Determinants of burnout among public hospital nurses

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ABSTRACT

Objective
The present study extends our knowledge of the main
determinants of burnout among nurses working in
public hospitals and investigates the impact of work
support on the stress-burnout relationship.

Design
A cross-sectional, survey design.

Setting
Data were collected from three public hospitals in
south east Queensland, Australia.

Subjects
A convenience sample of 273 nursing staff (235
females, 38 males) participated in the study.

Main outcome measures
The influence of work stressors (ie. job-specific
stressors and role stressors) and work support (ie.
supervisor and coworker support) on burnout amongst
public hospital nurses.

Results
Overall, nurses reported moderate levels of burnout
(emotional exhaustion, depersonalisation and reduced
personal accomplishment). Hierarchical regression
analyses revealed that socio-demographic factors play
a small, but significant role in predicting burnout. Role
Overload, Job Conflicts and Role Boundary contributed
to higher levels of Emotional Exhaustion. Role
Boundary and Professional Uncertainty contributed to
higher levels of Depersonalisation and Role Boundary
and Role Ambiguity contributed to lower levels of
Personal Accomplishment. Only Supervisor Support
had a significant main effect on Depersonalisation and
Personal Accomplishment. No evidence was found to
indicate that work support had a buffering effect on
the stress-burnout relationship.

Conclusions
The results highlight the need for organisational
interventions to reduce the workload placed on nurses.
Supervisors are in a better position than co-workers to
reduce burnout among nurses by clearly outlining the
boundaries and expectations of the nursing role.

INTRODUCTION

Workplace reforms to improve the quality and safety of health care services have only heightened the pressures placed on nurses in recent years. Advances in technology and practice and increasing demands for services and accountability (Harris et al 2002; Lloyd et al 2002) have resulted in nurses engaging in further specialised training and in the provision of more complex and diverse care (Duckett 2004). De Rijk et al (1998) proposed that prolonged exposure to stressful situations form an excellent breeding ground for burnout in nurses. It is therefore important to explore factors that contribute to the development of burnout (eg. work stressors), but also to examine potential coping resources that may assist in the reduction or prevention of burnout (eg. social support) before developing and implementing appropriate stress reduction interventions.

BACKGROUND

Definition of Burnout

Burnout is not a symptom of work stress; it is the end result of unmanaged work stress (Altun 2002). It is primarily found in helping professions where individuals are required to work closely with others in an emotionally charged environment. The most widely used and accepted definition of burnout is the multidimensional conceptualisation developed by Maslach (Maslach et al 1996; Maslach and Jackson 1986) which identifies components of emotional exhaustion, depersonalisation and reduced personal accomplishment. *Emotional exhaustion* involves feelings of being emotionally overextended and exhausted by one's work. *Depersonalisation* refers to the development of impersonal and unfeeling attitudes toward recipients of one's service. Feelings of reduced *personal accomplishment* occur when an individual experiences a decline in his or her feelings of competence and successful achievement in working with people. Burnout has been implicated in the reduction in quality of care, absenteeism and job turnover (Gillespie and Melbie 2003; Altun 2002). Ultimately, this compromised standard of care

impacts on the effectiveness and success of health services (Raiger 2005; Akroyd et al 2002).

Work stressors and burnout

Several nursing studies have investigated the relationship between work related stressors and burnout. Some researchers argue that job-specific stressors have the greatest impact on individual strains because they are most salient to employees in a particular job. Not surprisingly, researchers have primarily relied on stress scales specific to the nursing profession to investigate work-related determinants of burnout. Other researchers however have investigated generic stressors associated with the role of nursing, such as role overload, role conflict and role ambiguity. However, few studies (eg. Kilfedder et al 2001; Beehr et al 2000) have explored both job-specific and role stressors simultaneously. The present study addresses the need to examine whether certain job-specific stressors and generic role stressors are differentially related to burnout and which types of stressors explain more of the variance.

Social Support

The nursing stress literature identifies social support as a useful coping resource in managing stressful situations within the workplace and reducing the harmful consequences of stress on well-being (Joiner and Bartram 2004). Most occupational stress studies consider supervisors and/or colleagues to be the two major sources of support for employees, proposing that in dealing with stressors at the workplace, organisational sources will provide more support than family and friends outside of the workplace (Ellis and Miller 1994). This is because supervisors and work colleagues are able to provide support in the form of pertinent information and feedback, practical assistance, and/or emotional support relevant to the stressful work situation (Joiner and Bartram 2004; Greenglass and Burke 2002).

Disagreement exists however, as to how social support assists individuals in ameliorating the detrimental effects of burnout. Some researchers have reported a 'main' effect, suggesting that support

reduces burnout regardless of the intensity of the work stressors experienced. Others have found a 'buffering' or 'moderating' effect in which social support interacts with work stressors to affect burnout. From this perspective, social support does not necessarily lower the level of experienced stress but instead assists the employee to cope with the stressful situation. Hence, the impact of social support is expected to be greater for those experiencing high levels of stress. Although empirical studies have consistently supported the main effect model, there has been little support for the buffering effect. The present study examines the effect of different sources of work support on the stress-strain relationship.

METHOD

Research Design

The present data forms part of a larger scale cross-sectional study using a mixed-method design comprising of both qualitative and quantitative data (Spooner-Lane 2004). The findings from the qualitative data were used as a basis for compiling a contextually relevant survey for nurses to assess the main variables of interest in this study. For the purpose of this paper, only the findings from the quantitative data are presented.

Participants

A convenience sample of 273 nursing professionals (235 females, 38 males) from two large public hospitals and one smaller public hospital from south east Queensland was used. The majority were employed in the surgical division (n=121, 44.3%), followed by critical care (n=87, 31.9%), medical (n=29, 10.6%), maternity (n=20, 7.3%), administration (n=8, 2.9%), other (n=5, 1.8%) and oncology (n=3, 1.1%). The majority of participants were registered nurses (97.5%), working full-time (64.6%), with five years or more nursing experience (76%) and aged between 30-39 years (28.3%). The overall response rate was 67.74 percent.

Questionnaire

Following approval from the hospital and university ethics committees, participants completed a self-report questionnaire containing the following scales, as well as demographic questions (age, gender, employment status, hospital ward, nursing experience).

Job-specific Stressors

Wolfgang's (1988) Health Professions Stress Inventory was used to measure nurses' perceptions of job-specific stressors. The 30 item inventory provides a measure of the amount and sources of stress experienced specifically by health care professionals. Respondents answer how often they find each situation to be stressful in their work setting using a five-point Likert scale, ranging from 0 (never/rarely) to 4 (very often). For the purpose of the present study, the wording of item 4 ('Not receiving the respect or recognition that you deserve from the general public') was slightly modified to make it more relevant to nurses in this study. The words 'the general public' were replaced by the word 'physicians.' Items may be totalled to give a global measure of job stress, however in the present study, principal axis factor analysis with an oblique rotation revealed a four factor solution explaining a total 36.87% of the variance (Spooner-Lane and Patton 2005). Professional Recognition (11 items, 24.24% of the variance) measures the lack of recognition and support provided by other health care professionals and the lack of opportunity to contribute to important job related decisions. Job Conflicts (9 items, 5.84% of the variance) measures expectations associated with caring for patients and job demands that are conflicting or difficult to meet. Professional Uncertainty (8 items, 3.93% of the variance) primarily relates to the unpredictability and uncertainty associated with treating patients. Interpersonal Conflict, (2 items, 2.84% of the variance) measures the conflict that may arise as a result of working closely with supervisors, administrators and co-workers. Since the present study aimed to investigate specific job stressors in relation to burnout, the four subscales were used.

Role Stressors

Role stressors were measured using the Occupational Roles Questionnaire (ORQ), one of three subscales from Osipow and Spokane's (1987) Occupational Stress Inventory (OSI). The ORQ comprises six subscales, three of which; role overload, role ambiguity, and role boundary, each comprising 10 items, were examined in this study. Role overload measures the extent to which an individual is able to accomplish expected work loads. Role ambiguity measures the extent to which the priorities, expectations, and evaluation criteria are clear to the individual, and role boundary measures the extent to which the individual is experiencing conflicting role demands and loyalties in the work setting. Responses were made on a 5-point Likert scale ranging from 1 (never or rarely) to 5 (most of the time). Each subscale scores in a positive direction, with higher scores indicating higher levels of stress.

Social Support

To adequately reflect nurses' perceptions of support received at work, items were taken from established social support scales (King et al 1995; Ray and Miller 1994; Shinn et al 1989). The 12 items comprising the Co-worker Support scale were the same as those used for the Supervisor Support Scale, however the word 'supervisor' was replaced by the words 'my co-workers.' Participants responded on a 5-point Likert scale (1=strongly disagree to 5=strongly agree) the degree to which they receive support at work. Items are totalled to give a global measure of supervisor and co-worker support with higher scores representing higher levels of support.

Burnout

The Maslach Burnout Inventory - Human Services Survey (MBI-HSS) (Maslach et al 1996) is a 22-item self-report instrument which yields three separate subscales: Emotional Exhaustion, Depersonalisation and reduced Personal Accomplishment. Participants rate on a 7-point response format how often they feel a particular way about their job, with the range being 0 (never) to 6 (every day). High levels of burnout are reflected by high scores on the Emotional Exhaustion and Depersonalisation subscales and by low scores on the Personal Accomplishment subscale.

Data Analysis

Using SPSS, descriptive statistics were used to analyse the total mean, standard deviation, and internal reliability coefficients for the total scores on the supervisor and co-worker support scales and the subscales of the MBI, HPSI and ORQ. Hierarchical multiple regressions were used to evaluate the unique main effects of work stressors and work support on each dimension of burnout and the moderating effects of work support on the relationship between work stressors and burnout.

RESULTS

Summary Data

Table 1: Means, Standard Deviations, and Reliability Coefficients for the Independent and Dependent Variables (n = 273)

Scale	Scale Dimensions	Mean	SD	α
MBI	Emotional Exhaustion	23.01	11.17	0.90
	Depersonalisation	7.75	5.89	0.71
	Personal Accomplishment	34.62	7.83	0.75
HPSI	Professional Recognition	16.30	8.29	0.84
	Job Conflicts	17.00	6.80	0.79
	Professional Uncertainty	9.48	5.24	0.80
	Interpersonal Conflict	1.88	1.63	0.62
ORQ	Role Overload	26.02	6.82	0.81
	Role Boundary	22.94	6.58	0.73
	Role Ambiguity	19.77	5.57	0.71
Work Support	Co-worker Support	47.85	3.62	0.94
	Supervisor Support	44.11	11.21	0.96

Table 1 demonstrates that with the exception of Interpersonal Conflict, all scales demonstrate adequate internal reliability. A relatively poor internal consistency coefficient for Interpersonal Conflict may be due to the scale comprising only

two items. Participants reported moderate levels of Emotional Exhaustion, moderately high levels of Depersonalisation, and moderately low levels of Personal Accomplishment. The sample reported moderately high levels of Role Overload, moderate levels of Role Boundary and moderately low levels of Role Ambiguity. Participants reported moderately high levels of support from their immediate Supervisor and Co-workers.

Main and Buffering Effects of Work Stress and Work Support on Burnout

Hierarchical multiple regression analysis was performed to examine the main effects of work stressors and work support on each component of burnout. Since the variable Personal Accomplishment was negatively skewed, an appropriate transformation (ie. reflect and square root) was conducted (Tabachnick and Fidell 1996). Using each burnout component as the dependent variable, control variables and independent variables were entered as blocks into the regression equation. Socio-demographic factors that were found to be significantly correlated with each component of burnout were entered in the first step of the analyses thereby controlling for their potential confounding effects. At step 2, the work stress variables were entered. At step 3, the work support variables were entered and finally, the interaction terms were added. Interactions terms were created for variables that were significant at

step 2 and step 3 by multiplying the work stress factors by the work support variables. In line with recommendations for dealing with problems of co-linearity that arise from the use of cross-product terms (Aiken and West 1991), variables were centred before calculating their cross-product terms and conducting the analysis. Centred variables are created by subtracting the sample mean from the variable, resulting in a deviation score with a mean of zero. Only the significant findings are presented in tables 2 to 4.

Emotional Exhaustion

Table 2 demonstrates that Employment Status accounted for a small, but significant 1.8% of the variance in Emotional Exhaustion with full-time nurses reporting higher levels of Emotional Exhaustion than part-time/casual nurses. Adding the work stressors to the regression equation contributed a significant 41.5% increment in the explained variance. Nurses reporting higher levels of Role Overload, Job Conflicts, and Role Boundary have higher levels of Emotional Exhaustion. Supervisor Support was a significant predictor of Emotional Exhaustion, however, the F change value was not significant, indicating that the addition of work support did not significantly improve the prediction of Emotional Exhaustion. No significant buffering effects were found. The final model accounted for 44.7% of the explained variance in Emotional Exhaustion.

Table 2: Hierarchical regression analyses for Emotional Exhaustion

Step Predictor	ß (95% CI)	p-value	Δ R Sq	F ch	p-value for F ch
Step 1			0.018	4.87	0.028
Employ Status					
(full-time, part-time/casual)	-0.14 (-4.61, -0.26)	0.028			
Step 2			0.415	26.54	0.000
Job Conflicts	0.26 (0.21, 0.64)	0.000			
Role Overload	0.29 (0.30, 0.67)	0.000			
Role Boundary	0.24 (0.21, 0.65)	0.000			
Step 3			0.009	2.09	0.126
Supervisor Support	-0.12 (-1.82, -0.03)	0.040			

Overall F (13, 249)=15.50 (p=0.000); R 2 =0.447; adjusted R 2 =0.418; F ch = F change

Table 3: Hierarchical regression analyses for Depersonalisation

Step Predictor	ß (95% CI)	p-value	∆ R Sq	F ch	p-value for F ch
Step 1			0.095	27.31	0.000
Age	-0.31 (-0.41, -0.19)	0.000			
Step 2			0.204	12.25	0.000
Professional Uncertain	0.25 (0.21, 0.64)	0.000			
Role Boundary	0.36 (0.30, 0.67)	0.000			
Step 3			0.029	5.41	0.005
Supervisor Support	-0.18 (-1.82, -0.03)	0.040			

Overall F (12, 248)=10.41 (p=0.000); R 2 =0.335; adjusted R 2 =0.303; F ch=F change

Depersonalisation

Table 3 demonstrates that at step 1, Age (9.5% of the variance) was a significant negative predictor of Depersonalisation with younger nurses reporting higher levels of Depersonalisation than older nursing staff. At step 2, nurses reporting higher levels of Role Boundary and Professional Uncertainty had higher levels of Depersonalisation. Adding the work stressors contributed a significant 20.4% increment in the explained variance. Only Supervisor Support was a significant predictor of Depersonalisation. The inclusion of work support contributed to a slight, but significant, 2.9% increment in the explained variance. No significant buffering effects were found. The final model accounted for 33.5% of the explained variance in Depersonalisation.

Personal Accomplishment

As shown in table 4, only role stressors (17.5% of the variance) were significant positive predictors of Personal Accomplishment. Nurses reporting higher levels of Role Boundary and Role Ambiguity also have lower levels of Personal Accomplishment. At step 2, Supervisor Support was a significant negative predictor of Personal Accomplishment, contributing a slight, but significant, 4% increment in the explained variance. No significant buffering effects were found. The final model accounted for 23.1% of the explained variance in Personal Accomplishment.

DISCUSSION

The findings from the present study support previous research suggesting that nurses are susceptible to burnout. Data revealed that this sample of nurses reported moderate levels of Emotional Exhaustion, moderately high levels of Depersonalisation, and moderately low levels of Personal Accomplishment. This finding is consistent with previous nursing studies in Greece (Iacovides et al 1997), Germany (Bakker et al 2000), Poland (Schaufeli and Janczur 1994), and the United States (Turnipseed and Turnipseed 1997).

Table 4: Hierarchical regression analyses for Personal Accomplishment

Step Predictor	ß (95% CI)	p-value	∆ R Sq	F ch	p-value for F ch
Step 1			0.175	28.19	0.000
Role Boundary	0.26 (0.21, 0.64)	0.000			
Role Ambiguity	0.21 (0.30, 0.67)	0.004			
Step 2			0.040	6.65	0.002
Supervisor Support	-0.25 (-1.82, -0.03)	0.000			

Overall F (5, 262)=15.76, p=0.000; R 2 =0.231; adjusted R 2 =0.217; F ch=F change
Note:. A high total score on Personal Accomplishment relates to a low level of Personal Accomplishment

It was confirmed that work stressors are significant predictors of and differentially related to the three burnout components. Whilst socio-demographic factors explained a small, but significant proportion of the variance (1.8%) in Emotional Exhaustion, work stressors explained more of the variance (41.5%). Specifically, nurses working full-time reported higher levels of Emotional Exhaustion than nurses working part-time or casually. Similar to De Rijk et al's (1998) findings, it is probable that for full-time nurses, exposure to the same stressful situations on a daily basis strengthens their propensity to burn out.

Role Overload, Job Conflicts and Role Boundary were the main determinants of Emotional Exhaustion, with Role Overload explaining most of the variance. These findings are supported by the work of Jenkins and Elliot (2004) and suggest that Emotional Exhaustion is strongly associated with work pressures that directly increase the amount of effort needed to do the job (Cordes et al 1997). Nurses are regularly exposed to multiple stressful work conditions (eg. not having enough staff to adequately provide necessary services, supervising the performance of less experienced workers) and it could be assumed that nurses must consistently maintain a high level of effort in order to meet the everyday demands of their job. Furthermore, the conflict between meeting the demands imposed by the organisation and the needs of the individual patient must certainly increase Emotional Exhaustion (Gil-Monte et al 1995).

Age (10%) and work stressors (20%) both explained a significant proportion of the variance in Depersonalisation. Supporting Koivula et al's (2000) finding, younger nurses reported higher levels of Depersonalisation than older nurses. Schaufeli (1999) proposed that the greater incidence of burnout among younger staff may be caused by a 'reality shock' or identity crisis due to unsuccessful occupational socialisation.

Role Boundary and Professional Uncertainty were the main determinants of Depersonalisation, with Role Boundary explaining more of the variance.

Gil-Monte et al (1995) found conflicting role demands to be a significant predictor of Depersonalisation. These researchers proposed that Depersonalisation is a defence mechanism developed by health care professionals to cope with conflicting role demands and the unpredictability and uncertainty associated with treating patients.

Role Boundary and Role Ambiguity were the main determinants of reduced Personal Accomplishment, with Role Boundary explaining most of the variance. Cash (1989) proposed that employees associate their ability to handle many roles at the one time with personal competence. When an employee is unable to meet these demands they may feel inadequate and consequently develop feelings of diminished personal accomplishment. In addition, Cordes and Dougherty (1993) argue that when one feels unsure of what is expected of one's performance or if little or no feedback is given, it difficult for employees to perceive they are performing at an optimal level. Employees may begin to feel incompetent and start to doubt their ability to cope with extra work demands (Jackson et al 1986).

Based on these findings, it seems pertinent to target younger nurses and nurses working full-time when implementing interventions to prevent burnout. The present study found that generic role stressors are stronger predictors of burnout than job-specific work stressors. Perhaps burnout is primarily attributed to demands in which nurses have relatively little control (eg. multiple, conflicting pressures, ambiguous role expectations, unpredictability associated with patients). Future research should explore the influence of nurses' perceptions of work stress controllability on burnout.

Effects of Work Support on Burnout

Evidence for main effects of work support on burnout was limited. Supervisor Support had a small, but significant main effect on Depersonalisation and Personal Accomplishment. Co-worker Support did not have a significant main effect on the burnout components. Perhaps this is because nursing colleagues are not in a position of power to alter or

change the working situation at hand. Finally, the present study found no evidence of a significant buffering effect of work support on burnout in accord with several studies (El-Bassel et al 1998; Beehr et al 1996; Bourbonnais et al 1998). According to Cutrona and Russell (1990) the buffering effect of social support will only occur if the support available addresses the needs of the situation. Perhaps nursing supervisors and/or nursing colleagues do not have adequate resources or funds to reduce the multiple, often conflicting and somewhat ambiguous demands associated with the nursing role. These issues may be best resolved at a management level.

As the present study however is limited by the use of cross-sectional, self-report surveys, no firm conclusions can be made with regard to causation. Some caution should be taken when interpreting the findings in relation to the nursing population because participants were recruited from a small catchment area and some nursing divisions comprised a small number or respondents. Furthermore, the current study examined only work support. It may be that for nurses, non-work support (ie. family and friends) is more effective than work support in buffering burnout.

CONCLUSION

In the present study, the findings demonstrated that younger nurses and nurses working full-time are particularly vulnerable to burnout. Broad demands of the nursing role have a greater influence on burnout than specific aspects of the nursing job. Supervisor Support is an important coping resource in minimising the effects of Depersonalisation and reduced Personal Accomplishment. Whilst further research is required in determining how supervisor support affects the level of strain experienced by nurses, it is probable that supervisors are in a better position to assist nurses in coping with stressful situations than their nursing colleagues. Together, the results point to the need for organisational interventions aimed at ameliorating the increasing and competing demands associated with the nursing role. Furthermore, nursing supervisors may assist nurses to better manage their workload by educating nurses about the boundaries of their work and clearly defining role expectations.

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