International Journal of Nursing and Health Services (IJNHS)
http://ijnhs.net/index.php/ijnhs/home
Volume 4 Issue 5, October 20th, 2021, pp 485-493
e-ISSN: 2654-6310

The Perception of Quality Nursing Work Environment among Hospital Nurses

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Artikel info

***Article history*:**
Received: August 19th, 2021
Revised: August 31th, 2021
Accepted: September 20th, 2021

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DOI:
http://doi.org.10.35654/ijnhs.v4i5.500

Abstract. Background: Nurses, the more significant health care provider, need an excellent work environment that adequately expresses their skills and knowledge on providing optimum care quality outcomes to the patients. **Objective:** This study aimed to determine the current state of the nurses' perceived work environment quality and examine differences in perceived work environment quality among nurses with different characteristics. **Method:** A descriptive cross-sectional correlation design and a probability sampling method recruit 334 hospital nurses. The self-report questionnaire scale of the Quality Nursing Work Environment (QNWE) was used to collect data. Descriptive statistics, variant analysis (ANOVA), independent-sample *t*-test, and Pearson correlation were utilized to analyze comprehensive data. **Result:** The participants reported a perceived moderate level of quality of the work environment. The perceived QNWE levels were found to differ across participants' ages statistically (p<0.05), work experience (p<0.01), and department (p<0.05). Most participants rated their working environment as high quality on the domain "Professional specialization and cooperation" (M=2.81; SD=0.53). Contrarily, the responses to domain 2, "Staff quality," were ranked lower (M= 3.32; SD=0.63). Nurses who worked in the special care units and had three years or more experience perceived lower work environment quality than others did. **Recommendation:** The finding of this study can be utilized as a guideline to the policymakers, hospital administrators, nurse supervisors, and educators to determine areas to improve nurses' work environment; which could translate into a significant improvement in patient outcome

Keyword: nursing work environment, practice environment, nursing practice quality

INTRODUCTION

The world's health workforce crisis has been identified to the challenge of nurses' shortages, including Indonesia. The International Council of Nurses released a global shortage of nurses reached 5.9 million in 2019 (1). Whereas the shortfall of nursing staff in Indonesia reached 34.15% by 2018, and it is predicted to elevate by 2023 (2). Numerous factors have amplified the nursing shortage, such as a worldwide aging population, an aging workforce, and COVID 19 pandemic (3). In Indonesia, only 10% of all annual graduating nursing students are absorbed by the hospital field. In comparison, the other 90% prefer to work as bank employees, cell-phone customer service providers, airplane staff, and entrepreneurs (4). Other factors associated with nurses' intention to leave the job include low wages, a high working load, burnout, an uncomfortable work environment, and less appreciation (5,6).

With an international shortage of nursing professionals ongoing, increased attention is now being directed toward understanding the nature of the nursing work environment (7). The nursing work environment is determined as the "organizational characteristics of a work setting that facilitate or constrain professional nursing practice" (8). The nurse work environment has many aspects: nurse participation in hospital affairs, nursing foundations for quality of care, nurse manager ability, leadership and support of nurses, staffing and resource adequacy, and collegial nurse-physician relations (9,10).

The excellence of the nursing work environment is essential for improving healthcare system progression, health service delivery, and health worker performance (11). Nurses, the more significant health care provider, need a work environment that adequately expresses their skills and knowledge on providing optimum care quality outcomes to the patients (12). Previous studies in Jordan and Saudi Arabia found a positive relationship between nursing work environment and nurses' job satisfaction, a lower burnout level, and their intention to stay (13,14). While a study conducted in Pakistan also described a significant correlation between nurses' practical environment and patients' satisfaction (15).

Considering the importance of the work environment among nurses, continuously assessing the quality of nurses' work environment is required. Hence, a sensitive and fit measurement is needed to determine the nurses' work environment. The Magnetism, a guideline model developed by the American Nurses Credentialing Centre (ANCC), is a popular practical framework suitable for creating nurses' supportive work environment (16). The Magnetism comprises 14 characteristics of nursing work environment include: quality of nursing leadership, organizational structure, management style, personnel policies and programs, professional models of care, professional models of care, quality improvement, consultation and resources, autonomy, community, and the health care organization, nurses as teachers, the image of nursing, interdisciplinary relationships, and professional development (16–18). However, realizing the nursing work environment diversity across the world, those characteristics may not be entirely suitable to be applied. Thus, Lin et al. (18) developed a set of comprehensive indicators based on the Magnetism nursing work environment's characteristics, adjusted and modified according to the nursing work environment in Asian countries.

To date, little study is known about the state of the nursing work environment in Indonesia. Understanding the current situation of nurses' work environment is crucial to maintain and improve their working performance in providing nursing care to the patients and to minimize nursing shortage issues.

OBJECTIVE

This study was purposed to assess the current state of the quality nursing work environment perceived by hospital nurses and examine the difference in perceived quality of work environments among nurses with different characteristics.

METHOD

Study design

A quantitative study with a descriptive cross-sectional correlation design was conducted to determine the quality of the nursing work environment perceived by nurses.

Participants

A purposive sampling method was utilized to recruit 334 hospital nurses with a response rate of 98.5%. The inclusion criteria of the participants included: nurses' staff who held an active practice license, working in the bedside patient care ward, and employed as a nurse for not less than a year. Nurses working at the hospital executive department and those who have education level below diploma nursing degree were excluded in this study.

Instrument

A self-reported questionnaire was used to collect the data. The questionnaire comprises two sections. The first section encompassed demographic characteristics such as participants' age, gender, marital status, staff-working position, current nursing department, education degree, and experiences as a nurse. The second section is the Indonesian version of the Quality Nursing Work Environment (QNWE-I)" scale. It is a set of comprehensive indicators developed by Lin et al. (18) based on the Magnetism nursing work environment characteristics and International Council of Nurses' consideration criteria, which were culturally adapted and set in the Indonesian healthcare system before the data collection. Both Taiwan and Indonesian versions referenced data from a large sample of nurses for its scale development. The QNWE-I contained eight domains (safe practice environment; staff quality; workload, salary, and welfare; professional specialization and cooperation; work simplification; information technology; professional cultivation and development; support and caring) and 62 items to determine nurses' perception about their current work environment situation. The response format is a 5-point Likert scale from 1 (totally unqualified) to 5 (fully qualified). The total scores of all items represent the scale score, with a possible range of 62 to 310. A higher score indicates a greater perceived quality of the work environment.

The QNWE-I was a valid and reliable scale for measuring the quality of work environment among hospital nurses with excellent validity and reliability scores (Content Validity of CVI all items=0.86~1.00; All items' factor loading of CFA score=0.50~0.90; Interrater reliability value of ICC score=0.82; All item of test-retest analysis score=0.90; and internal consistency of Cronbach's alpha coefficient score for all items=0.79~0.96).

Data collection

The questionnaire was previously administered to 339 nurses with the inclusion criteria in two private hospitals in Yogyakarta, Indonesia, from November 2019 to January 2020. The completed questionnaires were collected within three days after the questionnaire was given to the respondent. There were 5 incomplete filled questionnaires founded. The 334 completed questionnaires with 98.5% response rate were then coded into a computer database. All participants in this study were given a set page of written informed consent, research objectives, the procedure of participation, and the researchers' contact lists before participating in the study. The questionnaires were anonymous, and completion of the questionnaire was voluntary.

Data analysis

Descriptive statistical analysis, including mean, standard deviation, percentage, and frequency, were used to describe nurses' demographic characteristics and perceived levels of the hospital they work at as QNWE-I. Analysis of Variance (ANOVA) and Independent Sample T-test were utilized to examine the relationship between nurses' demographic characteristics and reported QNWE-I as the total of eight domains. $P \leq 0.05$ was considered statistically significant. Pearson correlation was also employed to analyze the comparison procedures. Data were calculated and analyzed using IBM SPSS software version 20.0, with the probability of type I error of 0.05 and 0.95 expected of effect size.

Ethical Consideration

The Ethics Committee Board approved the Institutional Review Board (IRB) letter of the target hospitals. Returning the questionnaires was considered informed consent, and all data were treated confidentially.

RESULTS

There were no missing data by participants in responses to the questionnaires. It indicated that all of the respondents had taken the questionnaires seriously. The study accepted 334 questionnaires as valid for a

response rate of 100%. The majority of participants were female (79.34%), age between 31 and 40-year-old (62.57%), married (64.07%), floor nurses (94.01%), working in general wards (74.25%), having less than three years of nursing experience (58.38%) and earned a Bachelor of Science in Nursing degree 171 (51.19%) (Table 1).

Table 1. Sociodemographic characteristics of participants and their difference in perceived quality of nursing work environment (N=334)

Variable	N	%	Mean	SD	t/F	P
Gender					-1.51	0.13
Male	69	20.65	3.52	0.60		
Female	265	79.34	3.63	0.53		
Age					3.39	0.03*
① 20-30 years old	82	24.55	3.73	0.58	① > ③ #	
② 31-40 years old	209	62.57	3.59	0.52		
③ >40 years old	43	12.87	3.48	0.56		
Marital status					-1.44	0.14
Married	214	64.07	3.58	0.53		
Unmarried	120	35.92	3.67	0.55		
Education levels					0.06	0.94
Diploma	163	48.80	3.61	0.53		
Bachelor degree	171	51.19	3.61	0.56		
Position					0.98	0.32
Floor nurse	314	94.01	3.62	0.55		
Head nurses or supervisor	20	5.98	3.49	0.50		
Units					6.62	0.002**
① General care units	248	74.25	3.65	0.52	① > ②; ③ > ②#	
② Special care units	19	5.68	5.68	0.55		
③ Critical care units	67	20.05	20.05	0.59		
Nursing experience					2.25	0.025*
≤ 3 years	195	58.38	3.67	0.54		
> 3 years	139	41.61	3.53	0.54		

* p<0.05, ** p<0.01, SD, standard deviation; t, values of independent t-test; F, values of one-way ANOVA; # Tukey HSD posthoc test

The participants reported a mean score of 3.61 (SD =0.63) on QNWE-I, indicating a moderate perceived level of QNWE-I. On average, participants rated the "professional specialization and cooperation' aspect of the work environment as the highest quality and the 'workload, salary, and welfare' element as the lowest quality (Table 2).

Table 2. All domains of QNWE-I Perceived by Hospital Nurses (N=334)

Variable	**Mean±SD**	**Cronbach's α**
Domain 4: Professional Specialization and Cooperation	3.81±0.53	0.93
Domain 6: Information Technology	3.78±0.67	0.88
Domain 1: Safe Practice Environment	3.62±0.60	0.96
Domain 8: Support and Caring	3.61±0.61	0.94
Domain 5: Work Simplification	3.59±0.67	0.95
Domain 7: Professional Cultivation Development	3.58±0.64	0.93
Domain 2: Staff Quality	3.58±0.62	0.79
Domain 3: Workload, Salary and Welfare	3.32±0.72	0.92
QNWE-I Total Score	3.61±0.63	0.96

This study employed Person correlation analysis to determine the correlation between the QNWE-I domains (Table 3). The result revealed that all domains and QNWE-I total score were all showed a significant correlation (p<0.01)

Table 3. The Correlation between the Eight QNWE-I Domains (N=334)

Domain	1	2	3	4	5	6	7	8
1	1							
2	.561**	1						
3	.784**	.616**	1					
4	.728**	.546**	.716**	1				
5	.783**	5.84**	.735**	.737**	1			
6	.777**	.514**	.641**	.710**	.693**	1		
7	.772**	.552**	.747**	.771**	.847**	.715**	1	
8	.735**	.545**	.747**	.785**	.776**	.695**	.823**	1
Total Score	.893**	.716**	.875**	.865**	.897**	.837**	.906**	.886**

** Correlation is significant at the 0.01 level (2-tailed)

The bivariate analysis showed that the perceived quality of work environment was statistically different among nurses in other age groups (F=3.39, p=0.03), working units (F=6.62, p=0.002), and working experience (t=2.25, p=0.025) (Table 1). Nurses aged between 20 and 30 years old perceived higher quality of work environment (mean=3.73, SD=0.58) than those aged between 31 and 40 years old (mean=3.59, SD=0.52) and those aged greater than 40 years old did (mean=3.48, SD=0.56)

Nurses who worked in the general care units (mean=3.65, SD=0.52) or those who performed in the critical care units (mean=3.58, SD=0.59) perceived higher quality of work environment than those working in the special care units did (mean=3.19, SD=0.55). Nurse with three years or less of nursing experience perceived higher quality of work environment (mean=3.67, SD=0.54) than those with more than three years of nursing experience (mean=3.53, SD=0.54) (Table 1).

Furthermore, comparing with nurses with three years or less of nursing experience, nurses with more than three years nursing experience reported lower scores in 'safe practice environment' (3.50 vs. 3.70), 'workload, salary and welfare' (3.20 vs 3.41), 'work simplification' (3.50 vs 3.65), and 'professionalism and personal development (3.45 vs. 3.66) aspects of the work environment (Table 4).

Table 4. Comparison between all domains of QNWE-I and Participants" Working Experience (N=334)

Variables	≤ 3-year experience		>3-year experience		t	p
	Mean	SD	Mean	SD		
Quality nursing work environment	29.35	4.33	28.27	4.31	2.24	0.025*
Safe practice environment	3.70	0.59	3.50	0.60	3.15	0.002**
Staff quality	3.60	0.67	3.55	0.55	0.85	0.398
Workload, salary, and welfare	3.41	0.74	3.20	0.65	2.62	0.009**
Professional specialization and cooperation	3.84	0.52	3.76	0.54	1.49	0.139
Work simplification	3.65	0.64	3.50	0.69	2.06	0.040*
Information technology	3.79	0.67	3.75	0.67	0.65	0.514
Professional cultivation and development	3.66	0.61	3.45	0.66	2.92	0.004**
Support and caring	3.65	0.58	3.54	0.62	1.71	0.080

DISCUSSION

The findings of this study addressed a significant difference between QNWE-I domains about the participants' characteristics such as age, working units, and nurses' experience. It suggests that the QNWE-I may be used to detect differences in quality operating environments among different nurses. Regarding that result, the total mean of QNWE-I was highly perceived by young nurses (age ranged from 20 to 30 years old), nurses working in the general care units (in-patient, outpatient, and administration wards), and nurses with less than 3 years working experience. These results are consistent with prior studies conducted by Almuhsen et al. (19) and Al Moosa et al. (17) in Saudi Arabia showed that nurses' age, working experience, and department affected nurses' perceptions about their quality of work environment. For instance, the total mean of QNWE-I score for nurses working in general care units had a higher perceived QNWE than those working in critical units (emergency room & intensive care units) and special units (operating room & hemodialysis department). This indicates that necessary and special units are associated with high workloads and job burdens (20). In line with a study conducted by Mrayyan (21), nurses working in critical units deal more with higher work stressors. Our study results suggest that exceptional unit nurses may be appropriate targets for work-environment improvement initiatives. Improvements can then be evaluated by administering the QNWE-I, with increased scores indicating a better quality working environment attributable to work-environment improvements.

Furthermore, the total overall score for the nursing work environment's quality level in this study averaged 3.61, slightly lower than the previous average of 3.74 (18). However, this study found overall, nurses working in the general hospital reported better working experiences concerning the domain of 'professional specialization and cooperation' of a QNWE-I and reported the highest perceptions of their quality work environment. This finding is consistent with a previous study investigated by Melkamu et al. (22), which found that nurses identified work collaboration and joint cooperative work with multi-professionals as essential elements in the hospital work environment. Typically, a general hospital in Indonesia is destined as a referral hospital, and it has a working condition that more elaborates and engages multidisciplinary teamwork. It is supported by a study conducted in a referral hospital in Saudi Arabia, which stated that nurses feel more involved working with an interdisciplinary team and other mutual collaboration across the profession in their job (23). Contrarily, nurses in this study rated low perceived to the domain of 'workload, salary, and welfare.' It is in line with a previous study conducted by Moradi et al. (24), in which the authors identified that nurses perceived a high working load with an imbalance salary. Another possible explanation is that most nurses working in referral hospitals tend to have more stressful, emotionally burdensome jobs and unfair wages than non-general referral hospitals (25). These findings underscore the importance of taking measures to understand and caring for the perceptions of working conditions.

Another finding confirmed that nurses with three years or less nursing experience in this study perceived higher quality of work environment than those with more than three years of nursing experience. These findings are consistent with the previous research reported by Akter et al. (26), which stated that nurses with four years more experience tend to score their perceived quality nursing practice lower than less experienced nurses. The possible explanation is that nurses with less experience tend to perform the same role and nursing activities as the new graduates with complete compassion and dedication.

We further looked into the differences are in which aspects of work environments. Nurses with more than three years of nursing experience perceived lower quality than nurses with three years or less nursing experience in 'safe practice environment,' 'workload, salary and welfare,' 'work simplification,' and 'professionalism and personal development aspects of the work environment. The previous studies support mainly weddings that nurses with low working experience were mostly satisfied and had fewer complaints about the salary they received (27). It had more challenges and passionate feelings when assessing their

competencies for gaining advanced working experience (28). It had a prosperous sense of high efficacy of their nursing competencies and knowledge, supporting their fundamental motivation well (28,29).

Moreover, a previous study (30) reported that young nurses were more motivated to control and modify their safety work practices than older nurses. Furthermore, prior research also supported our findings, where junior nurses feel they have more opportunities to be involved in professional and career development than senior nurses (28). Likewise, (31)discovered that older nurses were less empowered for career development than were younger ones. Presumably, newly graduated nurses' short experience with nursing practice, different learning environments, and different clinical competence expectations impact their assessments of their empowerment (32,33).

CONCLUSION

On average, nurses perceived a moderate level quality of the environments while working in hospitals. It is suggested that strategies for enhancing nursing work environments are needed. Particular attention should be paid to decrease nurses' workload and increase their salary and welfare as these are areas reported by nurses as the areas with the lowest quality in their work environment. Additionally, older nurses who worked in the special care units and had more than three years of work experience are the high-risk group for perceiving the lower quality of their work environment. To retain these groups of nurses, strategies for improving the work environment should be developed in considering their perceptions and inputs. More specifically, infrastructure and policy should be designed to enhance a safe practice environment, decrease workload, increase salary and welfare, improve work simplification, and enrich professionalism and personal development.

LIMITATION

There are limitations to our study. First, the study's cross-sectional design cannot know the changes in nurses' perceived work environment quality over time. The relationships found among study variables are associations as opposed to causality. Second, a convenience sample restricts the generalizability of the findings. The nurses are recruited from two private hospitals, which might differ from those working in other settings.

Acknowledgment

The authors would like to PKU Muhammadiyah Hospitals and all the nursing professionals in this study.

Funding support

The study received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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