THE IMPACT OF ORGANIZATIONAL FACTORS ON JOB SATISFACTIONAND EMOTIONAL BURNOUT AMONG INFECTION CONTROL PRACTITIONERS

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Abstract

Background: Infection control practitioners (ICPs) are a group of specialized nurses fundamental to effective healthcare infection prevention and control initiatives. Much less is known about their working conditions relative to other groups of nurses. Organizational factors may impact ICPs' levels of job dissatisfaction and emotional job burnout and, subsequently, their quality of practice.

The aim of this study: is to measure a range of organizational factors to document the working conditions of ICPs and show how these are linked to job satisfaction and emotional burnout among ICPs.

Methods: the study conducted a cross-sectional study using an online survey. All employed ICPs in 50 of the largest public hospitals in KSA were invited to participate. 153 ICPs completed the survey.

Results: ICPs are moderate to highly satisfied with their job but show high levels of emotional burnout, time pressure, and cognitive demands. Low job satisfaction was associated with less job control, low perceived organizational support, and poor communication. In contrast, emotional burnout was associated with high time pressure and cognitive demands coupled with poor communication.

Conclusions: Organizational context and factors are important to consider when evaluating the impact and implementation of infection control programs.

Keywords: Infection control, Nurses, ICP, Organizational factors, job satisfaction, burnout

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Introduction

Infection control practitioners (ICPs) are fundamental to the success of any hospital-based healthcare infection prevention and control initiative [1, 2]. This group of people, the majority of whom are nurses, are responsible for a variety of duties in a healthcare facility linked to the prevention and control of hospital-acquired infections (HAIs), including direct infection prevention and control activities as well as surveillance, education, policy, research, communication, and administration tasks [1, 2]. However, the working conditions of ICPs in KSA, including the organizational contexts in which they practice, are highly diverse and not well documented [3]. Understanding the organizational factors impacting ICPs and their experience of job satisfaction and burnout is important; the extent to which these individuals are satisfied in their jobs and experience job burnout may be key predictors of the quality of the infection prevention practices they implement and, subsequently, of the rates of HAIs in healthcare facilities [4].

The experience of job dissatisfaction and job burnout are significant problems for nurses. Studies consistently suggest that nurses in Australia experience moderate to high levels of burnout [5-7]. Rates of job dissatisfaction and burnout among ICPs have not been reported in the literature; however, because of the diversity and complexity of ICPs' roles, it is feasible that ICPs' experience of job dissatisfaction and burnout is comparable to, if not higher than, that of nurses in general practice settings [1, 2]. There is a known relationship between nurses' experience of job dissatisfaction and burnout, and reduced quality of patient care. When nurses experience poor job satisfaction and burnout, the quality of care is consistently low [8-10], and patients are more likely to report dissatisfaction with the quality of the care they receive [11].

In the context of infection control there is evidence to suggest that when nurses experience poor job satisfaction and burnout, their compliance with infection control initiatives declines [12]. Specifically, poor job satisfaction and burnout have been associated with higher rates of morbidity and mortality [13]. In the perspective of infection control there is evidence to suggest that when nurses experience poor job satisfaction and burnout, the rates of HAIs may increase [14]. This may be because nurses' experience of job dissatisfaction and burnout results in negative coping behaviors among nurses, such as distancing themselves from work [15]. Therefore, understanding their working environment is important to improve the retention of qualified staff and to maintain high-quality healthcare practices.

There is also a relationship between nurses' experience of job dissatisfaction and burnout and a variety of organizational factors, particularly perceived organizational support (POS). The literature suggests that nurses perceive a supportive organizational culture generally [6, 16-18] and, specifically, where nurses perceive good interdisciplinary collaboration [8], quality management [19], and high levels of safety [11] in their organization. They are more likely to be satisfied with their work and/or report lower levels of burnout.

However, there is little evidence for the impact of organizational factors on stress and burnout among nurses working in infection control and prevention roles specifically, including among ICPs. Furthermore, there is a paucity of research that considers organizational factors other than general POS (or closely related concepts), and no studies from the KSA context. It is these gaps that this research aimed, in part, to address. This study had two aims: First, to provide a descriptive overview of the working conditions of ICPs in KSA by measuring a range of important organizational factors. Second, to examine the relationship between these organizational factors and ICPs' job satisfaction and emotional burnout.

Methods

Data were collected using a quantitative survey. The survey was administered online, Key Survey. Participants were sent personalized emails with a link to the survey. Reminder emails were sent two weeks and one month after the initial email. The survey instructions informed participants that its purpose was to measure their opinions and attitudes about infection prevention and control practices and the support they receive in their hospital. This research was undertaken with approved ethical clearance by the University and the Hospitals' Human Research Ethics Committees. All of the ICPs in 50 of the largest public hospitals in KSA were invited to participate in the study. 153 of the people invited completed the survey.

Measures

The first part of the survey consisted of demographic and background questions including age, years of experience in nursing, years working in infection control, staff supervisory responsibilities, and involvement in hand hygiene auditing. The second part of survey asked

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questions on nine key constructs: two main outcome variables were measured job satisfaction and emotional burnout, and seven predictor variables of perceived organizational support (POS), communication, support from senior management, time pressure, job control, cognitive demands, and safety climate.

Job satisfaction was evaluated using a one-item measure developed by Warr et al., (1979) [20]. Participants were asked, 'How do you feel about your job, all things considered?' Participants answered this question using a five-point Likert scale, from 'not at all satisfied' (1) to 'extremely satisfied, couldn't be more satisfied' (5). Emotional burnout was evaluated using a validated one-item measure developed by Rohland et al., (2004) [21]. Participants were asked to select one statement on a scale of 'I enjoy my work…' (1) to 'I feel completely burned out and often wonder if I can go on…' (5). This question was designed to assess participants' self-perceived level of burnout based on symptoms such as stress, exhaustion frustration, etc. [21]. We thus refer to this construct as emotional burnout. This non-proprietary measure has also been validated against the single-item measure of emotional burnout on the widely used and cited Maslauch Burnout Inventory [22, 23].

In addition to these two key outcome variables, seven predictor variables were measured in this study: POS, communication, support from senior management, time pressure, job control, cognitive demands, and safety climate. To measure POS, an 8-item scale was used; this was a shortened version of the full 36-item scale developed by Eisenberger et al., (1986) [24]. The scale asked participants to rate eight items on a seven-point Likert scale, from 'strongly disagree' (1) to 'strongly agree' (7). Items included: 'The hospital cares about my wellbeing' and 'My hospital would forgive an honest mistake on my part'.

Communication about infection prevention and control practices was measured using four items taken from scales developed by Kho et al., (2005) [25] Singer et al., (2003) [26], and Gaba et al., (2003) [27]. The questions asked participants to rate items on a five-point Likert scale, from 'strongly disagree' (1) to 'strongly agree' (5). Items include: 'I know the proper channels to direct questions regarding hand hygiene' and 'Good communication flow exists down the chain of command regarding hand hygiene'.

Perceived support from senior management was measured using eight items taken from scales developed by Kho et al., (2005) [25] and Singer et al., (2003) [26]. The questions asked participants to rate items on a five-point Likert scale, from 'strongly disagree' (1) to 'strongly agree' (5). Items include: 'Senior management has a clear picture of the risk associated with poor hand hygiene' and 'My suggestions about hand hygiene would be acted upon if I expressed them to senior management'. To measure time pressure, three questions were taken from a tool developed by Cousins et al., (2004) [28]. The questions asked participants to rate items on a seven-point Likert scale, from 'never' (1) to 'always' (7). Items included: 'I have unachievable deadlines' and 'I have to neglect some tasks because I have too much to do'.

To measure job control, three questions were taken from a tool developed by Cousins et al., (2004) [28]. The questions asked participants to rate items on a seven-point Likert scale, from 'never' (1) to 'always' (7). Items included: 'I have a choice in deciding what I do at work' and 'I have a choice in how I do my work'. Cognitive demand was measured using four questions taken from a tool developed by [29]. The questions asked participants to rate items on a seven-point Likert scale, from 'never' (1) to 'always' (7). Items include: 'Do you have to concentrate all the time to watch for things going wrong?' and 'Do you have to react quickly to prevent problems arising?'

Hospital safety climate was measured using a 16-item questionnaire developed by [30]. The questions asked participants to rate items on a six-point Likert scale, from 'strongly disagree' (1) to 'strongly agree' (6). Items include: 'My hospital reacts quickly to solve the problem when told about infection-related risks' and 'My hospital tries to continually improve hand hygiene compliance in each ward'.

All scale reliabilities were determined using Cronbach's statistics. Two separate multiple-regression analyses were conducted to predict job satisfaction and emotional burnout. The seven predictor variables: POS, time pressure, job control, communication, hospital-level safety climate, cognitive demands, and support from senior management were added to the model simultaneously in one block. Age and years of experience in infection control were entered into the model when they were significant with the outcome variable. Results are presented separately for each outcome measure in the following section. A series of one-way ANOVAs (analysis of variance) were used to test for state/territory differences in all of the measures but there were no notable differences between the states/territories. We used Green's rule of thumb (medium effect) to test the necessary sample size for the entire model: n = 50 + 8* predictors = 50 + 8*9 = 122 [31]. We

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included 9 predictors when there are only 7 used to allow for the demographic variables. Our sample is therefore an adequate sample size to test the model and the significance of the predictors.

Results

Demographic and background data revealed that ninety-three percent of the sample was female, the ages of the participating ICPs ranged from 26 to 65 years, with a median of 44 years. The ICPs had an average of 22.5 years of nursing experience, ranging from 5 to 44 years. All participating IPCs had at least 6 months of work experience in their current hospital; this was deemed necessary to ensure they had the minimum knowledge and experience of their workplace and infection control practices required to answer the survey questions meaningfully.

Table (1) shows the scale reliabilities for the seven organizational factors. All reliabilities were acceptable and met Nunnally's criterion [32, 33]. **Table (2)** shows the means and standard deviations for all measures. **Table (3)** shows the correlations between the two main outcome measures. There were significant bivariate correlations between job satisfaction and all predictor variables except cognitive demands, age, and years of experience. All are positively associated with job satisfaction except time pressure as would be expected. For job burnout, all seven organizational predictors were

significantly correlated in the expected directions. Age and years of experience were not significantly correlated with burnout.

Most of the participating ICPs reported being 'just about satisfied' (28 %, n = 42), 'quite satisfied' (24 %, n = 36) or 'very satisfied' (36 %, n = 54) with their work. Concerning predicting the overall job satisfaction of the ICPs, the regression model was significant with the combination of all nine variables able to explain 50 % of the variance in job satisfaction, R= .71 (R2 = 0.50), F (7,140) = 20.37, p < .001.

Table (4) shows three variables of communication, job control, and POS are significantly related to job satisfaction for ICPs. The other variables are not significant predictors of job satisfaction. Most of the participating ICPs (60 %, n = 89) reported being burned out 'occasionally' (mean 2.14, SD 0.87). Concerning predicting the overall job burnout of ICPs, the regression model was significant with the combination of all nine variables able to explain 37 % of the variance in job satisfaction, R = .61 (R2 = 0.37), F(9, 137) = 8.92,p < .001. **Table (5)** High time pressure and cognitive demands coupled with poor communication are significantly related to high emotional burnout for ICPs. The other variables are not significant predictors of emotional burnout.

Table (1): Scale reliabilities for predictor variables

	Scale	Items	Cronbach's alpha
1	Perceived organizational support	8	0.93
2	Communication	4	0.82
3	Senior management support	8	0.91
4	Time pressure	3	0.88
5	Job control	3	0.82
6	Cognitive demands	4	0.78
7	Safety climate	16	0.94

Table (2) Descriptive statistics for variables

Variable	N	Mean	SD
Perceived organizational support	153	4.56	1.137
Communication	153	4.04	0.836
Senior management support	153	3.75	0.89
Time pressure	149	4.04	1.414
Job control	149	4.89	1.245
Cognitive demands	149	5.85	0.875
Safety climate	151	5.10	1.09
Job satisfaction	148	2.14	0.87
Job burnout	148	3.08	1.04

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Table (3): Correlations between organizational variables and the two main outcome measures

Variable	Job Satisfaction	Burnout
Organizational support	0.58***	-0.30***
Communication	0.51***	-0.33***
Senior management support	0.46***	-0.17*
Time pressure	-0.29***	0.49***
Job control	0.55***	-0.25**
Cognitive demands	0.01	0.28**
Hospital safety climate	0.46***	-0.27**
Age	0.08	0.16
Years of experience	0.06	0.15

*$p < .05$ ** $p < .01$ *** $p < .001$

Table (4): Regression model predicting job satisfaction in infection control practitioners

Variable	Beta	T
Perceived organizational support	0.229*	2.53
Communication	0.223*	2.23
Senior management support	0.122	0.44
Time pressure	-0.123	-1.85
Job control	0.363***	5.38
Cognitive demands	0.09	-1.19
Safety climate	-0.001	0.003

*$p < .05$ ** $p < .01$ *** $p < .001$

Table (5) Regression model predicting job burnout in infection control practitioners

Variable	Beta	T
Perceived organizational support	-0.11	-1.08
Time pressure	0.33***	4.18
Job control	-0.14	-1.86
Communication	-0.26*	-2.31
Safety climate	-0.02	-0.15
Cognitive demands	0.17*	2.05
Support senior management	0.097	0.84
Age	0.23	1.54
Years of experience	0.1	-0.85

*$p < .05$; *** $p < .001$

Discussion

In line with the first aim of the present study document the perceptions of the working conditions for ICPs and highlight the organizational context of ICPs in KSA. These results suggest that whilst most ICPs perceive a good safety climate to infection prevention and control practices in their organization, ICPs' perceptions of organization support and support from senior management are moderate and variable, most are under significant time pressure, and most experience high cognitive demands. Job satisfaction is moderate, although variable but is not related to age or years of experience in the job. Concerning the second aim, we show that low job satisfaction is linked to the organizational factors of poor communication, low job control, and low POS. In contrast, emotional burnout is associated with organizational factors of high time pressure and cognitive demands coupled with poor communication. In providing this evidence on the working conditions of ICPs in KSA, this study has made a significant contribution to the literature. Although there is some evidence on the scope of practice of ICPs in Australia [1, 2], there is no literature on the organizational context in which ICPs practice, nor how contextual factors affect ICPs' practice. With the growing role and recognition of ICPs in the KSA context, these findings help add to the body or work

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demonstrating the need to define the scope of the ICP role and responsibilities [3, 4].

Job satisfaction among ICPs is independently predicted by low job control, low POS, and poor communication about infection prevention and control practice. Job burnout among ICPs is predicted by high time pressure and cognitive demands coupled with poor communication. Organizational support by Hayes et al., (2015) [6] and Watts et al., (2013) [16] which suggest is a key factor in predicting nurses' experience of job dissatisfaction and burnout, predicted job satisfaction but *not* burnout. Conversely, time pressure was a significant predictor of burnout but not job satisfaction. Job control and communication predicted both job dissatisfaction and burnout.

These results contribute to the understanding of the impact of key organizational factors on ICPs' job experience. These findings are concordant with those in the nursing literature [5, 6] and have implications for the quality of ICPs' infection prevention practices and, potentially, rates of HAIs in healthcare facilities. The most significant organizational factors for both satisfaction and burnout are job control and communication. The literature suggests there are explanations for these relationships. Nurses, regardless of the context in which they practice, have a demanding work environment.

However, where they perceive they have a degree of control over this environment, nurses can approach the difficulties it presents more positively. Therefore, they experience a higher degree of personal accomplishment, which is a key factor in job satisfaction and burnout [34]. Communication may similarly impact job satisfaction and burnout, as communication is fundamental in enabling nurses to respond effectively to the challenges in their environment and, therefore, in promoting their sense of personal accomplishment [35]. Although there is no literature relevant to ICPs specifically, these findings can be feasibly extrapolated from the broader nursing to the specific ICP context.

It is interesting to note that although our study suggests job control and communication are predictive of job satisfaction and burnout among ICPs, the participating ICPs report both moderately high job control and very good communication practices in their organizations. Indeed, this could demonstrate a survival and selection effect such that only the ICPs that can work with control continue in these positions as well as them being the ones most likely to answer the survey.

The findings for the second aim on the organizational factors that predict job dissatisfaction and burnout among ICPs cannot be linked to outcome measures such as rates of HAIs. Although data on rates of HAIs in the participating hospitals is available from our concurrent evaluation, the literature suggests there is indeed a relationship between organizational factors, stress/burnout, and HAIs [13, 14, 36] due to the number of confounding variables involved in this study, identifying clear relationships between our predictor and outcome variables is problematic. It could be the case that cognitive demands drive burnout but equally, it could be the other way around. The direction of the relationship is not able to be ascertained in this study.

These findings may be used to modify national infection prevention and control programs to suit local organizational contexts, to help retain ICP staff, and to improve ongoing training. These findings are also important in improving the effectiveness of infection control programs implemented in healthcare facilities including in terms of promoting ICPs' compliance with infection control practices and, potentially, achieving reductions in the risk of HAIs.

Conclusions

Understanding the working conditions of ICPs is fundamental to a successful hospital infection prevention and control program. This study has provided evidence on the perceived working conditions of ICPS and discussed the associations between several organizational factors and job satisfaction and emotional burnout. Although this study cannot ascertain which organizational factors among ICPs cannot be linked to outcome measures (e.g. rates of HAIs). Overall, these findings represent an important contribution to understanding the working conditions of specialized nursing groups.

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