

Optimizing shift scheduling and work-life balance to improve job satisfaction among female nurses

Optimización de la programación de turnos y el equilibrio entre la vida laboral y personal para mejorar la satisfacción laboral entre las enfermeras

Tita Rohita^{1a,d*}, Nursalam Nursalam^{2b}, Krisna Yetti^{3c}, Kuntarti Kuntarti^{4c}, Dedeng Nurkholik^{5d}, Idyatul Hasanah^{6e}

SUMMARY

Introduction: Among the numerous factors that can improve job satisfaction are challenging work, rewards that meet employees' expectations, a comfortable working environment, and a balance between personal life and work (work-life balance). This study analyzed the relationship between shift schedule arrangement and work-life balance among female nurses and its impact on job satisfaction.

Methods: This study adopted a cross-sectional approach. The population consisted of nurses who have civil servant status in one of the regional hospitals in Indonesia. The participants were recruited using proportionate stratified random sampling with 100 respondents. The variables included shift schedule arrangement, work-life balance, and job satisfaction.

In addition, job satisfaction, shift schedules, and work-life balance questionnaires were collected. The analysis was tested using the Chi-Square test.

Results: Most participants (60 %) of the participating female nurses expressed satisfaction with their work, and their perceptions of shift scheduling and work-life balance were mostly positive. However, the proportion of nurses who perceived their work-life balance positively (65 %) was greater than the proportion who perceived their schedule positively (59 %). A Chi-Square test revealed a significant correlation between job satisfaction and three factors: education level (p -value 0,008; $OR = 1.40$), shift schedule arrangements (p -value 0.006; $OR = 3.08$), and work-life balance (p -value 0.016; $OR = 2.82$).

Conclusion: The finding showed a significant correlation between education level, shift schedule, work-life balance, and job satisfaction among female nurses. If there is no clear pattern to work shifts, nurses in inpatient units will experience greater working stress and declining job satisfaction. Organizations can help employees to improve their work-life balance

DOI: <https://doi.org/10.47307/GMC.2022.130.s5.37>

ORCID ID: 0000-0003-3715-7960¹

ORCID ID: 0000-0002-9052-6983²

ORCID ID: 0000-0001-7614-632X³

ORCID ID: 0000-0003-0311-9077⁴

ORCID ID: 0000-0002-1605-1860⁵

ORCID ID: 0000-0002-3277-9392⁶

^aDoctor of Nursing Student, Faculty of Nursing, Universitas Airlangga, Surabaya, Indonesia

Recibido: 11 de septiembre 2022

Aceptado: 16 de octubre 2022

^bFaculty of Nursing, Universitas Airlangga, Surabaya, Indonesia

^cFaculty of Nursing, Universitas Indonesia, Depok, West Java, Indonesia

^dFaculty of Health Sciences, Universitas Galuh, Ciamis, Indonesia

^eDepartment of Nursing, Mataram Institute of Health Science, Mataram, Indonesia

*Corresponding Author: Tita Rohita

E-mail: rohitatita@gmail.com

by introducing family-friendly policies such as flexible working hours.

Keywords: *Job satisfaction, nursing management, shift schedule, work-life balance.*

RESUMEN

Introducción: *Entre los numerosos factores que pueden mejorar la satisfacción laboral se encuentran el trabajo desafiante, las recompensas que cumplan con las expectativas de los empleados, un ambiente de trabajo cómodo y el equilibrio entre la vida personal y el trabajo (work-life balance). Este estudio analizó la relación entre la disposición del horario de turnos y el equilibrio entre la vida laboral y personal entre las enfermeras y su impacto en la satisfacción laboral.*

Métodos: *Este estudio adoptó un enfoque transversal. La población estuvo compuesta por enfermeras que tienen el estatus de servidor público en uno de los hospitales regionales de Indonesia. Los participantes fueron reclutados utilizando un muestreo aleatorio estratificado proporcional con 100 encuestados. Las variables incluyeron la disposición del horario de turnos, el equilibrio entre la vida laboral y personal y la satisfacción laboral. Además, se recogieron cuestionarios de satisfacción laboral, horarios de turnos y equilibrio entre la vida laboral y personal. El análisis se probó utilizando la prueba de Chi-cuadrado.*

Resultados: *La mayoría de las participantes (60 %) de las enfermeras participantes expresaron satisfacción con su trabajo, y sus percepciones sobre la programación de turnos y el equilibrio entre la vida laboral y personal fueron en su mayoría positivas. Sin embargo, la proporción de enfermeras que percibía positivamente su conciliación laboral y personal (65 %) fue mayor que la proporción que percibió positivamente su horario (59 %). Una prueba de Chi-cuadrado reveló una correlación significativa entre la satisfacción laboral y tres factores: nivel de educación (valor de p 0,008; $OR = 1,40$), arreglos de horario de turnos (valor de p 0,006; $OR = 3,08$) y equilibrio trabajo-vida (p -valor 0,016; $OR = 2,82$).*

Conclusión: *El hallazgo mostró una correlación significativa entre el nivel de educación, el horario de turnos, el equilibrio entre el trabajo y la vida personal y la satisfacción laboral entre las enfermeras. Si no hay un patrón claro para los turnos de trabajo, las enfermeras en las unidades de pacientes hospitalizados experimentarán un mayor estrés laboral y una disminución de la satisfacción laboral. Las organizaciones pueden ayudar a los empleados a mejorar su equilibrio entre el trabajo y la vida mediante la introducción de políticas favorables a la familia, como horarios de trabajo flexibles.*

Palabras clave: *Satisfacción laboral, gestión de enfermería, horario de turnos, equilibrio vida-trabajo.*

INTRODUCTION

Nurse job satisfaction is one known indicator of hospital service quality (1,2). The nurse can be expected to be more productive if they feel satisfied with their jobs and will maintain themselves to keep working (3). Nurses are satisfied when their expectations match the Achievement of their workplace (4). When nurses are satisfied with their job, caring work culture and environment can develop, conducive to better nursing services and patient satisfaction. The research results on Intensive Care Unit (ICU) nurses in China found a relationship between the job satisfaction of ICU nurses and intentions to leave the workplace. The dissatisfaction resulted in them deciding to leave their jobs as ICU nurses (5).

The numerous factors that can improve job satisfaction include challenging work, rewards that meet employees' expectations, a comfortable working environment, and a balance between personal life and work (6). Reducing levels of conflict also increases job satisfaction. As the conflicts that emerge among nurses (mostly women) often originate in the clash between family and work, finding ways to maintain a good work-life balance will positively impact an individual's job satisfaction (7). For that reason, nurse managers need to create programs that address the work-life balance of nurse practitioners. Programs to improve work-life balance were initially implemented to help female employees who were married and had children. It is commonly assumed that men generally experience less work-life conflict than women, as many women combine the roles of employee and housewife, especially in eastern cultures (8).

As nursing services are required 24 hours a day, nurses work in shifts that a nurse manager schedules according to the needs and conditions of the unit or institution. As nursing treatment must maintain its quality and consistency 24 hours a day, appropriate scheduling of shifts is one component of the proper management of nursing resources. While the schedule may

not fully satisfy every staff member, it should at the very least be grounded in the principle of fairness and communicated to all team members. Therefore, nursing managers and administrators must carefully review the current rotating shift system, examine its impact on nurse fatigue, and ensure enough resting time when developing nurse schedules (9).

While previous research on the relationship between work-life balance and organizational commitment has been conducted, for instance, on accountants (10), the relationship between shift schedule arrangement and work-life balance and the ensuing impact on nurses' job satisfaction has rarely been explored especially in Indonesia. Previous studies of the effects of work-life balance and family-friendly programs on job satisfaction at Citarum Hospital, Semarang- Indonesia, found a positive relationship between the two variables among female nurses. Therefore, this study investigated the relationship between work-life balance and job satisfaction. The present research considers shift scheduling as a variable and focuses exclusively on female nurses.

METHODS

Study Design and Sample

This cross-sectional study used a Descriptive correlational research design using one-stage proportionate random sampling. The participants were 100 female nurses drawn proportionately from each West Java hospital in Indonesia. The inclusion criteria were female nurse associates who have been employed for at least one year and follow a shift schedule. The exclusion criteria included nurse managers and associates on leave or study assignments. The sample size calculation was based on Slovin's formula.

Dependent and Independent Variables

The dependent variable included in this study was job satisfaction, categorized as either less satisfied (score \leq 75 (median)) or satisfied (score $>$ 75). The independent variables included work-life balance classified as either negative (score \leq 46 (median)) or positive (score $>$ 46) and

shift scheduling categorized as either negative (score \leq 78 (median)) or positive (score $>$ 78).

Instruments

The questionnaires used to collect the data consisted of four questionnaires. Questionnaire 1 related to the characteristics of nurses includes age, gender, education level, years of service, and marital status. Questionnaire 2 about job satisfaction consisted of 29 questions. Questionnaire 3 about setting shift schedules consisted of 29 questions, and questionnaire 4 about work-life balance consisted of 16 questions. Responses were measured on a four-point Likert scale (1=unsatisfied, 2=less satisfied, 3=satisfied, and 4=very satisfied). Total scores were then categorized as either less satisfied (score \leq 75 (median)) or satisfied (score $>$ 75).

The questionnaire used to measure shift schedule consisted of 29 variables related to management, system, and impact of the schedule, which were measured using a four-point Likert scale (1=disagree, 2=slightly disagree, 3=agree, and 4=strongly agree). Total scores were categorized as either negative (score \leq 78 (median)) or positive (score $>$ 78). The work-life balance variable assessed nurses' perceptions of work-life balance and comprised 16 items, using a four-point Likert scale (disagree–strongly agree) and categorized as either negative (score \leq 46 (median)) or positive (score $>$ 46). The three questionnaires have been adapted into Bahasa Indonesia and tested for their validity and reliability; Cronbach's alpha values of 0.70 indicate all are reliable.

Data Analysis

The descriptive analysis was used to describe the frequency of job satisfaction levels. In addition, the Chi-square test was used to describe job satisfaction according to the participant's characteristics.

Ethical Clearance

The study is based on the ethical research principles of self-determination, privacy and

dignity, protection from discomfort and harm, and beneficence and was approved by the Ethics Committee of the Faculty of Nursing of Universitas Indonesia with No.95/UN2.F12.D/HKP.02.04/2017

RESULTS

The average age of participants was 35 years, ranging from 26 to 53 years. The average working period of participants was 10.20 years, ranging from 1.1 years to 18 years. Participants who graduated with a bachelor's degree were greater than those from vocational (60 %), and most (88 %) were married with children (Table 1).

Table 1

Distribution Frequency among female nurses (n = 100)

Characteristic/Variable	Frequency (n)	Percentage (%)
Age		
≤ 35 years old	48	48.00
>35 years old	52	52.00
Working duration		
< 5 years	18	18.00
≥ 5 years	82	82.00
Educational Background		
Vocational	40	40.00
Bachelor/NERS (ref.)	60	60.00
Marital Status		
Married with children	88	88.00
Married, no children	5	5.00
Widow with children	5	5.00
Widow, no children	2	2.00

*Refers to $p < 0.05$; ref.=reference

A majority (60 %) of the participating female nurses expressed satisfaction with their work, and their perceptions of shift scheduling and work-life balance were mostly positive. However, the proportion of nurses who perceived their work-life balance positively (65 %) was greater than the proportion who perceived their schedule positively (59 %) (Table 2).

Table 2

Frequency distribution of job satisfaction, shift scheduling, and work-life balance among female nurses (n = 100)

Variable	Frequency (n)	Percentage (%)
Job satisfaction		
Satisfied	60	60.00
Less satisfied	40	40.00
Shift Scheduling		
Positive	59	59.00
Negative	41	41.00
Work-Life Balance		
Positive	65	65.00
Negative	35	35.00

Table 3 shows factors associated with job satisfaction. Vocational educational background was a significant factor affecting high job satisfaction with an odds ratio of 1.4 (CI 0.63-3.13). Positive perception of shift scheduling was also found as a significant factor associated with high job satisfaction with an odds ratio of 3.08 (CI 1.58-7.00). Another significant factor associated with high job satisfaction was a positive perception of work-life balance with an odds ratio of 2.82 (CI 1.20-6.63).

DISCUSSION

The current study highlighted the high number of satisfied female nurses. The satisfied bachelor female nurse showed a greater percentage than the vocational nurse. Nurse education is in line with this expectation because of the motivation and support from nursing managers to continue to the next level of higher education. The bachelor nurse showed a forty percent higher likelihood of having satisfied job satisfaction. This finding is in line with the study on Job satisfaction among nurses in Iran, which indicated that most of the nurses had a bachelor's degree, followed by those having a diploma and a master's degree and most of the female nurses had a bachelor's degree (13).

Most of respondents here had a positive perception of shift scheduling, which would be

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Table 3

Differences in the level of satisfaction among female nurses based on personal characteristics, shift scheduling, and work-life balance (n = 100)

Characteristics/ Variable	Job Satisfaction				Total	X ²	OR (CI 95 %)	p-value
	Satisfied		Less Satisfied					
	n	%	n	%				
Age								
≤35 years old	33	33.00	20	20.00	53	-	-	0.12
>35 years old	25	25.00	22	22.00	47			
Working duration								
< 5 years	11	11.00	7	7.00	18	-	-	0.57
≥ 5 years	14	14.00	38	38.00	82			
Educational Background								
Vocational	20	20.00	20	20.00	40	2.32	1.40 (0.63-3.13)	0.01*
Bachelor/NERS	35	35.00	25	25.00	60		-	0.61
Marital Status								
Married with children	47	47.00	41	41.00	88	-		
Married, no children	3	3.00	2	2.00	5			
Widow with children	3	3.00	2	2.00	5			
Widow, no children	2	2.00	0	0.00	2			
Shift Scheduling								
Positive	37	37.00	18	18.00	55	7.44	3.08 (1.58-7.00)	0.01*
Negative	18	18.00	27	27.00	45			
Work-Life Balance								
Positive	42	42.00	24	24.00	24	7.85	2.82 (1.20-6.63)	0.02*
Negative	23		23.00	21	21.00	21		

expected to impact their treatment of patients. The head of the room provides policies in preparing the official schedule because he already knows the staff’s characteristics and the room’s condition. Scheduling should be based on balancing work unit and staff needs—for example, considering which area is busier and which staff needs a break. The method adopted should be appropriate to the quality and quantity of staff in the given unit. All staff members should be involved in the morning to evening shift schedule and participate in full rotations. In addition, longer working hours (i.e., more than 12 hours per shift) have been found to make burnout more likely, in terms of emotional exhaustion, depersonalization, and low personal accomplishment (14). In Europe, a recent study reported that nurses working longer shifts were more likely to experience burnout and job dissatisfaction and intended to leave the job (15). It was observed that non-rotational workers enjoyed more frequent and longer naps and had fewer disturbances in their sleep patterns than rotational workers (16).

Most participants reported positive perceptions of work-life balance—in other words, most female nurses in RS X experience a balance between family and work. This happens because individuals can allocate their time and energy to work and life outside work. This balance is achieved when the individual feels that she can meet the demands of her job without disruption to her needs outside of work and vice versa. However, this perceived equilibrium also affects attitudes, behaviours, and welfare, which affect organizational effectiveness. When employees perceive a lack of equilibrium in their lives because too much of their time is occupied by work, they are driven to consider other jobs that offer them more balance between work and home (17).

The logistic regression analysis showed that education level, shift schedule, and work-life balance significantly affect higher job satisfaction among female nurses. Nurses who are educated bachelors seem more responsive to a problem

and service to patients and career opportunities are getting better. The result observation is that most participants feel satisfied when they get a morning or afternoon shift because nurses still concentrate well in the morning shift. As a result, work can be done well and reduce negligence. In addition, nurses can balance aspects of responsibility towards work and family so that the workload is not felt too heavy, and they are more serious in their work.

An earlier study at an inpatient unit in a hospital in West Java province, Indonesia, revealed a correlation between education and nurse satisfaction ($p = 0.001$) (18), aligning with other evidence that educational background affects the individual's level of job satisfaction (19). These results support the view that a higher education level prompts higher expectations of job satisfaction (20). The data suggested the need for human resource development among the nurses by encouraging the nurses to obtain nurse academic qualifications. In addition, employment policies such as the provision of school tuition should be considered. Nurses are likely to hold their workplace in higher regard if awarded an education grant from the hospital, motivating them to proceed to the NERS level.

A study of the relationship between shift scheduling and employee stress at a private company revealed a strong relationship between shift work and stress (21). In addition, work stress has been found to differ significantly between people on afternoon shifts and those on night shifts and between night and morning shifts, but no difference was found between morning and afternoon shifts (22). Similarly, a study in Central Kerala, India, found that ninety-six percent of nurses experienced stress at work (23,24). Each reacted differently when asked about their shift schedule, with some expressing satisfaction and vice versa. Individuals who work well with minimal error and good teamwork and cooperation also feel more satisfied. Additionally, both job satisfaction and performance have been found to correlate positively with job rotation perception and intention and therefore affect work performance (25).

The finding showed a significant correlation between education level, shift schedule, work-life balance, and job satisfaction among female

nurses. This figure suggested that nurses with a higher level of education apply their extensive knowledge and skills to enhance their work, which further increases job satisfaction. Shift scheduling is significantly related to job satisfaction. If there is no clear pattern to work shifts, nurses in inpatient units will experience greater working stress and declining job satisfaction. Work-life balance is significantly related to job satisfaction because nurses habitually show loyalty to the hospital while being committed to their families.

The next need for human resource development among nurses by encouraging nurses to obtain higher academic qualifications. Employment policies such as tuition fees should be considered. Nurses are likely to value their work more if given an educational grant from the hospital, which will motivate them to continue to a higher level. Further research can also examine the effect of other variables that affect the satisfaction of female nurses, such as the reward system and organization.

CONCLUSION

The finding showed a significant correlation between education level, shift schedule, work-life balance, and job satisfaction among female nurses. If there is no clear pattern to work shifts, nurses in inpatient units will experience greater working stress and declining job satisfaction. Organizations can help employees to improve their work-life balance by introducing family-friendly policies such as flexible working hours.

ACKNOWLEDGMENT

Special thanks to Universitas Indonesia, Depok Indonesia, especially to The Late Efy Afifah and Universitas Airlangga, Surabaya, Indonesia for Supporting this research

DISCLAIMER

This study abstract has been presented at International Nursing Conference (INC) 2022. The data in the manuscript is part of Tita Rohita Thesis.

CONFLICT OF INTERESTS

None to declare.

FUNDING DISCLOSURE

This study was sponsored and funded by an indexed international publication grant for Universitas Indonesia Student final project (PITTA grant).

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