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Organizational change stressors and nursing job satisfaction: The mediating effect of coping strategies

ABSTRACT

Aim To examine the mediating effect of coping strategies on the consequences of nursing and non-nursing (administrative) stressors on the job satisfaction of nurses during change management.

Background Organizational change can result in an increase in nursing and non-nursing related stressors, which can impact negatively on the job satisfaction of nurses employed in health care organizations.

Method Matched data were collected in 2009 via an online survey at two time points (six months apart).

Results Partial Least Squares path analysis revealed a significant causal relationship between Time 1 administrative and role stressors and an increase in nursing specific stressors in Time 2. A significant relationship was also identified between job specific nursing stressors and the adoption of effective coping strategies to deal with increased levels of change-induced stress and strain and the likelihood of reporting higher levels of job satisfaction in Time 2.

Conclusions The effectiveness of coping strategies is critical in helping nurses to deal with the negative consequences of organizational change.

Implications for nursing management This study shows that there is a causal relationship between change, non-nursing stressors and job satisfaction. Senior management should implement strategies aimed at reducing nursing and non-nursing stress during change in order to enhance the job satisfaction of nurses.

Keywords: Change management, nursing and non-nursing stressors, Australia, public and nonprofit sector, job satisfaction

Introduction

Australia's health care (HC) sector continues to experience sector-wide reform (Commonwealth of Australia 2009), which has impacted significantly on HC organisations (Australian Institute of Health and Welfare 2010). Structural changes, changes to patient care regimes, and the ways in which hospitals are funded have created an environment in which recruitment and retention have become pressing issues for the nursing workforce. In response, the Council of Australian Governments established Health Workforce Australia to identify means of reforming the structure, composition and training of the health workforce (Health Workforce Australia 2010). In spite of such efforts, there are significant gaps in understanding the impact of reforms on the nursing workforce (Duffield et al. 2007).

The literature includes comprehensive theorizations about the causes, nature and the negative consequences of stress (see the review by Hayes et al. 2012). Research has shown that there is a negative relationship between stress and job satisfaction (Bartram et al. 2004; Lim et al. 2010). Overall, there is a good understanding about the clinical aspects of nursing stress. However, there is only limited research relating to the impact of sector-wide and organizational-wide health reforms and the increasing administrative demands on nurses as sources of stress and strain. Kuokkanen et al. (2009) found a direct relationship between organizational change and stress levels and Lavoie-Tremblay et al. (2010) discovered a close relationship between organizational change and increased psychological distress. The question arises as to how nurses cope with this additional stress and how this in turn affects job satisfaction.

We address this problem by integrating the literature on change management and occupational stress to examine the effects of organizational change on nursing job satisfaction.

Theoretical framework

Nurses value opportunities to participate in clinical decision-making (Hoffman et al. 2004). This is particularly true for highly qualified nurses and those occupying surgical roles. Participation in decision-making is one of the components of effective change management (Jackson 1983). Karasek and Theorell (1990) noted that workers' active participation in the processes of organizational restructure brings about job control as employees feel that they have input into their future.

Overall, it has been relatively well established that well implemented change can reduce employee strain. Rafferty and Griffin (2006) argued that planned implementation of change is essential because failure to do so creates uncertainty and undue stress. Jackson (1983) showed that participation in change decision-making reduced role-related strain. Both participation in change and the provision of change information are necessary in effective implementation of change (Bordia et al. 2004; Jimmieson et al. 2008). Information about a particular change can help employees contextualize it if the information is useful (Herzig & Jimmieson 2006).

The implementation of change participation and the provision of change information can have a causal effect on employees' stress. Noblet et al. (2006) found that public sector employees report higher levels of administrative and clerical-related stressors, which negatively impacted on job satisfaction and psychological wellbeing. Recently Teo et al.

(2012) provided empirical support for the relationship between participation and change information provision in a nursing context. Public and non-profit nurses experienced non-nursing administrative stressors (such as resource and time-related stressors) during organizational change such as downsizing and delayering. These studies highlight that a lack of participation in change and of change information can create an increase in the administrative stressors experienced by nurses. Hence, we hypothesized that:

Hypothesis 1. Perception of the level of participation in change is positively related to the amount of information about change made available.

Hypothesis 2. Higher levels of participation in the change management process will lead to lower levels of non-nursing related administrative stressors.

Hypothesis 3. The quantity of change information available is negatively related to the levels of non-nursing administrative stressors.

In the current study, role stress is considered as ‘the consequence of disparity between an individual’s perception of the characteristics of a specific role and what is actually being achieved by the individual currently performing the specific role’ (Chang & Hancock 2003, 156). Nurses would experience role stress caused by organizational change, as there is incongruence between their perceived role expectations as a nurse and the need to deal with the increasing expectations of administration stressors. Jackson’s (1983) study has shown that participation in change decision making would reduce the negative effect on role stress.

Nurses also often report stressors arising from their day-to-day nursing work. Gray-Toft and Anderson (1981) identified 34 stressful situations in hospital nursing such as death and dying, dealing with difficult colleagues and patients, inadequate resources and lack of support, conflict with nursing and medical staff, workload and uncertainty with medical treatments.

Several studies (McGrath et al. 2003; Purcell et al. 2011) have used these stressful situations and found significant negative relationships on nursing wellbeing outcomes. This inventory has also been employed on nurses in Australia (Chang et al. 2005; Healy & McKay 2000) and New Zealand (Chang et al. 2005). Overall, these findings have validated the instrument and showed that nursing stress predicted job dissatisfaction. We expect nurses to report nursing stress when they encounter change-induced non-nursing stressors as these stressors result in role ambiguity and role overload. These non-nursing stressors are expected to contribute to nursing stress as they compound the nursing-related stress in day-to-day nursing work. Therefore, we expect role stress to lead to an increase in the presence of more nursing stressors.

Hypothesis 4. Higher levels of administrative stressors will lead to higher levels of role stress.

Hypothesis 5. Higher levels of administrative stressors will lead to higher levels of nursing stress.

Hypothesis 6. Higher levels of administrative stressors will lead to the adoption of effective strategies to cope with stress.

Hypothesis 7. Higher levels of role stress will lead to higher levels of nursing stress.

Hypothesis 8. Higher levels of role stressors will lead to the adoption of effective strategies to cope with stress.

Coping Strategies

The types of coping strategies employed by individuals in response to stressors have attracted much theoretical and empirical attention. A key model used to understand the relationship between workplace stressors and coping is the Transactional Model of Stress-Coping (Lazarus & Folkman 1984). The model broadly proposes that psychological stress is the

outcomes of a mismatch between the person and the 'environmental event'. While many variations of coping strategies categorizations have been developed, Lazarus and Folkman (1984) identified two main types of coping strategies. Emotion-focused strategies are usually those which aim at lessening emotional distress (Lazarus & Folkman 1984, 150), while problem-focused strategies are directed at problem definition, alternative solution generations, weighing of alternatives, choice, and action (Lazarus & Folkman 1984, 152).

This particular model has been applied to understanding how employees appraise a situation, cope, and the resources used in coping (Terry & Jimmieson 2003). Stressed workers would adopt a variety of coping behaviours as a mediator between stressors and performance outcomes (Dewe et al. 2010). This is because work stress involves a transaction between the individual and his/her work environment in which coping strategies are employed to deal with workplace change-induced stressors. Chang and Hancock's (2003) study showed that nurses adopt emotional and problem-based coping strategies to deal with workplace nursing stress. Lim et al. (2010) noted that nurses used a wide range of coping strategies, such as seeking support, problem solving and self-control, to cope with workplace stressors. Chang and Hancock (2003) proposed that the effectiveness of how nurses cope with stress should be considered when understanding the coping behaviour of nurses. While there is empirical evidence to support the negative relationship between role stress and job satisfaction (Chang & Hancock 2003), there has been little research about the relationship between the adoption of effective coping strategies and reduction of change-induced administrative stressors and role stress. Few studies have tested the causal relationships of effective coping strategies on job satisfaction. In this study we examine the following.

Hypothesis 9. Higher levels of role stress will lead to lower levels of job satisfaction.

Effective coping strategies and job satisfaction

A consequence of organizational change that has received much attention is job satisfaction (Rafferty & Griffin 2006). Rafferty and Griffin (2006) applied the features of Lazarus and Folkman's (1984) model to examine the impact of organizational change on employee attitudinal outcomes such as job satisfaction. The results suggested that perception of change planning was indirectly positively related to job satisfaction.

As nurses encounter stressors, their job performance will be affected. De Jong and colleagues (2001) note that there is a unidirectional relationship, where job strains have a negative effect on job satisfaction. Others (e.g. Bartram et al. 2004; Zangaro & Soeken 2007) found strong support for job stress as a predictor of nursing job satisfaction. Therefore, the adoption of coping strategies is crucial in reducing the negative consequences of stress. For example, Healy and McKay's (2000) study provided support for Lazarus and Folkman's (1984) model. They found that nursing stress is negatively associated with job satisfaction and nurses used coping behaviours in stressful job circumstances. Chang and Hancock (2003) also adopted the Transactional model of Stress-Coping in their Australian study where they concluded that nurses who adopted effective coping strategies were more satisfied with their job.

Hypothesis 10. The adoption of effective strategies to cope with increased stress will mediate the relationship between nursing stressors and job satisfaction.

Hypothesized model

The impact of stressors on job satisfaction cannot be fully understood without determining the effectiveness of the coping strategies used to manage the mismatch between person and the environmental event (Lazarus & Folkman 1984), in this instance, organizational change. Little is known of the adoption of effective coping behaviors as mediators of non-nursing and nursing stressors on job satisfaction. While the literature has shown a negative association

between nursing stressors and job satisfaction, little is known of the effects of change-induced administrative stressors on nursing work, and its impact on job outcomes. The current study extends the literature by examining the causality of administrative stressors on nursing and role stressors, effective coping strategies, and job satisfaction (see Figure 1).

Insert Figure 1 about here

Methods

Design and sample

There are over 220,000 registered nurses and over 50,000 enrolled nurses employed in the Australian health care system. The majority (67%) are employed in the public sector (AIHW 2010). The sample for this research was provided by an online research company, *PureProfile*. Members of *PureProfile* signed up to participate in various research projects (e.g. market research and academic research) in return for a financial incentive given by the research team. Selection of respondents is based on nurses employed in public and non-profit sector health care organizations, who are at least 18 years old in age and residing in Australia.

We used a two-wave panel design in this study. Participants were asked to report demographic data and two independent variables (administrative stressors and role stress) in Time 1. We received 306 useable surveys (representing 46% response rate) in Time 1 (T1) in July 2009. In Time 2 (T2, six month interval) the same group of respondents received a second survey where they provided data on their nursing stress, effectiveness of their coping strategies, and job satisfaction. The final panel group (that is, those respondents who participated at both times) consisted of 119 nurses.

The majority of the sample is female (91 respondents). The respondents were employed in a full-time capacity (52.9%), were in the age range 31-50 years old (58.9%) and had been employed in their current position for three to five years (32.8%). The majority of the respondents categorized themselves as 'junior management' (44.5%). All of the respondents were employed in public sector HC organizations.

Measures

Organizational change variables

Two scales were used to operationalize the process of change (Bordia et al. 2004; Jimmieson et al. 2004). The items were measured by a five-point Likert scale ranging from '1' = Not at all, to '5' = A Great Deal. Exploratory factor analysis (EFA) resulted in two factors with eigenvalues greater than 1.0. 'Participation in Change' is a five-item scale and it examines the extent to which nurses participated in the change process (sample item includes 'To what extent do you get the opportunity to take part in decisions related to changes that affect your job?'). It assesses the perception of participants' involvement in the change process (composite reliability coefficient = 0.94). 'Change Information' was measured with five items (sample item includes 'Overall, how clearly do you think you are informed about the nature of the changes that take place in your organization?'). This scale measured the perceived amount and understanding of change information provided to nurses (composite reliability coefficient = 0.96).

Administrative stressors

Respondents were asked to respond to a 10 context-specific items on non-nursing, administrative stressors scale (Teo et al. 2012). Respondents were asked to indicate the extent

to which the items were sources of stress in their job based on a five-point rating scale ranging from '1' = Not at all, to '5' = Major source of stress. EFA produced a two factor solution, namely, 'resource stressors' ($\alpha=0.87$, sample item includes 'Equipment/system breakdowns or faults') and 'time stressors' ($\alpha=0.91$, sample item includes 'Not having enough time to do job as well as you would like'). This composite scale has a composite reliability coefficient of 0.95. [Note: Development of this scale was previously published in 2012 using the T1 dataset (N=252 nurses)].

Role stress

The literature showed that nurses experienced two different types of role stress; role ambiguity and role overload (e.g. Chang & Hancock 2003; Dewe 1993). We used the eight-item scale used by Chang and Hancock (2003) to operationalize stressors relating to role conflict. These items were adapted from the literature (e.g. Mohrman et al. 1978). EFA produced a two factor structure similar to Chang and Hancock's (2003). Role ambiguity is measured by a four-item scale ($\alpha=0.85$; sample item includes 'Feeling that you have too little authority to carry out the responsibilities assigned to you') and a four-item role overload scale ($\alpha=0.91$; sample item includes 'Not knowing just what the people you work with expect of you'). Role stress is operationalized as a reflective scale (composite reliability coefficient = 0.83).

Nursing stress

As discussed previously, one of the most commonly used instruments in measuring the frequency of nursing role stress is the Nursing Stress Scale (NSS, Gray-Toft & Anderson 1981). The NSS inventory comprised of 34 stressful situations relevant to hospital nursing. Respondents were requested to report on a four-point Likert scale, ranging from '0' = never

to '4' = very frequently. Seven sub-scales were used in the path analysis (sample factors include death and dying, conflict with physicians, lack of support, etc), with internal reliability coefficients ranging from 0.74 to 0.87. These were used to form a reflective construct (composite reliability coefficient = 0.94).

Effectiveness of coping strategies

We adopted the 11-item scale from Chang and Hancock (2003) to measure the effectiveness of coping strategies used by nurses to reduce their role stress. These were rated on a five-point Likert scale, ranging from '1' = not at all effective, to '5' = very effective. The items were derived from the literature on coping and stress (e.g. Dewe 1993; Dewe et al. 2010). EFA revealed a two factor solution (explaining 54% of variance). Sample item for factor 1 (problem focused coping, $\alpha= 0.81$) includes 'Ask advice from peers/colleagues'. Sample item for factor 2 (emotion focused coping, $\alpha=0.80$) includes 'Keep my feelings to myself'. The two sub-scales were then used to form a reflective construct in the path model (composite reliability coefficient=0.75).

Job satisfaction

We adopted the 15-item scale from Warr et al. (1979) as a measurement of intrinsic and extrinsic job satisfaction. Participants were asked to rate their attitudes in a 7-point scale from '1' = Extremely dissatisfied, to '7' = Extremely satisfied, on a range of issues including 'work conditions and prospects', 'colleagues and job security'. Following Warr et al. (1979), two sub-scales were created, intrinsic satisfaction (seven items, $\alpha= 0.86$) and extrinsic satisfaction (eight items, $\alpha=0.84$). They were used to form a reflective composite scale (composite reliability coefficient is 0.96).

Analysis

SmartPLS (Ringle et al. 2005), a latent path model, was used to analyse the data. Partial Least Squares (PLS) technique is used for estimating path coefficients in causal models and the software allows for the simultaneous testing of hypotheses; it is suitable for analysing small samples and has a more relaxed assumption of normality. Path coefficients are standardized regression coefficients; the loadings are similar to factor loadings (see Chin 2010 for a discussion on PLS modelling). PLS is considered to be appropriate when the sample size is small and it is considered to be appropriate for building causal model (Chin 2010). The sample size of 119 cases is more than sufficient to achieve a medium effect size of 0.80 for a path model with six independent constructs (Green 1991, 503).

Validity and reliability

Several steps were undertaken to ensure validity and reliability. These tests (including composite reliability coefficients, Fornell and Larcker's test for discriminant validity using the square root of average extract variances and Stone-Geisser Q tests) are typically used in PLS analysis (see Chin 2010). Results of the tests satisfied the minimum guidelines required for PLS analysis (Chin 2010). Data were collected in two points in time, separated by a six month interval, in order to ensure common method variance did not impact on the findings (Podsakoff et al. 2003).

The significance of each variable to another is determined by using the bootstrap procedure within the *SmartPLS* (Ringle et al. 2005) software. Bootstrapping procedure is carried out to provide extra confidence that the results are not sample-specific by using repeated random samples drawn from the data. In this instance, the bootstrap procedure was repeated until it

reached 500 bootstrap samples. In addition, a global goodness of fit index (Tenenhaus et al. 2005) was calculated to determine the level of fit.

Results

Table 1 provides a summary of the descriptive statistics, AVEs and intercorrelation between the variables and demographic variables. As shown in Table 1, demographic variables are not correlated with the variables in the path model.

Insert Table 1 about here

As reported in Table 1, the respondents reported that they were not given the opportunity to participate in decision-making about change in their organization (mean=11.69, SD=4.46), despite agreeing that change information was provided to them (mean=13.64, SD=4.87). They also reported an above average level of administrative stressors (mean=35.96, SD=11.75), mid-level of role stress (mean=21.71, SD=5.98) and a high level of nursing stress (mean=93.33, SD=25.57). Their levels of effective coping strategies were above average (mean=28.98, SD=6.63). While the respondents reported an average level of job satisfaction (mean=53.13, SD=16.15), it ranged from a mean of 36.98 (dissatisfaction) to 69.28 (satisfaction).

Results of path analysis showed that the model explains 33.4% of nurses' job satisfaction. This model has a large goodness of fit, as indicated by the global goodness of fit index of 41.9%. Both the R-square and goodness of fit indices are considered to be large (Wetzels et al. 2009). The path analysis (see Table 2 and Figure 2) showed that Hypothesis 1 is supported as participation in change and change information appear to be positively related and

statistically significant. Hypothesis 2 was not supported as the path from participation in change to administrative stressors was not statistically significant. Hypothesis 3 was supported as the path from change information to administrative stressors was negative and statistically significant. The analysis showed that Hypothesis 4 was supported as the path from administrative stressors to role stress was positive and statistically significant. There was support for Hypotheses 5 as the path from administrative stressors to nursing stress was positive and statistically significant. Hypothesis 6 was not supported as the path from administrative stressors to effectiveness of coping strategies was not statistically significant. The path from role stress to nursing stress was positive and statistically significant. Hypothesis 7 was supported. There was no support for Hypotheses 8 and 9 as the paths from role stress to effectiveness of coping strategies and job satisfaction were not statistically significant.

Insert Table 2 about here
Insert Figure 2 about here

There was a statistically significant path from effectiveness of coping strategies to job satisfaction and there was also a direct and statistically significant path from nursing stressors to job satisfaction. To test the mediation hypothesis, we calculated the Sobel's test (Preacher & Hayes 2004) that provided evidence to suggest that effective coping strategies have a mediating effect on the relationship between nursing stress to job satisfaction (Sobel=2.03, $p=0.04$).

Discussion

This study aims to establish the impact of change-induced administrative stressors on nursing stressors and job satisfaction. Our findings suggest that change management processes resulted in the presence of non-nursing, administrative stressors and role stress in Time 1. The Path Analysis suggests that these were connected to an increase in nursing stress six months later. The results indicate that these stressors also brought about a decrease in nurses' job satisfaction. It was found that nurses who adopted effective coping strategies in dealing with stress tended to report higher levels of job satisfaction. It appeared that effective coping strategies mediated the negative consequences of change-induced stressors on job satisfaction.

This research reveals several important theoretical and practical implications. While these findings corroborate those in the literature (Chang et al. 2005; Jackson 1983; Riahi 2011) which showed that changed induced stressors impact negatively on nursing job outcomes, our study also provides new theoretical insights. First, we have contributed to the literature by establishing evidence that participation in decision-making about change and the provision of change information has a causal effect on change-induced nursing stressors and role stressors that are in turn connected to the incidence of nursing stress and job satisfaction. We were able to show that there is support for the Transactional Model of Stress-Coping (Lazarus & Folkman 1984) and from there develop a theoretical model of how administrative stressors resulted in nurses reporting an increase in their nursing stress.

This study also provides an integrated theoretical perspective of *how* stress affects retention that has so far been elusive. First, there is evidence to suggest that nurses experience various administrative stressors which, over time, lead to an increase in nursing stressors, in turn leading to job dissatisfaction. Our research suggests that the effectiveness of coping

strategies adopted has a mediating effect on the negative influence of stressors on job satisfaction. Nurses who reported the adoption of more effective coping strategies are more likely to report a higher level of job satisfaction. In this study, nurses reported using problem and emotion-focused strategies when dealing with the negative consequences of stressors. The mediation model developed in this paper opens up new directions for research into developing holistic perspectives on questions about recruitment and retention and well-being at work in the health care sector that should be of interest to academic researchers and practitioners.

Furthermore, the research design contributes to the on-going discussion on common method variance. We adopted a two-wave design that helped to control common method variance (Podsakoff et al. 2003). The PLS modelling technique allows us to perform additional checks for validity and reliability providing additional assurances of rigor. Such techniques could be usefully adopted by other researchers.

Implications for nursing management

Senior hospital management and nurse unit managers should find this study useful. There is evidence to support initiatives by nurse managers to assist frontline nurses to cope with organizational change-induced stressors. Human resource managers could also use this study when implementing change in health care organizations to take note of how increasing administrative and non-nursing work demands affect nurse job satisfaction. It is clear that these additional demands compound the underlying emotional stress of nursing work, requiring further development of personal resilience in coping with change and enhancing employee outcomes (Jackson et al. 2007).

Finally, nursing management should consider examining their staffing levels in relation to the increasing non-nursing administrative stressors induced by organizational change. As a result of the increasing level of the stressors faced by frontline nurses, administrative staff could be assigned to assist nurses with non-nursing duties. This would result in a reduction of role ambiguity and uncertainty, which in turn, would allow nurses to employ coping strategies to deal with their nursing stress. Middle and line managers, as implementers of change programs, should be assisted to understand the consequences of change on nursing job satisfaction. Training and management development opportunities should be provided to them so that they know how to assist senior management to introduce change in a sector which is known for the negative consequences of nursing work.

HC organizations which are undergoing reforms could also cultivate an organizational climate which encourages open communication; timely provision of constructive information and feedback; and a participative management style which emphasizes democratic governance as part of good practice in human resource management during change. These practices should provide a positive impact on alleviating role stress and ambiguity associating with change.

Limitations and future research implications

We are confident that common method variance is not a significant issue in the current study as data were collected across six-monthly interval (Podsakoff et al. 2003; Sargent & Terry 1998). A possible limitation which could impact on the findings could be the effect of the small sample size, despite its strength in using data from matched respondents after a six month interval. Future studies should attempt to increase the response rate and sample size, which would allow more sophisticated statistical techniques to be adopted and utilized.

Similarly to Jimmieson et al.'s (2008) and Rafferty and Griffin's (2006) studies, data could be collected to measure the extent respondents' perceptions towards change could influence the findings. Whilst the findings are limited to the Australian context, this research also provides some interesting questions and theoretical insights worthy of further research in non-Western countries as respondents' cultural values (e.g. power distance and uncertainty avoidance) could influence how they cope with change-induced stressors.

In spite of these limitations, we were able to provide new insights into the effects of administrative stressors on nursing job satisfaction using cross lag, causal analysis. Employing the Transactional Model of Stress-Coping, we demonstrated that effective coping strategies are essential to reduce the negative of administrative and nursing stressors on the job satisfaction of nurses, six months after they experienced those stressful events.

Conclusions

The current study highlights the importance of participation in change and provision of accurate and frequent change-related communication to nurses. These processes led to a reduction of change-induced non-nursing administrative stressors. The absence of these would not reduce on-going role stress and nursing stress experienced by nurses in their day-to-day work. It was concluded that effective coping strategies could be used as a mediator to enhance the negative impact of nursing stress on job satisfaction. The Transactional Model (Lazarus & Folkman 1984) provided a useful theoretical lens in explaining the negative impacts of change-induced stressors in health care organizations.

Ethical approval

Ethical approval was granted by the Human Research Ethics Committee of the University of Western Sydney (H6655).

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Figure 1

Hypothesized Model.

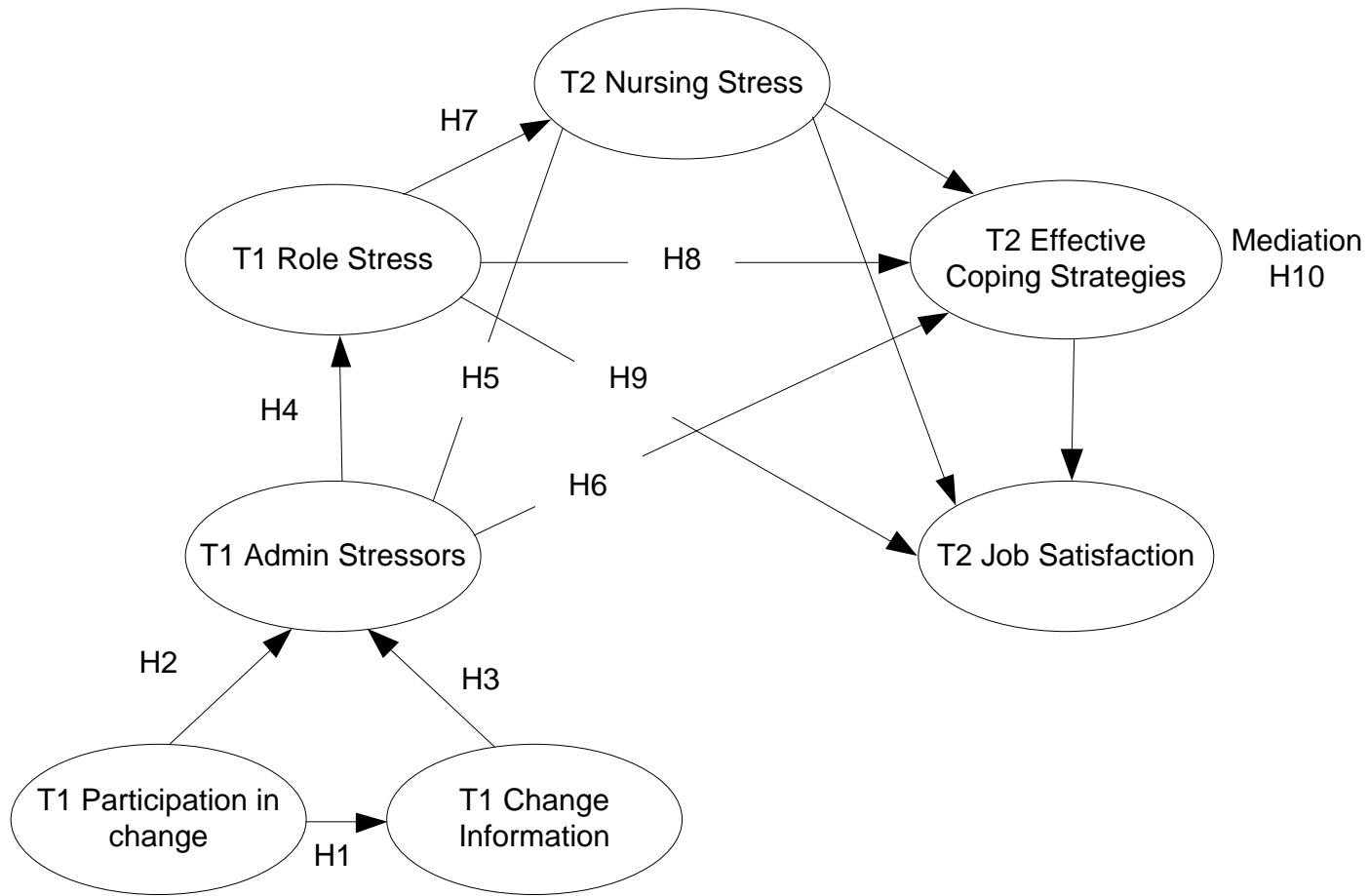


Figure 2

Path Model after Testing

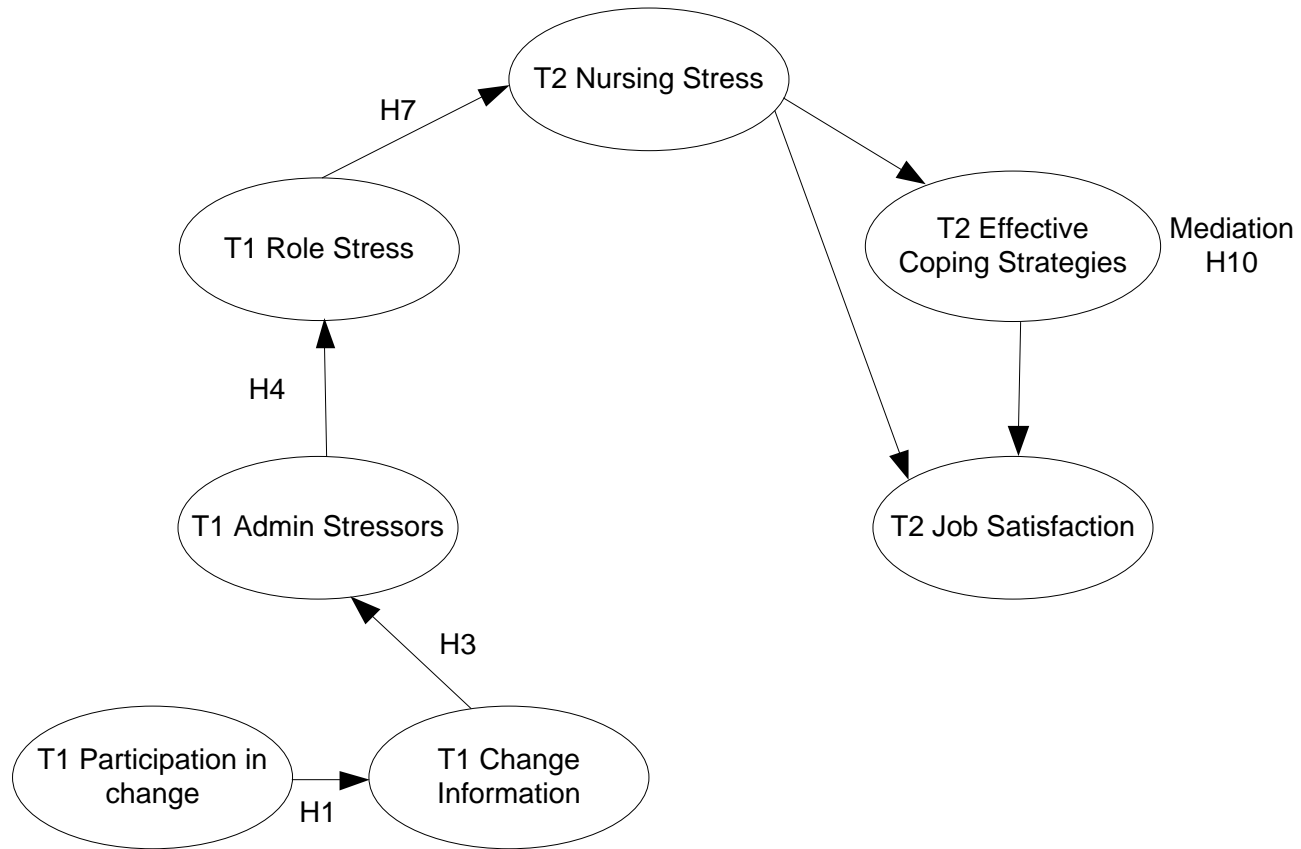


Table 1

Descriptive Statistics, AVEs and Intercorrelations

	M	SD	AVE	1	2	3	4	5	6
1. Gender (0=female,1=male)	1.76	0.43	-	1.00					
2. FT vs PT (1=FT,0=PT)	1.47	0.50	-	.33***	1.00				
3. Age	3.23	1.28	-	-.07	.04	1.00			
4. Job tenure	3.23	1.40	-	-.14	.04	.48***	1.00		
5. Organisational tenure	3.34	1.37	-	-.14	-.04	.50***	.85***	1.00	
6. Highest education	3.85	1.69	-	-.03	.01	-.04	-.01	.02	1.00
7. Managerial level	2.97	0.86	-	.15	.19*	-.16	-.09	-.19*	-.09
8. Participation in change	11.69	4.46	0.76	-.09	-.15	.18	.09	.16	.11
9. Change information	13.64	4.87	0.82	.07	.02	.06	-.09	-.16	.02
10. Admin stressor	35.96	11.75	0.90	.01	-.11	-.08	.09	.05	.03
11. Role stress	21.71	5.98	0.77	-.06	-.14	-.04	.08	.02	-.04
12. Nursing stress	93.33	25.57	0.68	-.02	.02	.04	-.05	-.15	-.11
13. Effective coping	28.98	6.63	0.61	-.12	-.12	-.15	.02	-.05	.13
14. Job Satisfaction	53.13	16.15	0.92	.05	.02	-.14	.05	.01	.06

N=119 matched samples (at six months interval)

AVE=average variance estimates

*p<.05

**p<.01

***p<.001

Table 1

Descriptive Statistics, AVEs and Intercorrelations (continued)

	7	8	9	10	11	12	13	14
1. Gender (0=female,1=male)								
2. FT vs PT (1=FT,0=PT)								
3. Age								
4. Job tenure								
5. Organisational tenure								
6. Highest education								
7. Managerial level	1.00							
8. T1 Participation in change	-.30***	1.00						
9. T1 Change information	-.15	.56***	1.00					
10. T1 Admin stressor	.16	-.29**	-.38***	1.00				
11. T1 Role stress	.08	-.39***	-.39***	.61***	1.00			
12. T2 Nursing stress	.20*	-.07	-.11	.05	.18	1.00		
13. T2 Effective coping	-.02	.06	.04	.10	-.00	-.23*	1.00	
14. T2 Job Satisfaction	.15	.51***	.51***	-.69***	-.58***	-.09	.01	1.00

N=119 matched samples (at six months interval)

*p<.05

**p<.01

***p<.001

Table 2

Results of Path Analysis

Hypothesized Paths	Path Coefficients	t-statistic	Sig. level
H1. Participation in Change → Change Information	0.57	8.49	***
H2. Participation in Change → Admin Stressors	-0.12	0.99	n.s.
H3. Change Information → Admin Stressors	-0.33	3.33	***
H4. T1 Admin stressors → T1 Role stress	0.64	13.44	***
H5. T1 Admin stressors → T2 Nursing stress	-0.11	1.02	n.s.
H6. T1 Admin stressors → T2 Effectiveness of coping strategies	0.17	1.44	n.s.
H7. T1 Role stress → T2 Nursing stress	0.23	2.00	*
H8. T1 Role stress → T2 Effectiveness of coping strategies	-0.08	0.69	n.s.
H9. T1 Role stressors → T2 Job satisfaction	-0.04	0.56	n.s.
H10. Mediation: T2 Nursing stressors → T2 Effectiveness of coping strategies	-0.24	2.33	*
T2 Effectiveness of coping strategies → T2 Job satisfaction	0.37	4.20	***
T2 Nursing stressors → T2 Job satisfaction	-0.37	5.46	***

Note:

N=119 matched samples (at six months interval)

n.s. not statistically significant

*p<.05

**p<.01

***p<.001