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

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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

Accepted for publication: 25 February 2014

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
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 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.
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%
(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

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**Table 1**

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

<table>
<thead>
<tr>
<th>Units</th>
<th>Number of short-term sickness absences (1–3 days)/month</th>
<th>Total number of days of short-term sickness absences/month</th>
<th>Overtime work, hours/month</th>
<th>Occupational injuries/month</th>
<th>Number of permanent staff</th>
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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.
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.

### 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 absence, 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
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

This study was supported by grants from the Nurses’ Education Foundation, University of Tampere, Finnish Cultural Foundation and the Pirkanmaa Hospital District. The funders did not have any role in the conduct of the research.

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
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).

References


