involved in the study. All

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ward head nurses were contacted directly and a suitable time was arranged for the researcher to visit the unit. During the visit, the purpose of the study was explained to nursing personnel. An introduction letter was attached to each questionnaire, where the study was briefly described and respondents were informed that their participation was voluntary and anonymous, and that any responses would only be reported in aggregates. All questionnaires were returned to the researcher in sealed envelopes. The study conformed to the requirements of the Declaration of Helsinki (WMA 2008).

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The Relationship of Workplace Culture With Nursing-Sensitive Organizational Factors

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OBJECTIVE: The aim of this study is to explore the relations of workplace culture on nursing-sensitive organizational factors.
BACKGROUND: The need for standardized and valid measures for nursing-sensitive organizational outcomes has already been recognized in the literature.
METHODS: A cross-sectional questionnaire survey of 21 inpatient acute care units in 9 organizations at the municipal primary healthcare level was conducted. Participants included licensed practical nurses, registered nurses, and nurse managers.
RESULTS: Workplace culture, especially the overarching factor of stress, correlated with the use of supplemental nursing staff and patients' length of stay.
CONCLUSION: It is essential to find and test workplace-sensitive indicators so that managers will have a wider range of methods to plan and evaluate nursing outcomes.

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Increasing healthcare costs and a decreasing availability of funds due to the global economic crisis have raised the need to clarify the value of nursing care when policy makers aim to cut healthcare spending. Despite limited funding, the significance of nursing to hospital care has in fact gained recognition.[1] A sufficient amount of well-prepared and qualified nurses has been identified as essential for controlling costs and yet providing quality and safe care.[2] During these turbulent times, it is essential to improve the work environment of nurses as a number of studies have shown that it has a significant effect on patient and nursing outcomes[3,4] and, eventually, the success of the organization.[5] The need for standardized and valid measures that assist nurse managers (NMs) to make evidence-based evaluations of the quality and effectiveness of practice has become more urgent.

Previous studies have indicated that nursing care costs account for almost half of the cost of direct care[6] and approximately a quarter of a hospital's operating budget.[7] Emerging complexity of patient care and decreasing lengths of hospital stay (LOSs) have been identified as the primary reasons for increasing nursing costs.[8] Decreases in LOS have been associated with higher nurse-to-patient ratios, a higher number of registered nurses (RNs), increased skill mix levels,[9] and more RN hours per day as contributing factors.[10] In addition to shorter LOS, high occupancy rates and churn challenge nurses to meet the needs of patients. The resultant increasing stress among nursing staff has been linked with intention to leave their jobs[11] and lower perceptions of work quality and nursing management.[12]

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Aiken et al[13] demonstrated that the high use of supplemental nursing staff might have negative effects on permanent nursing staff and negative or mixed effects on adverse events. The nurse leader's role has been linked to the creation of a positive work environment,[14,15] yet Duffield et al[16] found that nurses also expect their leaders to be experienced nurses.

The study reported in this article explores the relationship between workplace culture and selected nursing-sensitive organizational outcomes, which include LOS, bed occupancy rate, and the use of supplemental (temporary) nurses. The conceptual framework was derived from literature on nursing-sensitive organizational outcome indicators.[17] In addition, structural variables such as inpatient daily charge, number of beds, number of open vacancies, and the length of service of the NM (ward head nurse) were also included when considered important relative to the organizational outcomes. The key variables that were selected and analyzed at unit level are reported in Table 1.

Methods

Study Design

A cross-sectional study design was used for this study. Data were collected between November 2011 and March 2012. In each unit, data were conducted over a period of 1 month.

Samples

The study was conducted in municipal primary health acute care units in a large hospital district in Finland, representing a third of the similar units in the area. Patients in those units are commonly elderly and have chronic illnesses. The average LOS is a few weeks. The study encompassed data from 21 acute care units in 9 organizations. A convenience sample was purposefully selected, dependent on availability. The data were gathered via 2 instruments. Respondents were composed of 21 NMs and 206 nursing personnel, which included RNs and licensed practical nurses (LPNs).

Instruments and Reliability

Organizational factors were collected through an instrument for NMs developed for this study. Face-related validity and reliability of the developed instrument were evaluated with a group of NMs (n = 3) and then pilot tested with a 2nd group of NMs (n = 10). The instrument comprised questions of organizational outcomes (LOS, bed occupancy rate, and use of supplemental nursing staff) and structural variables (inpatient daily charge, number of beds, open vacancies, and the length of service of NM). Because of lack of extensive database, NMs used various methods to collect the outcome information. For this reason, the NMs were instructed individually how to report administrative data to ensure consistency in data collection.

Table 1. *Prevalence of Selected Organizational Outcomes and Structural Variables per Unit*

	Outcomes				Structural Variables			
Units	Length of Stay (d)	Bed Occupancy Rate	Supplemental Nursing Staff on Shift	Supplemental Nursing Staff Not Available on Shift	Inpatient Daily Charge (Euros)	Number of Beds	Open Vacancies	Length of Service of NM (y)
1	9	100	24	0	337	27	0	5
2	14	100	82	0	337	27	0	5
3	16	100	60	0	337	27	0	0.6
4	62.4	102.3	24	5	337	25	0	0.9
5	Missing	100.4	24	5	337	25	0	9
6	20	106	24	5	168	25	0	0.8
7	17.6	105.3	22	2	168	30	2	5
8	16.1	100.6	37	2	189	27	1	3
9	16.1	100.6	71	4	189	32	2	3
10	12.9	100	5	0	169	20	0	5
11	17.9	95	2	0	169	20	0	15
12	28	92.9	3	1	169	18	0	0.9
13	26.8	96	47	5	150	50	2	1
14	17	104	12	13	145	36	0	30
15	Missing	106	25	0	259	16	0	10
16	25	100	29	3	259	26	1	0.4
17	25	105.8	56	4	259	28	2	4
18	25	100	58	0	259	21	0	0.3
19	59	105.8	23	1	259	27	2	4
20	Missing	100	6	3	259	24	0	6
21	25	104	67	2	259	24	4	4

Conversion rate for Euros for this study: €1.0 = US$1.1285.

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The Nursing Context Index questionnaire for nursing personnel consisted of demographic criteria and 78 items concerning workplace culture.[18] The 78 items were divided into 19 constructs and comprised 3 overarching factors (nurses' stress, job satisfaction, and practice environment). Of 19 constructs, 9 measured nurse stress levels (36 items), 4 measured job satisfaction (18 items), and 6 measured the practice environment (24 items). The questionnaire was back-translated[19] and pilot tested with 24 nurses before beginning the study.[20] This was the 1st time the questionnaire was used in Finland, although earlier, it had been used and tested in the United Kingdom, Ireland, and Australia.[21] Internal consistency was calculated for the 3 overarching factors using Cronbach's α coefficients of the scales, varying between .78 and .93. The Cronbach's α coefficients of 19 constructs varied between 0.64 and 0.93.

Data Analysis

The Nursing Context Index questionnaire's[18] demographics and constructs of workplace culture were described using descriptive statistics. Spearman correlation was used to assess the correlation between each unit's 3 overarching factors, 19 constructs of workplace culture, the selected nursing-sensitive organizational outcomes, and structural variables. Correlation was assessed using unit means. The demographics were also tested at the unit level with selected nursing-sensitive organizational outcomes and structural variables. Units' open vacancies were reconstructed, and units that had no open vacancy were given the value 0 and those that had 1 to 4 open vacancies were given the value 1. Statistical analyses were conducted using SPSS version 20.0 MacOS (Chicago, Illinois).

Ethical Considerations

Permission was granted to use the Nursing Context Index questionnaire.[18] Research permission was granted by each organization involved, and the overall study design was reviewed and approved by the ethical committee of the hospital district. Nurse managers were phoned, and a suitable time was appointed for a researcher to visit the unit. The purpose of the study was described during the unit visits. Data collection packages, including an introduction letter, the questionnaire, and envelopes, were distributed in the units and the respondents' anonymity was assured. The researcher collected the sealed questionnaires. For the analysis, each questionnaire was coded according to healthcare center and unit and the study conformed to the ethical preconditions of the Declaration of Helsinki. [22]

Results

Sample Description

Results were gathered from 21 inpatient acute care units in 9 organizations, representing one-third of the municipal inpatient acute care units in 1 hospital district. The response rate for the nursing personnel questionnaire was 65%.

Most nursing personnel (92.2%, n = 203) who answered the workplace culture questionnaire were female. The mean age range of nurses was 26 to 35 years in 1 unit, 46 to 55 years in 2 units, and 36 to 45 years in the remainder (n = 6). The number of LPNs and RNs who responded varied from 1 to 14 per unit. Of the 220 respondents, 49.1% (n = 108) were LPNs, 43.2% (n = 95) were RNs, and 7.7% (n = 17) were NMs.

In the units, 1 to 12 full-time nurses worked on a rotating schedule, 1 to 4 were full-time in set days or nights, 1 to 4 worked part-time on a rotating schedule, and 4 worked part-time in set days or nights. Altogether, a large majority were employed full-time, in the rotating schedule (76.3%, n = 168) and set days or nights (11.3%, n = 25), with the remainder working part-time, in the rotating schedule (11.3%, n = 25) and set nights or days (1%, n = 2).

All NMs (100.0%; n = 21) in the study were female, employed on set days (62 %; n = 13) and on a rotating schedule (19%; n = 4). All NMs worked full-time; however, 4 of them (19%) did not report the shifts they worked.

Organizational Outcomes and Structural Variables

Patients' mean (SD) LOS was 24.0 (3.9) days, with mean varying between 9.0 and 62.4 days. The mean (SD) of an inpatient's daily charge was €235.9 (€62.05) (US$266.22), with a minimum of €145 (US$163.64) and maximum of €337 (US$380.32). The number of beds in the units varied between 16 and 50 (mean [SD], 26.5 [7.1]). The mean (SD) bed occupancy rate was 101.2 (3.4), with a minimum of 92.9 and maximum of 106.0.

Nearly 62% of the units reported having no open staffing vacancies. The mean (SD) use of supplemental nursing staff in shifts during observation month was 32.5 (23.3) times, with a minimum of 2 and maximum of 82 times. The mean (SD) of no supplemental nursing staff being available when needed was 2.4 (3.0) times. Of the units, 33% reported that they had supplemental nurses whenever needed, 24% lacked supplemental nurses for 1 to 2 shifts, and 43% reported a lack of supplemental nurses for 3 or more shifts. There was a great deal of variation in how long the NM had worked in their present unit, and length of service varied between 3 months and 30 years, with a mean (SD) of 5.8 (6.6) years. Correlation analysis demonstrated no

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statistically significant relationship between a nurse's age, education, shifts, and the selected nursing-sensitive organizational outcomes at the unit level.

Association Between Workplace Culture, Organizational Outcomes, and Structural Variables

Several associations were found between workplace culture factors and the selected organizational outcomes and structural variables (Table 2). Workplace culture seemed to have a special relationship with both the use of supplemental nursing staff and a patients' LOS in the acute care units. The overarching factor of stress had a relationship with use of supplemental nursing staff and LOS. The overarching factor of satisfaction showed a relationship with bed occupancy rate. Factors relating to the practice environment seemed to have a relationship with LOS.

A strong positive correlation between the constructs of stress and inpatient's daily charge was revealed through the working environment ($r_s = 0.46$, $P < .05$), stress in the working environment was related to a higher inpatient daily charge. The correlation between the constructs of stress and a patients' LOS was observed through work-social life balance. Work-social life balance ($r_s = -0.66$, $P < .01$) revealed a strong negative correlation with LOS, meaning that nurses' stress relating to their work-social life balance was related to shorter lengths of patient stay. A strong positive correlation between the constructs of stress and the number of beds was revealed also through social life balance ($r_s = 0.51$, $P < .05$), meaning that higher nurses' stress levels related to work-social life balance was associated with a higher number of beds in the unit.

A strong positive connection between the constructs of stress and the use of supplemental nursing staff in shifts were observed through workload ($r_s = 0.57$, $P < .01$), work-social life balance ($r_s = 0.45$, $P < .01$), and a lack of communication and support ($r_s = 0.46$, $P < .01$). This means that higher nurses' stress levels were related to a higher use of supplemental nursing staff on shifts. Strong negative connection between the constructs of stress and having no supplemental nursing staff were revealed through workload ($r_s = -0.45$, $P < .05$) and inadequate preparations ($r_s = -0.52$, $P < .05$). In other words, the stress related to workload and inadequate preparation was related to those shifts where there was no supplemental nursing staff available.

A strong positive correlation between the constructs of stress and the length of service of the NM was observed through inadequate preparation ($r_s = 0.46$, $P < .05$), meaning that nurses' experienced stress with inadequate preparation was related to the longer length of work experience of the NM in the unit.

Strong negative connection between the constructs of satisfaction and bed occupancy rate was revealed through professional satisfaction ($r_s = -0.47$, $P < .05$), meaning that nurses' higher professional satisfaction was associated with lower bed occupancy rates. Strong negative connections were also seen between the constructs of practice environment and LOS, revealed through empowerment ($r_s = -0.52$ $P < .05$) and organizational commitment ($r_s = -0.54$, $P < .05$). This meant that empowered and committed nursing personnel were associated with shorter patients' LOS.

A very strong negative connection between the constructs of practice environment and the use of supplemental nursing staff was observed through adequate staffing and resources ($r_s = -0.71$, $P < .01$), meaning that adequate staffing and resources decreased the need for supplemental nursing staff. Also, a very strong negative connection between constructs of practice environment and number of open vacancy was observed through adequate staffing and resources ($r_s = -0.60$, $P < .01$), meaning that if staffing and resources were not reported as adequate, the units had more open vacancies.

Discussion

Because of cross-sectional study design, causal arguments cannot be made. However, workplace culture factors were associated with some selected nursing-sensitive organizational outcomes and structural variables in the study. The most important finding was a strong correlation of stress factors that were related with various outcomes. Stress factors were especially associated with a units' use of supplemental nursing staff, which has an effect on organizations' expenses. To be more precise, stress relating to workload, work-social life balance, and a lack of communication and support showed a strong association with the use of supplemental nursing staff. Therefore, from the perspective of cost control, it is essential to consider all interventions to reduce nurses' stress. In relation to the use of supplemental staff, the findings of the current study are consistent with those of Aiken et al,[13] who found that a high use of supplemental nursing staff might have negative effects on permanent nurses, although positive influences were also observed. In our study, it was striking that only one-third of the units had supplemental nurses available whenever needed. One of the interesting findings was a positive relationship between inadequate preparations and the length of service of the unit NM. It seems that a long work history of the NM might not guarantee positive outcomes.

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Table 2. Correlation Coefficient Between Workplace Culture and Selected Organizational Outcomes and Structural Variables

	Outcomes				Structural Variables			
Constructs of Workplace Culture	Length of Stay (d)	Bed Occupancy Rate	Supplemental Nursing Staff on Shift	Supplemental Nursing Staff Not Available on Shift	In-patient Daily Charge (€)	Number of Beds	Open Vacancies	Length of Service of NM (y)
Stress	−0.498[a]	ns	0.464[a]	−0.471[a]	ns	ns	ns	ns
1. Workload	ns	ns	0.565[a]	−0.451[a]	ns	ns	ns	ns
2. Inadequate preparations	ns	ns	ns	−0.519[a]	ns	ns	ns	0.460[a]
3. Lack of staff support	ns	ns	ns	ns	ns	ns	ns	ns
4. Conflict with other nurses	ns	ns	ns	ns	ns	ns	ns	ns
5. Uncertainty regarding treatments	ns	ns	ns	ns	ns	ns	ns	ns
6. Work-social life balance	−0.655[b]	ns	0.448[b]	ns	ns	0.506[a]	ns	ns
7. Working environment	ns	ns	ns	ns	0.460[a]	ns	ns	ns
8. Lack of communication and support	ns	ns	0.460[b]	ns	ns	ns	ns	ns
9. Career development	ns	ns	ns	ns	ns	ns	ns	ns
Satisfaction	ns	−0.464[a]	ns	ns	ns	ns	ns	ns
10. Satisfaction with pay and prospects	ns	ns	ns	ns	ns	ns	ns	ns
11. Satisfaction with training	ns	ns	ns	ns	ns	ns	ns	ns
12. Personal satisfaction	ns	ns	ns	ns	ns	ns	ns	ns
13. Professional satisfaction	ns	−0.466[a]	ns	ns	ns	ns	ns	ns
Practice environment	ns	ns	ns	ns	ns	ns	ns	ns
14. Adequate staffing and resources	ns	ns	−0.714[b]	ns	ns	ns	−0.600[b]	ns
15. Doctor-nurse relationship	ns	ns	ns	ns	ns	ns	ns	ns
16. Nurse management	ns	ns	ns	ns	ns	ns	ns	ns
17. Empowerment	−0.523[a]	ns	ns	ns	ns	ns	ns	ns
18. Organizational commitment	−0.537[a]	ns	ns	ns	ns	ns	ns	ns
19. Intention to leave	ns	ns	ns	ns	ns	ns	ns	ns

Abbreviation: ns, not significant
[a]Correlation is significant at the .05 level (2 tailed).
[b]Correlation is significant at the .01 level (2 tailed).

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Stress with work-social life balance was also negatively associated with various organizational outcomes and structural variables. This presents a challenge to NMs to organize working shifts in such a way that considers the different situations in a nurse's everyday life as much as possible. Providing nurses with the autonomy to plan their own shifts has been shown to have a positive input on nurses' work-life balance, their retention, productivity, and eventually on organizations' success.[23]

The nursing personnel in this study seemed to be rather satisfied. In public, nurses' work has been considered to be demanding and hard. According to a study of Hinno et al,[24] most nurses consider their work to be challenging. In this study, however, only professional satisfaction was negatively related with bed occupancy rate.

The RN4CAST study in 12 countries in Europe and the United States showed that the working environment had a stronger negative effect on nurse outcomes, for example, staffing.[11] In this study, the nurses' practice environment, nurses' perceived empowerment, and organizational commitment showed a strong negative association with a patients' LOS. Therefore, empowered and committed nursing personnel play an important role on decreasing the LOS, which subsequently influences the organization's financial success.[2] It is essential that NMs support nurses in situations when a patient's LOS may be prolonged because of a lack of follow-up treatment facilities. Relating to such decision-making principles, nurses' levels of autonomy and control over practice have been found to be higher in Magnet®-recognized hospitals, which are recognized for nursing excellence and quality patient outcomes.[25] In the course of economic challenges, it is essential to have a sufficient amount of well-prepared and qualified nurses, who ensure effective cost control but good care.[2]

Study Limitations and Strengths

There are some limitations to this study that warrant consideration. The nonrandomized, cross-sectional design of the study, together with a rather small sample size, may influence the extent to which these findings can be generalized to other settings. The multiplicity of the amount of tests performed can be considered also as a limitation. Although the findings seem reasonable, the research design also enables the interference of aspects, such as possible differences in the delivery of nursing care, types of patients, ward conditions, or in organizational structure. Another limitation is that this study was conducted in acute care settings in 1 country. Cultural variables, including workforce supply and practice models, may influence the outcomes. Findings of this study, however, do support precepts from multiple studies conducted in various cultures and countries.

The strength of the design of this study was that the outcome data and experienced workplace culture data were collected during same month. However, it should be considered whether there was enough time allocated and whether the selected month differs from the other months. The designated months were desired to represent ordinary months; therefore, the timeframe was selected outside the holiday seasons.

Conclusions

The 2 overarching workplace culture factors of stress and satisfaction correlated with some selected nursing-sensitive organizational outcomes and structural variables. However, it is not simple to find organizational indicators to use to measure outcomes of workplace culture. Despite the difficulties, it is essential to continue with attempts to find and test workplace sensitive indicators so that NMs will have a wider range of methods to plan and evaluate nursing outcomes.

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