Effects of Nurses' Job Stress and Work-Family Conflict on Turnover Intention: Focused on the Mediating Effect of Coping Strategies

Sang Sook Han
Kyung Hee University, South Korea
Jeong Won Han
Kosin University, South Korea
Eun Hee Choi
Kyung Hee University, South Korea

Abstract

The purpose of this study was to investigate the relationships among nurses' job stress, work-family conflict, coping methods, job burnout, and turnover intention. A survey using a structured questionnaire was conducted with 423 clinical nurses in South Korea. It was revealed that job stress was positively related to work-family conflict and had a negative influence on active coping but no influence on passive coping. Job stress had a positive influence on job burnout but no influence on turnover intention. Work-family conflict didn't influence coping strategies and turnover intention but had a positive influence on job burnout. Active coping strategies had a negative influence on the job burnout but no influence on turnover intention. Job burnout had a positive influence on turnover intention. It was found that active coping strategies which influence a nurse's turnover intention can be an intervention measure as a mediator effect. Further, the variables that were confirmed to be influencing factors in this study can be changed through nursing interventions. Thus, these variables can be used to develop a program for decreasing nurses' turnover intention.

Key words

Coping strategies, job burnout, job stress, work-family conflict, turnover intention

Introduction

In our modern society, the medical industry is rapidly becoming more gigantic, corporatized, and specialized. Market-openings in the field of medical services are expected to accelerate exchanges among medical industries in different countries, further deepening the competition among medical organizations (Lee, C. W. Chen, T. H. Chen, & C. Y. Chen, 2010). The improvement of people's quality of life and the development of medical technology have contributed to an increase in life span as well as in chronic diseases. As medical services increase, demands for high-quality nursing services are also constantly increasing (Moon & Han, 2011). Despite increased demands for nursing services, the turnover rate of nurses is increasing. Based on a report from the Hospital Nurses Association, the turnover rate of nurses has constantly increased from 9.8% in 2005 to 17.8% in 2011 (Kim et al., 2013). A high turnover rate of nurses causes lower quality of nursing services (Burke, Moodie, Dolan, & Fiksenbaum, 2012). In addition, the high turnover rate affects patients' safety and hospital infection rate (Furukawa, Raghu, & Shao, 2011). Therefore, it is a phenomenon requiring active attention from our society (Needleman, Buerhaus, Pankratz, Leibson, Stevens, & Harris, 2011). Nurses' occupational stress as a result of marital status, hierarchical position, shift work, conflicts with doctors, increased work demands due to a lack of workforce, and inappropriate compensations have been reported as possible contributing factors to their high turnover rate (Hayes et al., 2012; Yildirim & Aycan, 2008).

The global number of nurses is estimated to be over 16 million, with only 10% of them being male (e.g., 5% of all nurses in Canada, 6% in the U. S., 8% in Ireland, and 10% in the United Kingdom are male) and the rest being female (Herakova, 2012). According to the Organization for Economic Cooperation and Development (OECD), the number of active nurses globally is 9.1 per 1000 people on average, while the number of active nurses in South Korea is only 4.7 per 1000, only half the combined average for all OECD member countries (OECD, 2014). Furthermore, in contrast to efforts made by other countries to improve nurses' job satisfaction, such as the implementation of fixed 12-hour shift systems in most U. S. hospitals and fixed day and night shift systems in Japan (Geiger-Brown & Trinkoff, 2010), South

Korean hospitals enforce fixed three-shift systems for 40-hour work weeks. This makes it difficult for women nurses in Korea to balance work with family.

Unlike most other areas of employment, since most nurses are women, they additionally experience stress from their roles at home at the same time (Gandi, Wai, Karick, & Dagona, 2011). Due to the combination of the responsibilities of the nursing job, and the daily hassles and obligations at home, nurses can have a spillover of stress from the workplace to home life and vice versa. As a result, the quality of nursing service delivered to patients can become lower, and the productivity of a nursing organization can decrease as well (Fujimoto, Kotani, & Suzuki, 2008). Work-family conflicts experienced by nurses can become a direct cause of nurses' job burnout, resulting in increased turnover intention among nurses. Therefore, it is necessary to promote active coping strategies at organizational and social levels (Yildirim & Aycan, 2008).

According to the stress, appraisal, and coping theory described by Lazarus and Folkman (1984), individuals in a tense circumstance perceive and evaluate the situation based on their personal and environmental resources. When individuals determine that they cannot properly cope with such a situation by themselves, they perceive it as stress. But they can adapt themselves again by overcoming the situation through coping methods. Lazarus and Folkman classified Stress-Coping types into active coping and passive coping, with no superiority between the two. Lazarus and Folkman also emphasized that the consequences of stress would differ based on how coping methods were used. Through effective coping methods, possible negative effects caused by stress can be converted into positive ones. In this regard, when nurses' job burnout and turnover intention were examined, the job stress that nurses experienced because of the high level of work and work-family conflict was identified as a form of stress that they experienced at an individual level. Their job burnout and turnover intention might be the result of their negative coping responses to such stress. Nurses' passive coping with stress leads to negative self-concept, negative job attitude, and the loss of their interest in job objects (Payne, 2001). As they experience burnout as a syndrome of physical, mental, and emotional exhaustion, they have a stronger desire to break away from their organization

(Bartram, Casimir, Djurkovic, Leggat, & Stanton, 2012).

According to previous studies focusing on people with ordinary jobs, their job stress, work-family conflict, and job burnout have both a direct and indirect effect on their turnover intention (Boyar, Maertz, Pearson, & Keough, 2003; Jaramillo, Mulki, & Solomon, 2006; Kim & Stoner, 2008). It was reported that stress-related coping strategies have a moderating effect on the reduction of workers' job burnout and turnover intention (Lee & Lim, 2013). In the domain of nursing, most research studies focused on casual relationships and correlations, reporting that nurses' job stress and job burnout have an effect on their turnover intention. There is research arguing that work-family conflict is also related to turnover intention (Moon & Han, 2011). Other research has argued that the relationship between job stressors and burnout is moderated by which coping strategies are used (Kwon & Lee, 2012). However, few studies have investigated the influence of the factors suggested by previous research on the relation between burnout and turnover intention. Since nurses' burnout and turnover intention are closely related to the quality of nursing service and medical consumers' satisfaction and could be reduced through coping methods, it is essential to pay active attention to and carry out research in this field. Thus, the aim of this study was to provide a prediction model to help managing nursing human resources by investigating the mediating effect of coping methods between nurses' stress factors and maladaptive outcomes such as job burnout and turnover intention. The purpose of this study was to investigate the causal relationship among nurses' job stress, work-family conflict, coping methods, job burnout, and turnover intention. Detailed objectives are shown below: (i) to establish a hypothetical model by using nurses' job stress and work-family conflict as an antecedent variable, coping strategies as a mediating variable, and their job burnout and turnover intention as a result variable; (ii) to verify the mediating effect of coping methods in the relation among nurses' job stress, work-family conflict, and their job burnout and turnover intention, and (iii) to test the goodness-of-fit of a model based on theoretical reviews of a research model based on actual data.

Methods

Design and Sample

This cross-sectional descriptive study aims to verify the goodness-of-fit of a hypothetical model on nurses' job stress, work-family conflict, coping methods, job burnout, and turnover intention. This study randomly selected 5 general hospitals with over 500 beds in Seoul. This study was approved by IRB of K University (IRB No.: KHSIRB-12-021 (EA). Agreements were received from directors of nursing service after explaining them about the contents and purpose of this study. This study conducted a self-reported survey in a sample of female nurses after submitting written participation agreements. Particularly, on the premise that the number of subjects required for a structural equation model should be over 15 per measurement variable (Stevens, 2002), this study selected 440 research subjects. The variables that affected other variables were defined as exogenous variables, while those affected by other variables were defined as endogenous variables. A total of 14 hypotheses were constructed for this study.

Measurement

Job Stress.

Job stress can be regarded as an individual's welfare-threatening state occurring when demands due to job burden exceed individual physiological, psychological, and social resources. Job stress implies a specific relation between individuals and environments (Lazarus & Folkman, 1984). For the purpose of this study a job stress measurement tool was used which was developed and used by Beehr (1978) and modified and supplemented by Moon and Han (2011). The instrument is composed of a total of 15 questions, with 5 questions about role conflicts (incongruity between personal needs and the requirements of a role), 5 questions about role ambiguity (a situation characterized by a lack of clearly defined role expectations), and 5 questions about non-homogeneity (differences between the work values of superiors and subordinates). The range of this scale is 1 to 5 points per question, with high scores pointing at high levels of stress. The reliability of this tool

(Cronbach's α) was 0.85 (0.76 to 0.84) in research by Moon and Han (2011). Cronbach's α was 0.86 (0.80 to 0.91) in this study.

Work-Family Conflict.

Work-family conflict is a form of role conflict that is likely to occur when the two different roles nurses have at work and at home are incompatible with each other (Greenhaus & Beutell, 1985). As a tool developed by Carlson, Kacmar and Williams (2000) and modified and supplemented by Yeon (2010), the work-family conflict measure is composed of a total of 11 questions, with 3 about behaviors, 3 about time pressure, and 5 about tension. The range of this scale is 1 to 5 points per question, with higher scores pointing at higher levels of work-family conflict. The reliability of this tool (Cronbach's α) was 0.95 (0.90 to 0.93) in research by Yeon (2010). Cronbach's α was 0.84 (0.70~0.82) in this study.

Coping strategies.

Coping strategies refer to a series of conscious or unconscious behaviors to regulate emotion-evoking stress and lower the tension of a stressful circumstance when individuals face a crisis (Lazarus & Folkman, 1984). As a tool developed by Lazarus and Folkman (1984) and modified and supplemented by Lin and Kim (2011), the coping strategies measure is composed of 12 questions about active coping and another 12 questions about passive coping. The range of this scale is 1 to 5 points per question, with higher scores pointing at higher levels of coping strategies. In Lin and Kim (2011)'s research, the reliability (Cronbach's α) of active coping and passive coping was 0.72 and 0.66, respectively. In this study, Cronbach's α of active coping and passive coping were 0.89 and 0.70, respectively.

Job Burnout.

Job burnout is a form of job stress responses likely to occur when individuals cannot endure stress. It means a syndrome of physical, mental and emotional exhaustion, negative ego self-concept, negative job attitude, and a loss of interest in job objects (Clark, 1980). As a tool developed by Pines, Aronson and Kafry (1981) and modified and supplemented by Moon and Han (2011), the job burnout measure is com-

posed of a total of 13 questions, with 5 about physical factors, 5 about emotional factors, and 3 about psychological factors. The range of this scale is 1 to 5 points per question, with higher scores pointing at higher levels of job burnout. The reliability (Cronbach's α) of this tool was 0.85 (0.66 to 0.77) in Moon and Han (2011)'s research. In this study, the value of Cronbach's α was 0.94 (0.82 to 0.89).

Turnover Intention.

Turnover intention is the prudent and considerate thought of workers intending to leave and give up being a member of their present organization or job (Tett & Meyer, 1993). As a tool modified and supplemented by Lee (2009) through factor analysis, the turnover intention measure is composed of a total of six questions, with four about job change and two about job transfer. The range of this scale is 1 to 5 points per question, with higher scores pointing at higher levels of turnover intention. The reliability (Cronbach's α) of this tool was 0.67 (0.53 to 0.68) in Lee (2009)'s research. In this study, the value of Cronbach's α was 0.84 (0.70 to 0.80).

Data Collection and Analytic Strategy

This study was divided into pre-research and main research segments. In the pre-research segment, each tool was modified and supplemented by an expert group consisting of one nursing professor and three nursing graduate students. Then a second pre-research was conducted on 100 nurses working at general hospitals with over 500 beds located in Seoul and Gyeonggi Province from March 1 to March 15 of 2013. An exploratory factor analysis was conducted using data collected from the pre-research. Finally, 3 questions about behaviors, 3 questions about time, and 5 questions about tension were selected out of all sub-factors with 0.60 in the result factor load and below 0.30 in the load with other factors.

The main research segment was conducted on nurses at university hospitals with over 500 beds, located in Seoul and Gyeonggi Province, from June 1 to 31, 2013. Convenience sampling was used for this study. Five university hospitals involved in medical and nursing education were selected. Hospitals that employ a corporation for their management

services were excluded. The nursing departments and units at the hospitals employed staff with a clear nursing philosophy and purpose, and a relatively high level of patient nursing skills. Since the level of turnover intention perceived by nurses is greatly influenced by hospital environments, targeting hospitals in one region was deemed insufficient. This study therefore selected hospitals with similar medical environments in Seoul and Gyeonggi. After explaining about the contents and purpose of this study to the nursing managers of every hospital, this study distributed 440 copies of the questionnaire to nurses who had submitted written participation agreements through the department of nursing. The number of returned copies of the questionnaire was 430, resulting in a response rate of 97.7%. Out of the 430 copies, 423 questionnaires were used for the final analysis because 7 copies had unfaithful responses. This study statistically processed the collected data by using SPSS 20.0 and AMOS 20.0 (SPSS Korea Data Solution Inc.). To analyze the final model, this study applied a structural equation model analysis method to verify the convergent validity and discriminant validity by using a high-order factor analysis. SPSS 20.0 was used to analyze the socio-demographical characteristics of research subjects and the validity of research tools. This study verified the construct validity of tools through an exploratory factor analysis with 100 research subjects in the pre-research. To test the validity of factors used to establish a model for nurses' turnover intention, this study verified the measurement model. To test the measurement model, this study conducted a confirmatory factor analysis through AMOS 20.0. To test the convergent validity, this study used factor loading squared multiple correlation (SMC), standardized residual covariance (SRC), construct reliability (CR), and average variance extracted (AVE). Since discriminant validity was used to test whether variables were independent without correlation between them, this study used correlation coefficients and the value of $\sqrt{}$ AVE. Since variables of this study were high-order factors, this study conducted the primary factor analysis and the secondary factor analysis by using high-order factor analysis. To test the goodness-of-fit of this model, this study used chi-square, chi-square/degrees of freedom $\leq$ 3.00, adjusted goodness-of-fit index (AGFI) $\geq$ 0.80, root mean square residual (RMSR) $\leq$ 0.05, goodness of fit index (GFI) $\geq$ 0.90, comparative fit index (CFI) $\geq$ 0.90, normed fit index (NFI) $\geq$ 0.80, and

root mean square error of approximation (RMSEA) ≤ 0.10 (Bagozzi & Yi, 1988). The values of NFI and CFI (relative fit indices) were over 0.90, suggesting that the model had a favorable goodness-of-fit. When the index of RMSEA considering the simplicity of a model is less than 0.05, the model is considered to have a great fit. When it is less than 0.08, the model is considered to have a good fit. When it is less than 0.10, the model is considered to have a common fit. When it is greater than 1.0, it is considered to have a bad fit.

Results

Socio-demographic Characteristics of Research Subjects

The mean age of research subjects was 32.9 years old. A total of 160 (37.8%) were 4-year university graduates. From the nurses' sample, 233 (55.1%) were married. Out of the total 423 participants, 66 (15.6%) had 1 child, 91 (21.5%) had 2 children, and 7 (1.7%) had 3 or more children. Further, 193 participants (82.8%) lived in a nuclear family consisting of only parents and unmarried children, 22 participants (9.4%) lived with their in-laws, and 18 participants (7.7%) lived with their own parents. The number of subjects living with their parents was 40 (17.2%). A total of 349 (82.5%) subjects were ordinary nurses. The number of nurses who worked for less than five years was 121 (28.6%).

Validity Test and Modification

First, this study performed a confirmatory factor analysis to confirm the convergent validity of the tool. When testing convergent validity with factor loading, convergent validity may be confirmed when factor loading values are greater than or equal to 0.6. Construct reliability (evaluating the reliability of the factors of the measured variables) has a recommended value of greater than 0.7. Average variance extracted (AVE) has a recommended value of greater than 0.50 (Bagozzi & Yi, 1988). This study subsequently excluded 3 items with low factor loadings (1 item each for job stress, active coping, and turnover intention). After excluding these 3 items, this study measured the construct reliability, which ranged from 0.71–0.95, and the Average Variance

Extracted (AVE) ranged from 0.55–0.76 (Table 1). The discriminant validity is a method to compare the value of AVE between two construct concepts with the square value of correlation. When AVE of a latent variable is larger than the square of a correlation coefficient, it is regarded as having discriminant validity. In this study, the correlation coefficient between two construct concepts was 0.01 to 0.75, while its val-

Table 1.
Convergent Validity

Variables	Sub-factor	FL	t	CCR	AVE
Job stress	Role conflict	0.65	fix	0.85	0.66
	Role ambiguity	0.55	8.13		
	Non-homogeneity	0.65	8.79		
Work-family conflict	Acting	0.35	6.70	0.84	0.66
	Time	0.88	fix		
	Tension	0.80	13.94		
Job burnout	Physical	0.77	fix	0.90	0.76
	Emotional	0.87	18.65		
	Mental	0.85	18.24		
Turnover intention	Change job	0.72	fix	0.71	0.55
	Change career	0.70	11.70		

FL: factor lading, CCR: Composite construct reliability, AVE: Average variance extracted

Table 2.
Correlations and Discriminant Validity of the Model

Variables	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12
X1: Role conflict	0.81											
X2: Role ambiguity	0.31**	0.82										
X3: Non-homogeneity	0.46**	0.36**	0.92									
X4: Work-family conflict (time),	0.25**	0.12*	0.14**	0.87								
X5: Work-family conflict(tension)	0.32**	0.08	0.11*	0.70**	0.81							
X6: Active coping	-0.06	-0.35**	-0.16**	-0.05	0.01	0.82						
X7: Passive coping	0.10*	-0.11*	0.01	0.09	0.06	0.29**	0.85					
X8: Job burnout (physical)	0.34**	0.22**	0.25**	0.55**	0.54**	-0.20**	0.06	0.76				
X9: Job burnout (emotional)	0.38**	0.36**	0.31**	0.43**	0.45**	-0.29**	0.01	0.69**	0.76			
X10: Job burnout (mental)	0.33**	0.37**	0.32**	0.35**	0.32**	-0.32**	0.02	0.60**	0.75**	0.81		
X11: Turnover intension (change job)	0.21**	0.16**	0.17**	0.26**	0.25**	-0.15**	0.02	0.46**	0.45**	0.59**	0.83	
X12: Turnover intention (change career)	0.23**	0.18**	0.24**	0.25**	0.22**	-0.09	0.06	0.45**	0.50**	0.56**	0.50**	0.82
Cronbach's a	0.80	0.85	0.91	0.70	0.82	0.89	0.80	0.89	0.93	0.82	0.80	0.70
CCR	0.89	0.91	0.96	0.90	0.90	0.91	0.93	0.80	0.80	0.78	0.95	0.93
AVE	0.66	0.67	0.85	0.76	0.65	0.68	0.73	0.58	0.58	0.65	0.69	0.68

**p<.05 **p<.001,* CCR: Composite construct reliability, AVE: Average variance extracted, $\sqrt{AVE}$: discriminant validity, The non-shaded section: correlation, The shaded section: discriminant validity

ue of √AVE was 0.76 to 0.92. Therefore, the two construct concepts had the discriminant validity since both of them were higher than the correlation coefficient (Table 2).

Direct Effect, Indirect Effect and Total Effect

Out of 14 total hypotheses, 6 were selected because 8 were rejected. The index of goodness-of-fit of these research hypotheses was found to be χ^2=126.60 (*df*=39, *p*<0.001), GFI=0.95, AGFI=0.91, RMR=0.02, NFI=0.94, CFI=0.95, RMSEA=0.07 (Table 3). The structural equation model used in this study has the merit of permitting easy extraction of direct and indirect effects and overall effects between variables. This study discovered that antecedent variables like job stress and work-family conflict had direct, indirect, and overall effects on results variables such as job burnout and turnover intention through mediating variables such as active and passive coping methods. To find out the significance of indirect effect, this study used bootstrapping methods. Results are shown in Fig. 1 and Table 4.

Table 3.
The Result of Path Coefficient

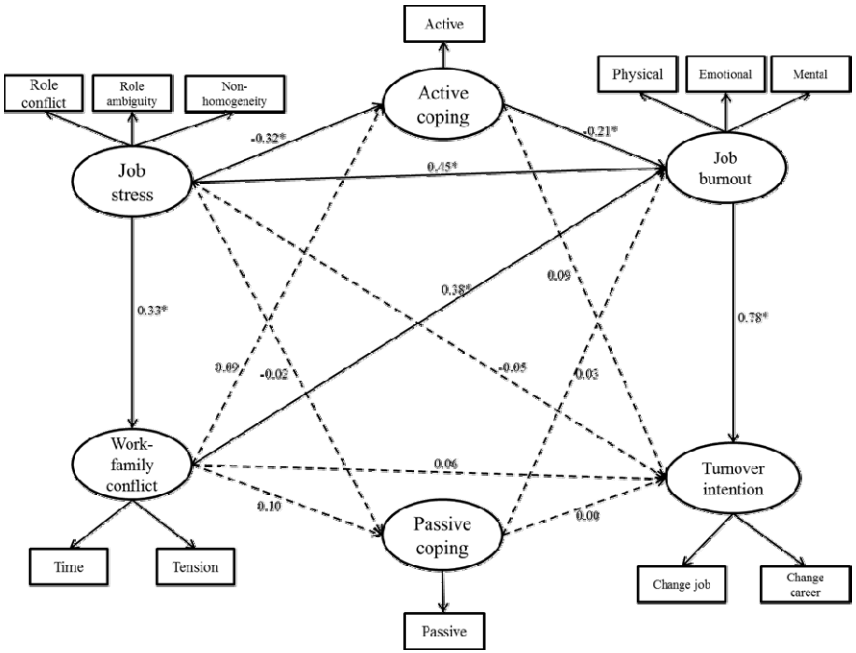
Exogenous variables	Endogenous variables	β	B	S.E.	C.R.(t)	*p*
Job stress	Work-family conflict	0.33	0.57	0.12	4.80	<0.001
Job stress	Active coping	-0.32	-0.42	0.09	-4.61	<0.001
Work-family conflict		0.09	0.07	0.04	1.42	0.142
Job stress	Passive coping	-0.02	-0.03	0.09	-.32	0.748
Work-family conflict		0.10	0.08	0.05	1.69	0.092
Job stress	Job burnout	0.45	0.60	0.10	6.07	<0.001
Work-family conflict		0.38	0.29	0.04	7.08	<0.001
Active coping		-0.21	-0.21	0.05	-4.46	<0.001
Passive coping		0.03	0.03	0.04	0.76	0.448
Job stress	Turnover intention	-0.05	-0.08	0.12	-0.68	0.498
Work-family conflict		0.06	0.06	0.06	0.98	0.328
Active coping		0.09	0.10	0.07	1.80	0.094
Passive coping		0.00	-0.00	0.05	-0.01	0.992
Job burnout		0.78	0.97	0.12	8.29	<0.001

β:=Standardized regression weight, B=Regression weight, SE=standard error, CR=Critical ratio

Table 4.
Effects of Predictor Variable in the Model

Exogenous variables	Endogenous variables	Direct effect(p)	Indirect effect(p)	Total effect(p)
Job stress	Work-family conflict	0.33(0.005)		0.33(0.005)
Job stress	Active coping	-0.32(0.005)	0.03(0.153)	-0.29(0.004)
Work-family conflict		0.09(0.200)		0.09(0.200)
Job stress	Passive coping	-0.02(0.868)	0.03(0.114)	0.01(0.921)
Work-family conflict		0.10(0.150)		0.10(0.150)
Job stress	Job burnout	0.45(0.004)	0.19(0.002)	0.64(0.005)
Work-family conflict		0.38(0.005)	-0.02(0.209)	0.37(0.003)
Active coping		-0.21(0.007)		-0.21(0.007)
Passive coping		0.03(0.547)		0.03(0.547)
Job stress	Turnover intention	-0.05(0.669)	0.49(0.006)	0.44(0.005)
Work-family conflict		0.06(0.362)	0.30(0.004)	0.35(0.004)
Active coping		0.09(0.094)	-0.16(0.007)	-0.07(0.340)
Passive coping		0.00(0.957)	0.03(0.540)	0.03(0.638)
Job burnout		0.78(0.007)		0.78(0.007)

SMC: Squared multiple correlation



*p<0.05

Figure 1. *Path Diagram of Model*

Work-family conflict is directly affected by job stress (γ=0.33, p=0.005). Active coping methods were directly affected by job stress (γ =-0.32, p=0.005). Job burnout (γ=0.45, p=0.004) was directly affected by work-family conflict (γ=0.38, p=0.005) and active coping methods (β =-0.21, p=0.007). Job stress (γ=0.19, p=0.002) had indirect effect on job burnout by work-family conflict and active coping methods. Turnover intention was directly affected by job burnout (β=0.78, p=0.007). Job stress (γ=0.49, p=0.006) had an indirect effect on turnover intention by active coping methods, work-family conflict, and job burnout. Besides, work-family conflict (γ=0.30, p=0.004) had an indirect effect on turnover intention by job burnout.

Discussion

The result variables of this study were reviewed in two different negative aspects: nurses' job burnout and turnover intention. This study confirmed that job stress had a direct effect on increased levels of job burnout. Our result is similar to the results of other researches on nurses (Hayes, Bonner, & Douglas, 2013), hotel employees (Karatepe & Uludag, 2008), and manufacturers (Hsieh & Hsieh, 2003). Such results imply that increased job stress has direct effect on the increase of job burnout regardless of the type of jobs. In addition, this study confirmed that job stress had an indirect effect on job burnout through mediation of active coping methods, which is similar to the results of a previous research on transport employees (Chen & Cunradi, 2008) and the results of a research on nurses which reported that job stress had effect on job burnout through mediation of active coping methods (McVicar, 2003). Such a finding implies that as a way of relieving stress by changing behaviors or environmental factors (Lazarus & Folkman, 1984), active coping methods play a role in reducing job burnout, methods which could be widely used at work to relieve stressful circumstances. Nurses' job burnout caused by job stress had an important influence on the quality of nursing services provided to patients. Therefore, active coping behaviors against stress are a crucial administrative factor that nursing administrators need to pay attention to. It seems necessary to set up a system where nurses can share their feelings about job stress with others and obtain support from their coworkers and organization. To empha-

size nurses' active coping methods, the following measures need to be considered: first, administrators must make an effort to share information about nurses' job stress; second, a process of information acquisition through an orderly mentoring system needs to be developed for stress management and the use of active coping methods; and finally, it is important to implement repeated education and training programs for stress coping methods at the organizational level.

Our present study discovered that work-family conflict had an effect on the increase of job burnout, which is similar to the results of a previous study on Swedish nurses (Leineweber, Westerlund, Chungkham, Lindqvist, Runesdotter, & Tishelman, 2014) that reported a significant correlation between work-family conflict and job burnout. Our result was also similar to the results of another study on Chinese female nurses (Wang, Chang, Fu, & Wang, 2012) that reported that work-family conflict increased job burnout. Nurses are mostly women who are widely exposed to work-family conflicts (Grzywacz, Frone, Brewer, & Kovner, 2006), a factor having a direct effect on their job burnout. However, work-family conflict did not have a significant effect on coping methods in our study, which was different from the results of a previous study on double-income women (E. H. Lee & J. H. Lee, 2000). It was reported that an active coping method had an adverse effect by increasing their exhaustion when female workers experienced work-family conflicts (E. H. Lee & J. H. Lee, 2000). These findings suggest that nurses' work-family conflicts resulting from their job stress might be related to life factors that cannot be controlled by individuals. Such a conflict directly affects their job burnout, having further effect on their turnover intention. Therefore, it is necessary to provide nurses with regular working hours through flexibility plans for scheduling. It is also necessary to reduce their housework burden by operating a day care center inside the hospital. Nurse job burnout could also be mitigated by encouraging nurses to join club activities (sports and various educational programs), or by providing educational and administrative support to lessen their work burden through a standardized manual for their work.

This study confirmed that job burnout had an effect on the increase of turnover intention. Our finding is similar to the results of research on nurses (Mahoney, Lea, Jillson, & Meeusen, 2014) and on teachers (Fuentes, 2013). Unlike previous studies, this study analyzed direct and

indirect effects between variables. As a result, our study found that job stress and work-family conflict had indirect effect through mediation of active coping methods and job burnout. Such findings indicate that it is necessary to reduce job burnout to reduce turnover intention. To reduce job burnout, it is essential to encourage the use of active coping methods and try to reduce work-family conflict factors. To encourage nurses to use active coping methods, nursing managers should be educated to give support for nurses to think in a positive way and set up planned activities with administrative back-ups. Especially, team spirit and social support have been proven to be very important buffers for burnout. It seems necessary to create membership among nurses so that they may cooperate with each other by establishing a support system with their coworkers and superiors.

In this study, nurses' passive coping was not affected by job stress and work-family conflict. Further, it did not affect job burnout and turnover intention. Stress perception and coping methods have been found to differ according to gender and work environment, but in particular, as compared to males, females have been found to respond more sensitively to stress and conflict from interpersonal relations and invest more effort in actively trying to solve such problems (Torkelson, Muhonen, & Peiró, 2007). Nurses are usually female and their work is performed with people; therefore, active coping methods are more likely to be used than are passive coping methods. However, it will be important to reconfirm these results through repeated studies.

This study has certain strengths. First, this study verified the mutual relation between factors by establishing a comprehensive prediction model for nurses' job stress, work-family conflict, coping methods, job burnout, and turnover intention in the field of nursing where most of the workers are women. Most of the previous studies focused on other workers in other fields, such as service workers, female salaried people and geriatric care helpers, especially on the correlation among their job stress, work-family conflict, job burnout and turnover intention. However, this study investigated the connection of nurses' job stress factors, work-family conflict, and coping methods while providing explanation and inference about path to job burnout and turnover intention through both direct and indirect effects. This study also confirmed that there were mediating variables such as active coping and

work-family conflict for job stress to reach job burnout and turnover intention through such a path. Explaining and inferring such a path may have academic significance. Second, variables dealt by this study with intervention plans could likely reduce the turnover intention of hospital nurses, most of whom are female workers. If hospital managers use the results of this study to reduce the rate of nurses' turnover and manage human resources more effectively, this study will have clinical significance in improving the quality of nursing services provided to people and in enhancing the productivity of hospitals through better human resource management.

Conclusion

This study confirmed the relationship of nurses' job burnout and turnover intention through a prediction model. The results of this study can be summarized as follows: (i) nurses' job stress has direct effect on their work-family conflict; and (ii) active coping and job burnout have indirect effect on their job burnout through mediation of active coping and work-family conflict. It was found that their turnover intention was directly affected by job burnout and indirectly affected through mediation of their work-family conflict and active coping. Accordingly, if the recommendations made by this study are employed to reduce nurses' work-family conflict and job burnout by encouraging active coping methods, it is expected that their turnover intention will also be reduced. However, a replication study should be conducted on nurses engaged in nursing positions.

References

Bagozzi, R. P., & Yi, Y. J. (1988). On the evaluation of structural equation models. *Journal of Academy of Market Science, 16*(1), 74-94.

Bartram, T., Casimir, G., Djurkovic, N., Leggat, S. G., & Stanton, P. (2012). Do perceived high performance work systems influence the relationship between emotional labor, burnout and intention to leave? A study of Australian nurses. *Journal of Advanced Nursing, 68*(7), 1567-1578.

Beehr, T. A. (1978). Job stress, employee health, and organizational effectiveness: A facet analysis, model and literature review. *Personnel Psychology, 31*(4), 655-99.

Boyar, S. L., Maertz, C. P., Jr., Pearson, A. W., & Keough, S. (2003). Work-family conflict: A model of linkages between work and family domain variables and turnover intentions. *Journal of Managerial Issues, 15*(2), 175-190.

Burke, R., Moodie, S., Dolan, S. L., & Fiksenbaum, L. (2012). Job demands, social support, work satisfaction and psychological well-being among nurses in Spain. *ESADE Business School Research Paper, 233*, 3-31.

Carlson, D. S., Kacmar, K. M., & Williams, L. J. (2000). Construction and initial validation of a multidimensional measure of work–family conflict. *Journal of Vocational Behavior, 56*(2), 249-276.

Chen, M. J., & Cunradi, C. (2008). Job stress, burnout and substance use among urban transit operators: The potential mediating role of coping behavior. *Work & Stress, 22*(4), 327-340.

Clark, C. C. (1980). Burnout: Assessment and intervention. *Journal of Nursing Administration, 10*(9), 39-44.

Fuentes, R. C. (2013). The influence of demographics, organizational commitment and burnout towards the turnover intentions of teachers. *Southeast Asian Interdisciplinary Research Journal, 1*(1), 145-158.

Fujimoto, T., Kotani, S., & Suzuki, R. (2008). Work–family conflict of nurses in Japan. *Journal of Clinical Nursing, 17*(24), 3286-3295.

Furukawa, M. F., Raghu, T. S., & Shao, B. B. (2011). Electronic medical records, nurse staffing and nurse-sensitive patient outcomes: Evidence from the national database of nursing quality Indicators. *Medical Care Research and Review, 68*(3), 311-331.

Gandi, J. C., Wai, P. S., Karick, H., & Dagona, Z. K. (2011). The role of stress and level of burnout in job performance among nurses. *Mental Health in Family Medicine, 8*(3), 181-194.

Geiger-Brown, J., & Trinkoff, A. M. (2010). Is it time to pull the plug on

12-hours shift? : Part 1. The evidence. *The Journal of Nursing Administration, 40*(3), 100-102.

Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review, 10*(1), 76-88.

Grzywacz, J. G., Frone, M. R., Brewer, C. S., & Kovner, C. T. (2006). Quantifying work-family conflict among registered nurses. *Research in Nursing and Health, 29*(5), 414-426.

Hayes, B., Bonner, A., & Douglas, C. (2013). An introduction to mixed methods research for nephrology nurses. *Renal Society Australasia Journal, 9*(1), 8-14.

Hayes, L. J., O'Brien-Pallas, L., Duffield, C., Shamian, J., Buchan, J., Hughes, F., & North, N. (2012). Nurse turnover: A literature review − An update. *International Journal of Nursing Studies, 49*(7), 887-905.

Hsieh, Y. M., & Hsieh, A. T. (2003). Does job standardization increase job burn-out? *International Journal of Manpower, 24*(5), 590-614.

Herakova, L. L. (2012). Nursing nasculinity: Male nurses' experiences through a co-cultural lens. *Howard Journal of Communications, 23*(4), 332-350.

Jaramillo, F., Mulki, J. P., & Solomon, P. (2006). The role of ethical climate on salesperson's role stress, job attitudes, turnover intention, and job performance. *Journal of Personal Selling & Sales Management, 26*(3), 271-282.

Karatepe, O. M., & Uludag, O. (2008). Role stress, burnout and their effects on frontline hotel employees' job performance: evidence from Northern Cyprus. *International Journal of Tourism Research, 10*(2), 111-126.

Kim, B. H., Chung, B. Y., Kim, J. K., Lee, A. Y., Hwang, S. Y., Cho, J. A., et al. (2013). Current situation and the forecast of the supply and demand of the nursing workforce in Korea. *Korean Journal of Adult Nursing, 25*(6), 701-711.

Kim, H., & Stoner, M. (2008). Burnout and turnover intention among social workers: Effects of role stress, job autonomy and social support. *Administration in Social Work, 32*(3), 5-25.

Kwon, K. J., & Lee, S. H. (2012). Occupational stress and coping styles as factors affecting the burnout of clinical nurses. *Korean Academy of Nursing Administration, 18*(4), 383-393.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping.* New York: Springer.

Lee, E. H., & Lee, J. H. (2000). The moderating effect of coping strategies upon multiple role conflicts and depression within dual employed couples. *Korean Journal of Psychology, 5*(2), 287-303.

Lee, G. S. (2009). *A factor analysis on turnover intention: focused on the IT engineers.*

Unpublished master dissertation, Kyunghee University, Seoul.

Lee, M. J., & Lim, Y. S. (2013). The influence of private security guard's stress coping on job burnout. *Korean Security Science Review, 34*(34), 209-232.

Lee, W. I., Chen, C. W., Chen, T. H., & Chen, C. Y. (2010). The relationship between consumer orientation, service value, medical care service quality and patient satisfaction: The case of a medical center in Southern Taiwan. *African Journal of Business Management, 4*(4), 448-458.

Leineweber, C., Westerlund, H., Chungkham, H. S., Lindqvist, R., Runesdotter S, & Tishelman, C. (2014). Nurses' practice environment and work-family conflict in relation to burnout: A multilevel modeling approach. *PLoS ONE, 9*(5), e96991.

Lin, Q. L., & Kim, H. K. (2011). Prediction model on adaptation to university life among Chinese international students in Korea. *The Journal of Korean Academic Society of Nursing Education, 17*(3), 501-513.

Mahoney, C., Lea, J., Jillson, I., & Meeusen, V. (2014). Turnover of nurse anesthetists: the similarities and differences between countries. *BMC Health Services Research, 14*(Suppl. 2), 72.

McVicar, A. (2003). Workplace stress in nursing: a literature review. *Journal of Advanced Nursing, 44*(6), 633-642.

Moon, S. J., & Han, S. S. (2011). A predictive model on turnover intention of nurses in Korea. *Journal of Korean Academy of Nursing, 41*(5), 633-641.

Needleman, J., Buerhaus, P., Pankratz, V. S., Leibson, C. L., Stevens, S. R., & Harris, M. (2011). Nurse staffing and inpatient hospital mortality. *New England Journal of Medicine, 364*(11), 1037-1045.

Organization for Economic Cooperation and Development (2014). OECD Health Statistics 2014. Retrieved June 16, 2015, from http://www.oecd.org/els/health-systems/health-data.htm

Payne, N. (2001). Occupational stressors and coping as determinants of burnout in female hospice nurses. *Journal of Advanced Nursing, 33*(3), 396-405.

Pines, A., Aronson, E., & Kafry, D. (1981). *Burnout from tedium to personal growth.* New York: Free Press.

Stevens, J. (2002). *Applied Multivariate Statistics for the Social Sciences*. Mahwah, NJ: Lawrence Erlbaum Associates.

Tett, R. P., & Meyer, J. P. (1993). Job satisfaction, organizational commitment, turnover intention, and turnover: path analyses based on meta-analytic findings. *Personnel psychology, 46*(2), 259-293.

Torkelson, E., Muhonen, T., & Peiró, J. (2007). Constructions of work stress and

coping in a female-and a male-dominated department. *Scandinavian Journal of Psychology, 48*(3), 261-270.

Wang, Y., Chang, Y., Fu, J., & Wang, L. (2012). Work-family conflict and burnout among Chinese female nurses: the mediating effect of psychological capital. *BMC public health, 12*(1), 915.

Yildirim, D., & Aycan, Z. (2008). Nurses' work demands and work–family conflict: A questionnaire survey. *International Journal of Nursing Studies, 45*(9), 1366-1378.

Yeon, J. H. (2010). *A study on the effects of social support on work-family conflict, organizational commitment and turnover intention: focus on the effects by types of work-family conflict*. Unpublished master dissertation, Korea University, Seoul, Korea.

Biographical Note: **Sang Sook Han** is a professor in nursing at Kyung Hee University. Her research interests center around statistical methods and anatomy. E-mail: sshan12@khu.ac.kr

Biographical Note: **Jeong Won Han** is an assistant professor in nursing at Kosin University. Her research interests center around statistical methods and colorectal cancer. E-mail: hjw0721@kosin.ac.kr

Biographical Note: **Eun Hee Choi** is a master in nursing at Kyung Hee University. E-mail: ceh2003@hanmail.net