

Effect of Job Demands and Resources by Nurses on Health Problem and Turnover Intention: The Mediating Effects of Work Burnout and Engagement

Jeong-Won Han

College of Nursing, Kosin University

간호사의 직무요구와 직무자원이 건강문제와 이직의도에 미치는 영향: 직무소진과 직무열의의 매개효과

한정원

고신대학교 간호대학

Abstract This study used a job demand-resources model as the basis to examine the effects of job demand and job resources on health problems and turnover intention. A total of 320 nurses who were employed at university hospitals in Seoul participated in the study. The results showed that job demand and job resources had a direct effect on the levels of work burnout and work engagement. Work burnout had a direct effect by increasing the levels of health problems and turnover intentions of nurses; conversely, work engagement had no direct impact on either of the two levels. Job demand and job resources had an indirect effect on increased levels of health problems and turnover intention. The results can be used by hospital administrations to confirm the organizational significance of job resources in increasing job performance and work involvement, as well as to understand the consequences of perceived job demand by nurses.

요 약 본 연구는 직무요구-자원 모형을 바탕으로 간호사의 직무요구와 직무자원, 직무소진과 직무열의, 건강문제와 이직의도 간의 관계를 규명하기 위한 가설적 모형을 구축하고 이를 검증하여, 간호 조직의 성공적인 자원관리 방안을 위한 기초 자료를 제시하고자 시행되었다. 연구 대상자들은 서울시 소재하는 대학병원에서 근무하는 간호사 320명을 대상으로 실시되었다. 연구 결과, 간호사의 직무요구는 직무소진 증가와 직무열의 감소에 직접적인 영향을 미치는 것으로 나타났으며, 직무자원은 직무열의 증가에 직접적인 영향을 미치는 것으로 확인되었다. 직무요구는 직무소진을 매개로 건강문제와 이직의도 증가에 간접적으로 영향을 미치는 것으로 나타났으며, 직무자원은 직무소진과 직무열의를 매개로 건강문제와 이직의도 감소에 유의한 간접효과를 미치는 것으로 나타났다. 직무소진은 건강문제 증가와 이직의도 증가에 직접적인 영향을 미치는 반면, 직무열의는 이직의도에 직접적인 영향을 미치지 않는 것으로 확인되었다. 본 연구의 결과는 간호사들이 지각하는 직무자원과 직무요구가 건강문제와 이직의도에 미치는 영향을 직무소진과 직무열의의 매개 효과로 파악한 기초자료로 간호 관리자들이 조직의 성과를 높이기 위한 전략적 자료로 활용할 수 있을 것이다.

Keywords : Job demand, Job resource, Work burnout, Work engagement, Turnover intention

1. Introduction

In response to the increasing demands of patients for high-quality health care, medical facilities are striving to provide top-rated services. The resulting changes in

1.1 Background

*Corresponding Author : Jeong Won Han(Kosin University)

Tel: +82-51-990-2384 email: hjw0721@kosin.ac.kr

Received June 10, 2016

Revised (1st July 18, 2016, 2nd August 10, 2016)

Accepted August 11, 2016

Published August 31, 2016

their work environment have placed nurses under intense pressure to provide better and more complete care, which in turn has forced them to cope with an unprecedented workload. To mitigate the negative effects that excessive stress in the work place can have on performance, hospital administrations must effectively utilize the job resources available to nurses to provide them with the support needed to meet their work demands [1].

Work burnout is a negative psychological experience that is unavoidable in almost all work places because of the constant interaction between individuals within an organization [2]. In contrast, work engagement, the positive antithesis of burnout, signifies a high level of energy and passion for work [3]. While previous studies focused on burnout, newly developed European instruments have stimulated interest in engagement, with several recent studies considering both concepts [3-5].

Schaufeli and Bakker [3] expanded upon the research of Xanthopoulou et al. [2] to propose the job demand-resources model (JD-R), which allows a comprehensive analysis of the effects of both work burnout and work engagement. Schaufeli and Bakker used this model to explain the effects of these two aspects on health problems and turnover intention in employees. According to this model, work burnout and work engagement are not one-dimensional, separate constructs. Rather, they encompass multiple, independent components that can account for the negative and positive attitudes that employees have towards their work [3]. Work burnout is based on a low level of energy and work identification [5], such that the employee withdraws to cope with perceived physical threat or pain from work. This can lead to a decrease in productivity [6] and an increase in turnover intention [2]. Conversely, work engagement corresponds to a high level of energy and persistence; the employee takes an active role in achieving joy and fulfillment from his or her work, leading to positive work results [4].

Several studies have recently been conducted on work burnout. Others have examined work engagement, including that of nurses, doctors, police officers, and flight attendants in various countries [7-10]. In Korea, most of the relevant research has focused on work burnout in the nursing sector, whereas studies on the positive perspective; that is, an assessment of work engagement, are lacking. In particular, since Schaufeli and Bakker [3] proposed the JD-R model, it has been used to provide a comprehensive analysis of both burnout and engagement in several countries. In Korea, however, the model has been applied only to hospital administrators [10] and to the staff of a bank call-center [11].

To increase work productivity and patient satisfaction in the increasingly competitive healthcare sector, it is important to examine the impacts of job demands and job resources on nurses at an organizational level. In the study by Schaufeli et al. [7] that used the JD-R model [3], excessive workload and job demands were shown to cause stress, which led to burnout, while job resources provided motivation and led to engagement. Thus, the authors concluded that burnout and engagement were closely related to health problems and job turnover intention. Nonetheless, despite the demonstrated cause-and-effect relationship between job demands and work burnout and between job resources and work engagement, direct correlations between burnout and engagement and health problems and turnover intention have yet to be examined.

Therefore, the current study was conducted to create a model and to use the correlations between job demands, job resources, work burnout, and work engagement to examine their relationships with health problems and turnover intention in nurses and to then test the applicability of this model to Korean nurses.

1.2 Purposes

This study was conducted to create a model to explain the effects of job demands and resources on

health problems and turnover intention in Korean nurses. The more specific goals were as follows: First, to create a hypothetical model to explain the correlations between job demands and resources, burnout, engagement, health problems and turnover intention in nurses. Second, to test the fit between the hypothetical model and actual data in order to investigate the cause and effect relationship between variables that affect job demands, job resources, work burnout, work engagement, health problems, and turnover intention in nurses.

2. Method

2.1 Design of study

This cross-sectional research study used the JD-R model to construct a hypothetical model to examine the effects of job demands and job resources on work burnout and work engagement with respect to health problems and turnover intention in nurses. This study is theoretically based on Schaufeli and Bakker's JD-R model and other previous studies and seeks to confirm the relative impact that numerous variables have on nurses' job demands, resources, burnout, engagement, health problems, and turnover intention and to investigate the correlations between these variables. For the job demands and job resources components of the JD-R model, this study designated client-related social stress as job demands and job characteristics as job resources. Dealing with patients and other related forms of social stress impact nurses' work engagement level and can be perceived as factors that affect job demands. The specific characteristics of job resources in the JD-R model are also related to the support that nurses receive in their work environments. Thus, this study used the JD-R model as the basis, work burnout and engagement as mediating variables, and patient-related social stress and work characteristics as exogenous variables to associate with health problems and turnover intention, the endogenous variables, via a hypothetical path model.

2.2 Subjects of study

Among the various university hospitals located in Seoul, three university hospitals with similar nursing grades as designated by the Ministry of Health and Welfare were selected. After explaining the content and purpose of the research to the nursing departments and obtaining their consent, the study selected nurses, who were directly and currently providing care to patients, as the research subjects. The nurses who participated in the study underwent convenience sampling from the nursing department. This study recruited 320 nurses, which was considered an appropriate sample size, as path analysis with a sample over 200 allows for appropriate conclusions regarding the development of a model based on composite indices [12].

2.3 Measurements

2.3.1 Job demands: client-related social stress

Job demands can be perceived as a form of job stress because they require continuous physical, emotional, and mental efforts, and negative reactions can occur simultaneously [3]. This study used the Customer-related Social Stressor (CSS) scale of Dormann and Zapf [13] and the 21 questions (7-point scale) of Yi [11] to conduct an exploratory factor analysis to first examine the construct validity and then choose 15 suitable questions. Sub-factors included "unreasonable requests by patients" and other disproportionate expectations (three items), "patient anger over minor details" and other verbal attacks (six items), "dealing with hostile patients" and other difficult patients (three items), and "unclear requests from patients" and other ambiguous expectations (three items). The reliability in the study by Yi [11] yielded a Cronbach's $\alpha = 0.80 - 0.90$; in this study, Cronbach's $\alpha = 0.87 - 0.92$.

2.3.2 Job resources: job characteristics

Job resources decrease the biological and physical costs of job demands and play a functional role in meeting the work goals [2]. This study applied the job diagnostic survey (JDS) of Hackman and Oldham [14]

to the 15 questions (7-point scale) of Yi [11], and an exploratory factor analysis was conducted to examine construct validity and to determine which questions to extract. Sub-factors included skill variety (two items), task identity (two items), task significance (two items), autonomy (three items), and feedback (three items) for a total of 12 questions. In the study conducted by Yi [11], Cronbach's $\alpha = 0.74 - 0.91$; in this study, Cronbach's $\alpha = 0.73 - 0.90$.

2.3.3 Work burnout

Work burnout occurs in almost all organizations; the employee is exposed to long periods of stress, which leads to a negative psychological experience [2]. This study conducted an exploratory factor analysis of the 20 questions developed by Pine et al. [9] and by Kim [15] to examine construct validity. Eleven questions were subsequently chosen. Sub-factors included physical exhaustion (five items), emotional exhaustion (three items), and mental exhaustion (three items). In the study conducted by Kim [15], Cronbach's $\alpha = 0.91$; in this study, Cronbach's $\alpha = 0.86 - 0.92$.

2.3.4 Work engagement

Work engagement is the sense of fulfillment from and positivity towards given tasks; it indicates a state of passionate and complete engagement in the work [16]. This study conducted an exploratory factor analysis on the Utrecht Work Engagement Scale (UWES) of Schaufeli and Bakker [3] and on the 17 measurement questions (7-point scale) adapted by Yi [11] to examine construct validity. Vigor (three items), dedication (five items), and absorption (three items) were thus extracted for a total of 11 questions. In the study conducted by Yi [11], Cronbach's $\alpha = 0.86 - 0.88$; in this study, Cronbach's $\alpha = 0.80 - 0.92$.

2.3.5 Health problems

This study conducted an exploratory factor analysis on 12 physical factors and six psychological factors

from the Cornell Medical Index (CMI) of Weider et al. [17], specifically adjusted for Koreans, and on six questions on sleep patterns derived from the sleep measurement index of Oh, Song, and Kim [18] to examine their construct validity. Based on the results, physical well-being (six items), psychological well-being (five items), and sleep patterns (six items) were chosen, for a total of 17 questions. In the study conducted by Weider et al. [17], Cronbach's $\alpha = 0.91 - 0.92$; in this study, Cronbach's $\alpha = 0.75 - 0.95$.

2.3.6 Turnover intention

Turnover intention is the direct opposite of intention to remain at the workplace. Here, it was defined as the voluntary plan or intention of a nurse to leave the workplace [19]. This study conducted an exploratory factor analysis of the six questionnaires used in Lee's study [19] to determine construct validity. Intention to leave the profession (two items) and intention to change profession (two items) were chosen for a total of four questions. Lee's [19] study had a Cronbach's $\alpha = 0.52 - 0.68$; in this study, Cronbach's $\alpha = 0.74 - 0.80$.

2.4 Data analysis

SPSS for Windows 18.0 and AMOS 7.0 were used to analyze the data. SPSS was used to analyze the participants' demographic characteristics and the reliability and correlations of the research method. The construct validity was examined during preliminary research through a factor analysis on 110 participants. To examine the validity of the factors used to create a structural equation model for measuring nurses' health problems and turnover intention, a measurement model was developed and subsequently confirmed using AMOS 7.0 factor analysis. Since the model consisted of high-order factors, a high-order factor analysis was used to conduct two separate factor analyses. Convergent validity was verified using factor loading, squared multiple correlation (SMC), standardized residual covariance (SRC), construct reliability (CR), and average variance extraction (AVE); the

discernment validity was conducted independently, without regard to the factor correlation [20]. Correlation coefficients and $\sqrt{\text{AVE}}$ values were also used in the study. χ^2 , χ^2/df (<3.00), AGFI (adjusted goodness-of-fit index >0.80), GFI (goodness of fit index >0.90), CFI (comparative fit index >0.90), RMSR (root mean square residual <0.10), RMSEA (root mean square error of approximation <0.10), and NFI (normed fit index >0.80) were used to examine the fit of the model [21].

2.5 Ethical consideration

In consideration of ethical requirements, the research plan was submitted to and approved by the K-University Hospital Research Ethics Committee. All participants were guaranteed anonymity and confidentiality.

3. Results

3.1 General participant characteristics

Among the 320 participating nurses, 113 (35.4%) were between the ages of 26 and 30 years old, and 210 (65.9%) had completed a 4-year university program as their highest level of education. More than half were unmarried ($n = 194$; 60.7%). Most ($n = 292$; 91.5%) were currently employed as nurses, and 106 (34.8%) were stationed in the internal medicine and surgery departments. The majority of the participants (54.8%) had at some time in their careers switched departments, with 172 (53.8%) stating that they did not wish to switch their current department, and 175 (54.8%) reporting that they did not have turnover intention. Among the participants, 104 (32.8%) had 5 - 10 years of overall experience, 102 (32.1%) had worked in their current hospital for more than 7 years, and 128 (40%) had worked in their current department for less than a year.

3.2 Hypothetical model fit test

The study first conducted two rounds of confirmatory factor analyses to test the measurement

model, during which the model fit and path correlations were analyzed. Through the first round of confirmatory factor analysis, two questions in the turnover intention section were removed because they did not meet the convergent validity of standardized factor loading <0.6 and a significance level (t) > 1.96 [21]. Once this adjustment was made, the model had a satisfactory fit [Table 1]. The measurement validity was examined, and a confirmatory factor analysis of the model was then conducted using all of the factors for each of the latent variables. The fit of the model was $\chi^2 = 334.45$, $p < 0.001$, $\chi^2/\text{df} = 2.12$, RMSEA = 0.06, GFI = 0.90, AGFI = 0.87, NFI = 0.91, CFI = 0.95. During the second confirmatory factor analysis, the physical health sector had a score of 0.48, thus failing to meet the required standard factor loading of 0.6; it was therefore removed. The model fit showed no significant changes ($\chi^2 = 302.17$, $p < 0.001$, $\chi^2/\text{df} = 2.18$, RMSEA = 0.06, GFI = 0.92, AGFI = 0.90, NFI = 0.93, CFI = 0.96), and the latent variables in the hypothetical model all demonstrated a satisfactory fit, supporting its convergent validity. In the second stage, the model was adjusted through a discernment validity test comparing the AVE with the SMC. First, the sleep pattern factor in the health problems section had an explained variance of 0.45, which was lower than the required 0.5. However, it was not removed because nursing duty is divided into three shifts, and accordingly, this factor reflected the specificity of the sector and was thus appropriate for the study. Discernment validity examines whether factors correlate with or are independent of each other, by testing whether they consist of different constructs [22]. In discernment validity tests, the correlation coefficient of each factor must be less than the $\sqrt{\text{AVE}}$. The discernment validities of all factors in the study had correlation coefficients of 0.01 - 0.70, which was less than the $\sqrt{\text{AVE}}$ of 0.96 - 0.97, and were therefore deemed suitable. The SRC requires that if $>5\%$ of the standardized residuals had matrix values of ± 2.58 , the model would have problems; however, in this study it did not exceed 5%.

Table 1. Result of the high-order factor analysis (N=320)

Factors	FL	CR	AVE
Job resource		0.97	0.88
Skill variety	0.68		
Task identity	0.70		
Task significance	0.68		
Autonomy	0.71		
Feedback	0.74		
Job demand		0.99	0.94
Disproportionate customer expectation	0.82		
Customer verbal aggression	0.91		
Disliked customer	0.84		
Ambiguous customer expectation	0.84		
Work burnout		0.97	0.92
Psychological	0.88		
Emotional	0.92		
Work engagement		0.98	0.95
Vigor	.80		
Dedication	0.91		
Absorption	0.85		
Health problem		0.97	0.94
Psychological	0.89		
Sleep pattern	0.68		
Turnover intention		0.98	0.96
Intention to leave profession	0.94		
Intention to change profession	0.71		

$\chi^2=742.01$, $\chi^2/d.f.=2.53$, GFI=0.85 AGFI=0.80, NFI=0.87, CFI=0.91, RMSEA=0.07 FL: Factor loading; CR: Construct reliability; AVE: Average variance extracted

3.3 Direct effect, indirect effect, and total effect

The correlations, direct/indirect effects, and overall effects of the variables in the structural equation model were analyzed as shown in Tables 2 and 3. While job demands showed little correlation with job resources ($r = -0.01$, $p > 0.05$), job demands and work burnout were positively correlated ($r = 0.42$, $p < 0.001$), and job resources and work burnout were inversely correlated ($r = -0.41$, $p < 0.001$). Furthermore, job demands contributed to an increase ($\gamma = 0.35$, $p = 0.010$) and job resources to a decrease ($\gamma = -0.35$, $p = 0.010$) in work burnout; together, they directly accounted for 23.8% of work burnout. Work engagement had an inverse correlation with job demands ($r = -0.17$, $p < 0.05$), a positive correlation with job resources ($r = 0.65$, $p < 0.001$), and an inverse correlation with work burnout ($r = -0.33$, $p < 0.001$). Additionally, job resources directly increased work

engagement ($\gamma = 0.61$, $p = 0.010$) and accounted for 37.2% of work engagement. Health problems significantly correlated with job demands ($r = 0.30$, $p < 0.001$) and work burnout ($r = 0.70$, $p < 0.001$) but had a significant inverse correlation with job resources ($r = -0.34$, $p < 0.001$) and work engagement ($r = -0.33$, $p < 0.001$). In particular, health problems were indirectly increased by job demands ($\gamma = 0.25$, $p = 0.010$) and indirectly decreased by job resources ($\gamma = -0.25$, $p = 0.010$). Work burnout directly increased health problems ($\beta = 0.71$, $p = 0.010$). Thus, the indirect effects of job demands and job resources and the direct effects of work burnout accounted for 50.3% of health problems. Turnover intention significantly correlated with job demands ($r = 0.35$, $p < 0.001$), work burnout ($r = 0.81$, $p < 0.001$), and health problems ($r = 0.59$, $p < 0.001$), and inversely correlated with job resources ($r = -0.41$, $p < 0.001$) and work engagement ($r = -0.41$, $p < 0.001$). In particular, turnover intention was indirectly increased by job demands ($\gamma = 0.29$, $p = 0.010$) and indirectly decreased by job resources ($\gamma = -0.21$, $p = 0.010$). Work burnout directly increased turnover intention ($\beta = 0.83$, $p = 0.010$), but work engagement had no direct effects on decreasing turnover intention. Therefore, the indirect effects of job demands and job resources and the direct effects of work burnout accounted for 56.9% of turnover intention.

Table 2. The discriminant validity of the model (N=320)

Variables	X1	X2	X3	X4	X5	X6
X1	0.97					
X2	-0.01	0.96				
X3	0.42**	-0.41**	0.97			
X4	-0.17*	0.65**	-0.33**	0.98		
X5	0.30**	-0.34**	0.70**	-0.33**	0.96	
X6	0.35**	-0.41**	0.81**	-0.41**	0.59**	0.97

X1=Job demand; X2=Job resource; X3=Work burnout; X4=Work engagement; X5=Health problem; X6=Turnover intention, Italics: $\sqrt{\text{AVE}}$; Non italics: Correlation coefficient; * $p < 0.05$, ** $p < 0.001$

Table 3. Effects of predictor variables in the modified model

(N=320)

Endogenous variables	Exogenous variables	Direct effect (p)	Indirect effect (p)	Total effect (p)	SMC (%)
Work burnout	Job demand	0.35 (0.010)		0.35(0.010)	0.24
	Job resource	-0.35 (0.010)		-0.35(0.010)	
Work engagement	Job resource	0.61 (0.010)		0.61(0.010)	0.37
Health problem	Job demand		0.25(0.010)	0.25(0.010)	0.50
	Job resource		-0.25(0.010)	-0.25(0.010)	
	Work burnout	0.71 (0.010)		0.71(0.010)	
Turnover intention	Job demand		0.29(0.010)	0.29(0.010)	0.57
	Job resource		-0.21(0.010)	-0.21(0.010)	
	Work burnout	0.83 (0.010)		0.83(0.010)	
	Work engagement	0.12 (0.090)		0.12(0.090)	

4. Discussion

This study, based on the JD-R model of Schaufeli and Bakker [3], created and tested a structural model to examine the correlations between job demands, job resources, work burnout, and work engagement and health problems and job turnover intention as well as a possible causal link between job demands and job resources and health problems and turnover intention through work burnout and work engagement. Based on this research, the findings were as follows.

First, there was no significant correlation between environmental job demands and job resources. This shows that—as Schaufeli and Bakker [3] suggested in their JD-R model, and as previous studies conducted in various other fields have found—job demands require a large amount of physical and emotional effort from employees. Additionally, because these efforts can be accompanied by irreversibly negative responses, they can lead to work stress [23].

On the other hand, job resources—whether physical, psychological, emotional, or organizational—decrease the physical and emotional costs of job demands and thus play a functional role in achieving task goals and stimulating individual growth, learning, and development. Job resources are therefore essential for coping with excessive job demands and carrying out tasks. From this perspective, job resources can be viewed as inversely related to job demands. Thus, the examination of previously conducted studies [2,7,24]

suggests that compared to the continuous effort required from nurses when dealing with unreasonable demands, excessive sensitivity, verbal abuse, and the strong sense of patient responsibility, both organizational support and job resources that nurses need to effectively deal with their job demands are lacking. Given that organizational job resources can increase productivity, further research is warranted to determine the relationship that nurses perceive between job demands and job resources.

Second, a significant inverse correlation between work burnout and work engagement was determined, confirming previous research [6,11,25], in which the Schaufeli and Bakker [3] model was applied to demonstrate the polarity between work burnout and work engagement. Thus, while nurses experiencing work engagement display encouraging behavior to gain personal joy and fulfillment, nurses experiencing work burnout display restrained behavior to avoid exposing them to physical threat or pain. Therefore, while previous research on organizational effectiveness in the nursing field focused on work burnout, an evaluation of work engagement is a more effective alternative, as it offers a more positive approach to understanding organizational dynamics and employee behavior and to seeking various ways to utilize job resources and increase work engagement.

Third, this study identified a significant correlation between health problems and turnover intention. This relationship results from excessive task-related burdens

as well as stress and insufficient defense mechanisms, all of which lead to mental and physical health problems, as demonstrated in this and other studies [26, 27]. In particular, while it was previously believed that turnover intention was mostly affected by personal character traits and work-related factors, the results show that health problems such as mental stress and insomnia also significantly influence turnover intention.

Fourth, an analysis of the direct and indirect effects of job demands, job resources, work burnout, work engagement, and health problems showed that job demands increase work burnout and decrease work engagement, while job resources increase work engagement. This aligns with the findings of previous studies [2,3] using the JD-R model, in which job demands were shown to increase work burnout and decrease work engagement and job resources shown to directly increase work engagement. Additionally, the relationship between job demands and work burnout determined in this study is in agreement with studies of flight attendants [13], bank telephone operators [11], manufacturing employees [2], and managers [28]. The large number of interactions between nurses and patients, patient families, and other hospital employees leads to burnout from excessive job demands and difficulties in regaining energy, which eventually results in work burnout. On the other hand, this study also found that job resources are a pivotal factor in preventing work burnout; in addition to decreasing work burnout, they also increase work engagement. Therefore, this study proposes that by developing methods to facilitate task variety, work responsibility, task identity, task significance regarding work performance, autonomy regarding given tasks, and feedback regarding task performance, nursing organizations can not only decrease work burnout but also increase work engagement. As there are no precedents for this study in the nursing field, replication studies should be conducted to confirm the results.

Lastly, it was found that through work burnout and work engagement, job demands and job resources exert

significant indirect effects on health problems and turnover intention. Additionally, this study found that work burnout, a mediating variable, exerted a significant direct influence on health problems and turnover intention, while work engagement, the other mediating variable, had little significant effect on turnover intention. Although the current study was conducted with the prediction that an inverse relationship between work burnout and work engagement would cause work burnout to directly increase and work engagement to directly decrease turnover intention, it found instead that work engagement had no direct influence on turnover intention.

This finding contradicts Schaufeli and Bakker's JD-R model, in which job demands and job resources are inversely related. The difference likely arises from the perception of Korean nurses that job resources do not meet job demands. Thus, factors other than job resources may impact work engagement but remain to be identified in additional studies. The results clearly identify a need for the development of strategies to decrease the psychological stress that arises from the nurses' interactions with patients and patient families to decrease work burnout and increase work engagement. In addition, nursing administrators must create more active measures to boost feedback, variety, identity, and significance regarding hospital tasks. When embedded in integrated, organizational management strategies, these measures can decrease work burnout and increase work engagement, eventually alleviating health problems and decreasing turnover rates.

5. Conclusion

This study applied the JD-R model of Schaufeli and Bakker to examine work burnout, work engagement, health problems, and turnover intention in the nursing field. The results from this study can be used by nursing administrators to identify the relationship between work performance and the job resources that

increase task involvement, and thus to utilize the relationships that nurses perceive between these resources and organizational job demands. Furthermore, the findings can be used to create and apply organizational management strategies that take the overarching factors affecting work burnout, work engagement, health problems, and turnover intention in nurses into consideration. By adopting this approach, employee work satisfaction will be maximized and, by extension, so will the organization's productivity and efficiency.

References

- [1] G. Jourdain, D. Chênevert, "Job demands-resources, burnout and intention to leave the nursing profession: A questionnaire survey," *International Journal of Nursing Studies*, vol. 47, no. 6, pp. 709-722, 2010.
DOI: <http://dx.doi.org/10.1016/j.ijnurstu.2009.11.007>
- [2] D. Xanthopoulou, A. B. Bakker, E. Demerouti, W. B. Schaufeli, "The role of personal resources in the job demands-resources model," *International journal of stress management*, vol. 14, no. 2, pp. 121-141, 2007.
DOI: <http://dx.doi.org/10.1037/1072-5245.14.2.121>
- [3] W. B. Schaufeli, A. B. Bakker, "Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study," *Journal of Organizational Behavior*, vol. 25, no. 3, pp. 293-315, 2004.
DOI: <http://dx.doi.org/10.1002/job.248>
- [4] W. B. Schaufeli, T. W. Taris, T. W., "A critical review of the job demands-resources model: Implications for improving work and health. In Bridging occupational, organizational and public health, pp. 43-68. Springer Netherlands, 2014.
DOI: http://dx.doi.org/10.1007/978-94-007-5640-3_4
- [5] A. Shirom, "Job related burnout: A review (Eds.)," *Hand-book of occupational health psychology*. pp. 245-264, Washington, DC: American Psychological Association, 2002.
DOI: <http://dx.doi.org/10.1037/10474-012>
- [6] N. D. Nayeri, R. Negarandeh, M. Vaismoradi, F. Ahmadi, S. Faghihzadeh, "Burnout and productivity among Iranian nurses," *Nursing & Health Science*, vol. 11, no. 3, pp. 263-270, 2009.
DOI: <http://dx.doi.org/10.1111/j.1442-2018.2009.00449.x>
- [7] W. B. Schaufeli, A. B. Bakker, W. van Rhenen, "How changes in job demands and resources predict burnout, work engagement and sickness absenteeism," *Journal of Organizational Behavior*, vol. 30, no. 7, pp. 893-917, 2009.
DOI: <http://dx.doi.org/10.1002/job.595>
- [8] M. R. Simpson, "Predictors of work engagement among registered nurses," *Western Journal of Nursing Research*, vol. 31, no. 1, pp. 44-65, 2009.
DOI: <http://dx.doi.org/10.1177/0193945908319993>
- [9] A. M. Pines, E. Aronson, D. Kafry, "Burnout: From tedium to personal growth," pp. 15, New York: Free Press, 1981.
- [10] A. B. Bakker, E. Demerouti, A. I. Sanz-Vergel, "Burnout and work engagement: The JD - R approach," *Organizational Psychology and Organizational Behavior*, vol. 1, No1, pp. 389-411, 2014.
DOI: <http://dx.doi.org/10.1146/annurev-orgpsych-031413-091235>
- [11] R. Yi, "The role of emotional; Labor strategies in job demand-resource model with burnout and engagement - call center employees case-," University of Ajou University, Seoul, Korea, 2006.
- [12] L. Z. Hu, P. M. Bentler, "Cut-off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives," *Structural Equation Modeling*, vol. 6, no. 1, pp. 1-55, 1999.
DOI: <http://dx.doi.org/10.1080/10705519909540118>
- [13] C. Dormann, D. Zapf, "Customer-related social stressors and burnout," *Journal of Occupational Health Psychology*, vol. 9, no. 1, pp. 61-82, 2004.
DOI: <http://dx.doi.org/10.1037/1076-8998.9.1.61>
- [14] J. R. Hackman, G. R. Oldham, "Motivation through the design of work: Test of a theory," *Organizational Behavior and Human Performance*, vol. 16, no. 2, pp. 250-279, 1976.
DOI: [http://dx.doi.org/10.1016/0030-5073\(76\)90016-7](http://dx.doi.org/10.1016/0030-5073(76)90016-7)
- [15] Y. S. Kim, "Nurses job stress influencing on the burnout and turnover intentions," Unpublished master's thesis, Kyung Hee University, Seoul. 2011.
- [16] A. Shimazu, W. B. Schaufeli, K. Kamiyama, N. Kawakami, "Workaholism vs. work engagement: the two different predictors of future well-being and performance," *International Journal of Behavioral Medicine*, vol. 22, no. 1, pp. 18-23, 2015.
DOI: <http://dx.doi.org/10.1007/s12529-014-9410-x>
- [17] A. Weider, K. Brodman, B. Mittelman, D. Wechsler, H. G. Wolff, "The Cornell Service Index: A method for quickly assaying personality and psychosomatic disturbances in men in the armed forces," *War Medicine*, vol. 7, pp. 209, 1945.
- [18] J. J. Oh, M. S. Song, S. M. Kim, "Development and validation of Korean sleep scale," *Journal of Korean Academy Nursing*, vol. 28, no. 3, pp. 563-572, 1988.
- [19] K. S. Lee, "Factor analysis of turnover intention in IT engineers". University of Kyung Hee University, Seoul, Korea, 2009.
- [20] R. T. Calantone, Y. S. Zhao, "Joint ventures in China: A comparative study of Japanese, Korean, and U. D. partners," *Journal of International Marketing*, vol. 9, no. 1, pp. 1-23, 2001.
DOI: <http://dx.doi.org/10.1509/jimk.9.1.1.19834>
- [21] R. P. Bagozzi, Y. J. Yi, "On the evaluation of structural equation models," *Journal of Academy of Marketing Science*, vol. 16, no. 1, pp. 74-94, 1988.
DOI: <http://dx.doi.org/10.1007/BF02723327>

- [22] P. M. Bentler, C. Chou, "Practical issues in structural modeling," *Sociological Methods and Research*, vol. 16, no. 1, pp. 78-117, 1988.
DOI: <http://dx.doi.org/10.1177/0049124187016001004>
- [23] S. Sonnetag, F. R. H. Zijlstra, "Job characteristics and off-job time activities as predictors of need for recovery, well-being, and fatigue," *Journal of Applied Psychology*, vol. 91, no. 2, pp. 330-350, 2006.
DOI: <http://dx.doi.org/10.1037/0021-9010.91.2.330>
- [24] E. R. Crawford, J. A. LePine, B. L. Rich, "Linking job demands and resources to employee engagement and burnout: a theoretical extension and meta-analytic test," *Journal of Applied Psychology*, vol. 95, no. 5, pp. 834-2010.
DOI: <http://dx.doi.org/10.1037/a0019364>
- [25] P. Van Bogaert, C. Kowalski, S. M. Weeks, D Van heusdena, S. P. Clarke, "The relationship between nurse practice environment, nurse work characteristics, burnout and job outcome and quality of nursing care: a cross-sectional survey," *International Journal of Nursing Studies*, vol. 50, no. 12, pp. 1667-1677, 2013.
DOI: <http://dx.doi.org/10.1016/j.ijnurstu.2013.05.010>
- [26] A. M. Mosadeghrad, "Occupational stress and turnover intention: implications for nursing management," *International Journal of Health Policy and Management*, vol. 1, no. 2, pp. 169-176, 2013.
DOI: <http://dx.doi.org/10.15171/ijhpm.2013.30>
- [27] G. Mark, A. P. Smith, "Occupational stress, job characteristics, coping, and the mental health of nurses," *British Journal of Health Psychology*, vol. 17, no. 3, pp. 505-521, 2012.
DOI: <http://dx.doi.org/10.1111/j.2044-8287.2011.02051.x>
- [28] M. R. Barrick, M. K. Mount, N. Li, "The theory of purposeful work behavior: The role of personality, higher-order goals, and job characteristics," *Academy of Management Review*, vol. 38, no. 1, pp. 132-153, 2013.
DOI: <http://dx.doi.org/10.5465/amr.2010.0479>

Jeong-Won Han

[Regular member]



- Aug. 2011 : Kyunghee Univ.,
Administration, MS
- Aug. 2014 : Kyunghee Univ.,
Nursing, PhD
- Mar. 2015 ~ Current : Kosin
Univ., Dept. of Nursing Assistant
professor

<Research Interests>

Cancer, Obesity, Turnover intention