

JOB DEMANDS–RESOURCES MODEL AFFECTS THE PERFORMANCE OF ASSOCIATE NURSES IN HOSPITAL

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Abstract

Low nurses' performance is related with increased job demands and unprofessional job resources. This cross-sectional study aimed to analyze the effects of the job demands–resources model on the performance of associate nurses. The study population was composed of 126 nurses randomly selected. Data were analyzed using the multiple linear regression test. The results showed that job demands and job resources significantly affected the performance of associate nurses. A moderate or heavy level of job demands supported with good job resources will have a positive effect on nurse motivation; thus, nurse's performance remains good. Job demands must be balanced with job resources, which is important in formulating an organizational policy model that contributes to improving nurse performance.

Keywords: job demands–resources model, nurse performance

Abstrak

Model Tuntutan-Sumber Daya Pekerjaan Memengaruhi Kinerja Perawat Pelaksana di Rumah Sakit. Kurangnya kinerja perawat berkaitan dengan tuntutan pekerjaan yang meningkat dan sumber daya pekerjaan yang tidak profesional. Penelitian ini bertujuan untuk menganalisis pengaruh job demands-resources model terhadap kinerja perawat pelaksana dengan menggunakan cross-sectional. Sampel dalam penelitian ini sebanyak 126 perawat ruangan rawat inap dan menggunakan teknik simple random sampling. Analisis dilakukan menggunakan persamaan regresi linier berganda. Hasil penelitian menunjukkan bahwa job demands-resources model berpengaruh terhadap kinerja perawat pelaksana. Tuntutan pekerjaan pada kategori sedang maupun berat namun diimbangi dengan sumber daya pekerjaan yang baik, maka perawat memiliki motivasi yang bersifat positif sehingga kinerja perawat tetap baik. Direkomendasikan pada pihak manajemen agar tuntutan pekerjaan yang diberikan harus diseimbangkan dengan sumber daya pekerjaan sehingga pada akhirnya dapat dirumuskan model kebijakan organisasi yang berkontribusi dalam meningkatkan kinerja perawat.

Kata Kunci: job demands-resources model, kinerja perawat

Introduction

Performance becomes an important aspect in hospital management because it is considered to improve capability, creativity, and nursing quality (Muller, Bezuidenhout, & Jooste, 2011). According to the Public Service and Merit Protection Commission (PSMPC), the hospital manager should consider employees' health to improve performance by increasing creativity among individuals and teams (Awases, Bezuidenhout, & Roos, 2013). The manager should

support nurses to be always responsible and to create optimum work climate (Caricati et al., 2013).

Nurses often face emergency at work, which results in poor physiological and psychological health (Weiten, 2010). Inappropriate work autonomy and career path for nurse's future are some reasons why nurses working in hospitals experience high work pressure (Montgomery, Spanu, Baban, & Panagopoulou, 2015). The Second South African Nurses Conference in

2013 on nurse performance reported that factors causing poor performance in the nursing sector are resource scarcity, high work fatigue, unhappiness in performing work due to flawed work program, low remuneration and little opportunity to improve knowledge on nursing science for continued growth, quality issue and low work satisfaction, and insulting words from patients, patients' families, and staffs (Klopper & Coetzee, 2013).

Taris, Van Beek, and Schaufeli (2014) applied the job demands–resources model and found the mediating role of *work* engagement and burnout in motivating affects fatigue. In another study, Al-Homayan, Shamsudin, Subramaniam, and Islam (2013) found significant relations between job demands and job resources and nurse performance; that is, the job demands–resources model can tackle work stress. An Indonesian study on job demands–resources model by Lestari and Zamralita (2018) reported that job demand is the most common cognitive demand experienced by employees of an institution in DKI Jakarta, while the least common aspect is role conflict. The most common work support for job resources is coaching by manager, while the least common is autonomy.

Dr. Pirngadi Hospital in Medan is a type B Government Hospital of North Sumatera Province, Indonesia. Based on the report of the Quality Committee, the average length of treating a patient was 6.80 days, and in 2017, the average length of stay was 5.83 days. According to the Department of Health, the Dr. Pirngadi Hospital has nursing service quality which is not consistent with patient expectation, affecting patient satisfaction and performance assessment of associate nurses in the evaluation performed every year in accordance with the government's format of the Employee Implementation Assessment List (DP3). The result of preliminary interviews with three of five nurses in the emergency room shows that excessive workload, shortage of resources, and inappropriate work shift cause work stress among nurses.

The management should understand the job demands–resources model to improve performance because it can solve work fatigue, enhance nurse welfare, and affect employee's psychological satisfaction. Good work design could improve motivation, cultivate insight, increase job resources productivity, and improve organizational performance at organizational and individual levels. This concept is supported by Schaufeli's study (2017) who uses eight stages of implementation of the job demands–resources model on hospital employees as a guide to measure work engagement and solve work fatigue. Thus, managers could understand and reduce employee demands, formulate policy on the number of employees, schedule employee training program, conduct survey in accordance with managerial policy, maintain a good two-way communication between manager and employee, improve mutual appreciation and respect within organization, use technological system to accelerate work, and provide coaching to employees on how to prepare work and manage time. Bakker (2014) also argued that the job demands–resources model can be used to correct job characteristics, work fatigue, and work engagement for all organizations, including health. Therefore, the researcher was interested in studying the effect of the job demands–resources model on nurse performance in the Z Hospital of Medan, Indonesia. Thus, this study aimed to analyze the effect of the job demands–resources model on the performance of associate nurses in the Z Hospital of Medan.

Methods

This quantitative study followed a cross-sectional with causality design to examine causal and intervariable relations (Grove, Gray, & Burns, 2014).

The study was conducted in the Z Hospital in Medan, Indonesia. The research population was composed of 196 nurses from 14 inpatient rooms. The sample population was composed of 126 associate nurses identified using simple random sampling. The simple random sampling

method was performed by lottery in which the researcher wrote the initials of the nurses on papers put inside a closed box. After the papers were mixed, the researcher picked the papers one by one until reaching the set sample size. Nurses working in classes I, II, III, VIP I, and VIP II inpatient rooms and nurses with >1 year of work experience were included. Meanwhile, nurse on leave or sick during the research, nurses on training or study leave, and nurses not willing to participate in the study were excluded.

To collect primary data, a questionnaire divided into three parts was used: (1) the job demands–resources scale consisted of 40 items on speed and amount of work, mental load, emotional load, work variation, learning opportunity, work independence, relation with colleague, relation with direct superior, communication, participation, remuneration, and career path. (2) The work design questionnaire consisted of four characteristic items: namely, task characteristics, knowledge characteristics, social characteristics, and contextual characteristic. (3) The performance questionnaire consisted of 21 task performance items and 18 contextual performance items. However, every questionnaire item was revised due to incorrect language use which might make it difficult for the respondents to provide appropriate answer and the items may be unsuitable for the hospital environment. Every questionnaire item underwent validity test; thus, a pilot study was performed. The validity test scores were as follows: work demand with 24 items, 0.91; job resources with 14 items, 1; performance with 40 items, 0.97. Validity score used the content validity index (CVI), an expert assessment by analyzing and evaluating research questionnaires. A procedure was assessed by an expert using a 4-point scale (1 = irrelevant; 4 = very relevant). The CVI of the total instruments was 3 or 4. $CVI > 0.80$ indicated good content validity (Polit & Beck, 2012). Reliability test scores of job demand, job resources, and performance were 0.976, 0.966, and 0.911, respectively. Consistent with the study of Eisingerich and Rubera

(2010), the reliability test can use Cronbach's alpha with minimum reliability score of 0.70.

The data analysis used SPSS version 21 for Windows (IBM Corp., Armonk, NY, USA). Univariate data analysis produces frequency distribution of the respondents. Pearson correlation test was used to examine the relation of job demands–resources model with nurse's performance. A multivariate analysis used multiple linear regression test on the dimension of the job demands–resources model which most affected the performance of associate nurses (Polit & Beck, 2014).

This study has received ethical approval from the Ethics Committee of the Faculty of Nursing, Universitas Sumatera Utara with registration number 1613 / I / SP / 2019.

Results

As shown in Table 1, the majority of the respondents were 36–45 years old (44.4%), female (92.9%), and had an associate's degree in nursing (61.9%). Furthermore, most respondents were civil servants (56.3%) and had worked as nurses for 1–5 years (46.0%). In addition, most nurses had moderate job demands (57.2%), most nurses had good job resources (71.4%), and most nurses had good performance (51.6%).

Based on the Pearson correlation test in Table 2, job demands has $p \text{ value} = 0.015 < \alpha = 0.05$, which means that job demands were related with the work performance of associate nurses, i.e., lighter job demands improved performance of associate nurses and vice versa. Meanwhile, job resources have a $p \text{ value} = 0.006 < \alpha = 0.05$; this indicates that job resources were related with the work performance of associate nurses in the Z Hospital of Medan. Moreover, better job resources improved the work performance of associate nurses and vice versa.

In Table 3, the determination coefficient (R^2) in Model 1 is 0.059, and the effect of job demands

on nurse performance was 5.9%. In Model 2, the correlation between job resources (X2) and nurse performance (Y) was 0.302, and the percentage of the effect of job resources on nurse performance was 0.091 or 9.1%.

Therefore, the most dominant variable affecting nurse performance was job resources with correlation value of 9.1%. Based on the multivariate analysis, the result of multiple linear regression test in Figure 1.

Table 1. Distribution of Associate Nurses' Characteristics in the Z Hospital

Characteristic	Frequency	Percentage
Age		
17–25 years old	3	2.4
26–35 years old	39	31.0
36–45 years old	56	44.4
46–55 years old	27	21.4
56–65 years old	1	0.8
Sex		
Male	9	7.1
Female	117	92.9
Education Level		
High school	1	0.8
DIII nursing	78	61.9
Bachelor	47	37.3
Duration of Work		
1–5 years	58	46.0
6–10 years	25	19.8
>10 years	43	34.1
Employment status		
Government employees	71	56.3
Non-government employees	56	43.7
Job Demands		
Low	9	7.1
Medium	72	57.2
High	45	35.7
Job Resources		
Good	90	71.4
Not good	36	28.6
Performance		
Good	65	51.6
Not good	61	48.4

Table 2. Relationship between Job Demands, Job Resources, and the Performance of Associate Nurses in the Z Hospital

Variable	Correlations	Performance
Job Demands	Person Correlation	0.217
	Sig. (2-tailed)	0.015
	N	126
Job Resources	Person Correlation	0.243
	Sig. (2-tailed)	0.006
	N	126

$$\text{Performance} = (88.716) + 0.169 \text{ job demands} + 0.315 \text{ job resources}$$

Figure 1. Multiple Linear Regression Test

Table 3. Most Dominant Factor Influencing the Performance of Associate Nurses in the Z Hospital

Model	R	R Square
1	0.243	0.059
2	0.302	0.091

Tabel 4. Multiple Linear Regression Equations

Model	Coefficients ^a		
	Unstandardized Coefficients		Standardized Coefficients
	B	Std. Error	Beta
(Constant)	88.716	8.415	
Job Demands	0.169	0.81	0.182
Job Resources	0.315	0.128	0.214

Using multiple linear regression test, multivariate analysis was performed to examine the dimension of the job demands–resources model which most affected the performance of associate nurses. Multiple linear regression test was used because independent variables had an interval scale and > 1 variables were complete numerical or a combination of numerical and categorical data. The dependent variable had an interval scale, i.e., only one variable and dichotomous (numerical) (Polit & Beck, 2012).

The constant value was 88.716. The coefficient values of job demands and job resources had positive effects on performance. Based on the unstandardized beta coefficient in Table 4, job resources had more significant effect ($p=0.015 < \alpha=0.05$) on nurse performance than job demands ($p=0.039 < \alpha=0.05$).

Discussion

In this study, most of the associate nurses were late adults, with an average age of 38.60 years. The age of associate nurses strongly affected performance, i.e., the older the nurse, the gre-

ater the responsibility and experience in handling workload. One's consideration in decision making, rational thinking, emotion control, and tolerance to other nurses affected improved performance. This finding was supported by Rudianti (2011) that nurses aged < 32 years have poor performance (53.4%) than nurses aged ≥ 32 years (33.7%).

Similarly, more associate nurses with <7 years of service had poor performance (55.6%) than nurses with 7–12 years of service (45.3%). This was different from the present result that most associate female nurses aged 36–45 years and had 1–5 years of service and associate's degree in nursing had good performance (51.6%). This finding was not in line with that of Handayani, Fannya, and Nazofah (2018) that 57.8% of the performance of nurses aged 26–35 years old (64.4%) was poor. Walukow, Mandagi, and Rumayar (2018) also found significant relation between length of service and nurse performance in Minahasa Selatan Hospital, Indonesia.

Megawati (2017) explained the effect of personal characteristics on nurse performance in the Dr. Pirngadi Hospital, Medan, Indonesia.

Education and gender have the strongest effects on performance. In the present study, results of the univariate analysis revealed that job demands of associate nurses is moderate at 78.09 with standard deviation of 17.125 and most nurses were 36–45 years old. This finding was consistent with that of Lariwu, Kiling, and Rumagit (2017) that 48.5% of job demands were moderate among nurses aged 20–30 years in GMIM Bethesda General Hospital of Tomohon. Similarly, Widiastuti, Hartiti, and Pohan (2018) reported that 75% of nurses perceived moderate job demands, with most respondents being 25–35 years old. The job demands category was the same, but every study enrolled subjects of different ages because every hospital has different management regulations and employee management in employee recruitment, selection, classification, and appointment by career level.

Job resources were good with average value of 50.61 and standard deviation of 10.801. The result was consistent with that of Sitinjak and Wardhana (2016) that 79.6% of the nurses have good job resources because nurses agree that social relations between colleagues and superior and patient are important at work and 80.5% of the nurses have good motivation that affected their performance in Paviliun Anyelir installation of Budi Kemuliaan Hospital in Batam, Indonesia. Shasmitha and Yullyzar (2017) similarly show that 64% of nurse job resources were good because they have good motivation, affecting service quality and thus requiring regular supervision from superiors.

The average good performance was 117.89 with standard deviation of 15.923. These values are in line with those reported by Terok, Sumarauw, and Onseng (2015), i.e., 82.5% of nurse performance and 75% of nursing process implementations were good. A relation was found between patient satisfaction when going to hospital because nurses have implemented the nursing process consistent with the nursing standard, as indicated by $p = 0.006 < \alpha = 0.05$. Therefore, good nurse performance can be observed.

Job demands had significant relation ($p = 0.015 < \alpha = 0.05$) with the performance of associate nurses. This means that lighter job demands of associate nurses would improve their performance and heavier job demands would their lower performance. Job demands trigger stress, affecting workload and responsibility to complete work within a limited time, especially when the employee has difficulty in work delivery (Al-Homayan, Shamsudin, Subramaniam, & Islam, 2013). The present result was in line with the finding of Casmiati, Haryono, and Fathoni (2015) that job demand-moderated burn-out has significant positive effect on performance. Moreover, Bakri (2015) showed that job demand is high and has positive effect on work stress, but supervisor support can improve nurse performance.

Job resources had significant relation ($p = 0.006 < \alpha = 0.05$) with the performance of associate nurses. This meant that better job resources would improve the performance of associate nurses and poor job resources would lower the performance of these nurses. It was because job resources helped employees performed work and handle job demand on physiological and psychological costs. Moreover, job resources could motivate personal growth and development. If the job demand was high, job resources should be high. Interpersonal relation, social relation, work arrangement, and work itself were related with job resources. Salary, supervisory support, feedback, role clarity, autonomy, and empowerment are parts of job resources (Bakker & Demerouti, 2007). This was supported by the finding of Onyango and Wanyoike (2014) that lower work motivation can affect employee performance, characterized by undisciplined and irresponsible nurse attitude in performing work. Similarly, Bhatti, Mat, and Juhari (2018) stated that job resources affect nurse performance when delivering professional nursing care to patients.

This result study shows that the higher the job demands, the higher the depressive phase. Therefore, good job resources were necessary to

reach an organizational goal, as characterized by every employee having high sense of responsibility, strong commitment, and no fear in expressing an opinion. In this way, all systematically prepared activities were performed well and the organizational goal was achieved.

Based on unstandardized coefficient beta of variables in Table 4, job resources had the biggest effect on performance (0.315). This study showed that job resources had the strongest or most dominant effect compared with job demands: the better the nurse job resources, the better the nurse performance. This finding was in line with the study of Jourdain and Chenevert (2010) who reported a significant relation ($p < 0.001$) between job resources (supervisory support and recognition from patient) and cynicism on job demands (excessive workload and conflict with patient) to tackle emotional fatigue to improve performance. Mulyono and Listiya (2019) also found that the motivation by hospital leader affects nurses' performance. Hence, job resources should keep up with the job demand so that nurses have positive motivation, not fatigued or experience work stress, nurse retention is prevented, and nurse health is maintained.

As limitations, this study did not enroll nurses from various sectors, e.g., private hospital (Polit & Beck, 2014). The study did not focus on personal resources which are parts of the job demands–resources model and did not describe work engagement as mediation to analyze performance (Bakker, 2011). The results were based on questionnaire; hence, the researcher could not see the respondents' reactions when filling the questionnaire. Given the cross-sectional and causality design with one-time data collection, the researcher could not describe development of a certain event (Grove, Gray, & Burns, 2014). Thus, studies with longitudinal design are warranted to collect long-term data.

Conclusions

Based on the presented results and discussion, the job demands–resources model affects the

performance of associate nurses and job resources have the greatest effect on the performance of associate nurses. Job resources are the most dominant factors affecting the performance of associate nurse compared with job demands. If moderate or heavy job demands are offset by good job resources, nurses have positive motivation and do not experience work fatigue and stress, there is no nurse retention, and nurse health is not compromised, resulting in better nurse performance.

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