Relationship Between Nurse Factors And Nursing Service Quality For Orthopedic Patients In Hospitals

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Relationship Between Nurse Factors And Nursing Service Quality For Orthopedic Patients In Hospitals

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Abstract

Purpose: The purpose of this study was to investigate the relationship between nurse factors and the quality of nursing services provided to orthopedic patients in hospitals in Indonesia.

This cross-sectional study was conducted from July to September 2022. Questionnaires were administered to 236 nurses and 236 patients in 10 orthopedic hospitals in West Java Province, Indonesia.

Using univariate analysis and chi-square analysis, it was found that competence and skills were significantly related to nursing service quality. Meanwhile, age, gender, educational level, length of employment, and knowledge were not significantly related.

Even though knowledge had no bearing on service quality in this research, mature knowledge is needed to meet competency and

skill requirements for improving service quality at levels ranging from mild to complex.

Keywords: nurse factors, nursing services, quality, orthopedic patients.

Introduction

With increases in accident cases, orthopedic issues are now among the top three most common hospital cases. This increase in the number of patients with orthopedic disorders has produced a corresponding increase in the amount of hospital nursing care required for these patients. Irianto et al. reported that about 80% of such cases are the result of accidental trauma while the remaining 20% are nontraumatic cases (Irianto, Chilmi, & Adyaksa, 2018). Fractures and low back pain are the top two orthopedic conditions worldwide. The incidence of fractures increases with age for both men and women, but the adjusted rate is 49% higher in women. Between 1989 and 1991 and 2009 and 2011, the comparable fracture event rate increased by 11% (from 3,627 to 4,017 per 100,000 person–years; P = 0.008) (Amin, Achenbach, Atkinson, Khosla, & Melton, 2014). According to Riskesdas, in Indonesia, the prevalence of injuries that can result in fractures increased significantly from 8.2% in 2013 to 9.2% in 2018 (Kemenkes RI, 2018). The proportion of frequently injured limbs was 67.9% for the lower extremities and 32.1% for the upper extremities (Kemenkes RI, 2018).

The situation described above necessitates skilled orthopedic nursing care. Orthopedic nursing care is a specialized nursing intervention for patients with extremity fractures or orthopedic disorders involving bones, muscles, and nerves, owing to both disease and nondisease factors (Brent et al., 2018, Riswanda N, Dwi A, Abdul A, 2017, Kathryn, 1997, Lee, Hsu, & Chang, 2007).

Orthopedic nurses strive to optimize and restore normal orthopedic function. If recovery is not possible, orthopedic nurses encourage patients to adapt to their conditions or offer them palliative care. Orthopedic nurses' specific responsibilities include preventing, minimizing, or correcting orthopedic deformities; preventing fractures or joint dislocations; restoring the function of diseased bones and joints; and preventing infection and injury (Hsu N et al , 2002, Lee et al., 2007, (Pueyo-Garrigues et al., 2022).

In this study, our aim was to identify nurse factors related to the quality of nursing services for orthopedic patients. These factors play an important role in the provision of quality nursing services. No previous study in Indonesia has identified the relationship between

nurse factors (e.g., age, gender, level of education, length of employment, competency, knowledge, skills) and the quality of orthopedic nursing services.

Material and Methods. This study adopted a cross-sectional design. The study was conducted from July to September 2022 in 10 orthopedic hospitals in West Java Province, Indonesia.

The researchers recruited 236 nurses and 236 patients using consecutive sampling. The inclusion criteria for the nurse sample included working in a hospital as an implementing nurse in an orthopedic unit for at least two years, a minimum education of a D3 in Nursing, and a willingness to be a respondent. Meanwhile, the inclusion criteria for the patient sample included having orthopedic disorders, being able to read and write, and being willing to participate.

This study used a nurse factor questionnaire that includes six subvariables: age, gender, level of education, competency, knowledge, and skills. The competency questionnaire contains eight items that assess understanding (three items) and attitudes (five items). The knowledge questionnaire contains 10 items that investigate the dimensions of orthopedic risk factors (five items), orthopedic disorders (three items), and orthopedic disorder management (two items). The skills questionnaire is made up of seven items that consider the dimensions of needs assessment (four items), needs analysis (one item), and intervention priorities and planning (two items). The outcomes of competency, knowledge, and skill assessments are classified as good or poor.

The researchers developed the Nursing Service Quality Questionnaire. This questionnaire covers the six dimensions of acceptance (10 items), attention (eight items), responsibility (five items), communication (six items), patient satisfaction (three items), and performance (six items). Likert scales are used for all items, with the following response options: strongly disagree, disagree, agree, and strongly agree. The measurement results are divided into two categories: good and less.

The authors pretested the questionnaires for competence, knowledge, skills, and nursing service quality for validity and reliability using 30 respondents with characteristics similar to the research sample. The test results showed that $r > 0.6$ and Cronbach's alpha > 0.6, indicating that the questionnaire was valid and reliable.

Prior to data collection, prospective respondents were informed about the study purpose and asked if they were willing to participate. Respondents' data were kept confidential by not including respondents' names in the research documents; respondents'

information was only used for research purposes. The Research Ethics Committee of the Faculty of Nursing, Airlangga University, granted ethical approval for this study on June 3, 2022 (approval no. 2540-KEPK).

Results.

As shown in Table 1, the majority of nurse respondents (107; 45.3%) were in their late adult years. Most of the nurse respondents (145; 61.4%) were female, and the majority (132; 55.9%) had a diploma-level education. Moreover, the majority of nurse respondents (143; 60.6%) demonstrated high levels of competence. Meanwhile, 157 (66.5%) had insufficient knowledge. Finally, 180 (76.3%) of the nurse respondents had good skills.

Table 2 shows that, among the 152 (64.4%) nurses who provided good-quality services, 65 (42.8%) were late adult nurses, 100 (65.8%) were female, 65 (43.8%) had worked more than 10 years, 83 (54.6%) had a nursing diploma, 105 (69.1%) had good competence, 52 (34.2%) had good knowledge, and 126 (82.9%) had good skills.

The findings demonstrate that competence is related to the quality of nursing services provided to orthopedic patients (P = 0.001; 0.05). This study also found that nurses with high competence were 2.7 times more likely to provide high-quality nursing services than nurses with low competence (OR: 2.7; CI: 1.6–4.7). Moreover, the findings indicated that skills had a significant relationship with the quality of nursing services provided to orthopedic patients (P = 0.001, 0.05). In addition, nurses with good skills were 2.6 times more likely than those with poor skills to provide high-quality nursing services (OR: 2.6; CI: 1.5–4.9). Age, gender, education level, length of employment, and knowledge were not significantly related to nursing service quality (P > 0.05; 0.05).

Discussion

This study aimed to determine the relationship between nurse factors (e.g., age, gender, education level, length of employment, competency, knowledge, skills) and the quality of orthopedic nursing services in Indonesia. There were significant differences between nurses' competence and skills and the quality of services provided. By developing an instrument for evaluating competencies consisting of knowledge, orthopedic disorders/handling of orthopedic disorders, needs assessment, needs analysis, priority, and intervention planning, this study was able to determine the quality of services provided by nurses. This was based on the assessment of quality output indicators, including acceptance, attention, responsibility, communication, patient satisfaction, and performance. Existing research uses many

tools to assess nursing quality, such as the Selected Attribute Variable Evaluation tool, Slater's Nursing Competency Rating Scale, the Quality Patient Care Scale, and the Rush Medicus Tool–Quality Monitoring of Nursing Care (RMT-MQNC). The RMT-MQNC, which is based on the nursing process and patient needs, was used in the other study (Kathryn, 1997). The model for the present study was developed by adapting Indonesia's existing nursing service system with regard to data collection methods for quality monitoring tools, including the following: information from patient medical records, patient observation, interviews with patients, interviews with nurses, nurse observation, observation of the patient's environment, observer conclusion, and interviews with primary caregivers (Kathryn, 1997). In this study, education level and experience had no significant effect on service quality. This contradicts the findings of previous studies that found a close relationship between service quality and education level and length of work (Hsu N etl al., 2002). This could be attributable to differences in instrument models, assessments, and study methods, such as measuring achievement scores for the nursing care goals being evaluated (Hsu N et al., 2002). In a previous study of nursing care quality, Hsu et al. proposed that quality achievement scores above 90% should be encouraged, quality scores of less than 60% are unacceptable, and scores of less than 30% should be resolved immediately (Lee et al., 2007).

In this study, there was no significant difference in the quality of nursing services based on knowledge. Levels of knowledge, skills, and competencies should have an effect on service quality (Pueyo-Garrigues et al., 2022). In the present study, however, the majority of nurse participants held a nursing diploma as their educational background. This could be why the skill parameter was significant in this study while the level of knowledge was not. Specifically, educational level has a considerable impact on the formation of knowledge, which produces better effects in the workplace((Sughra Majeed, 2017). Therefore, additional research should be conducted to correlate the level of education with the quality of services provided. When assessing the quality of nursing care, it is critical to evaluate the aspects of knowledge, skills, and attitude. Nurse competence is related to both skills and knowledge, making them important parts of education and training development. Nurses face situations with patients and families that involve varying levels of problems, ranging from mild to complex. Thus, nurses need to be able to analyze and evaluate the situations they encounter to ensure service quality (Pueyo-Garrigues et al., 2022).

The scope of this study was limited by its nonrandom sampling technique. Purposive sampling, including the statistical methods it uses, limits the representativeness of the sample to some extent, thus

reducing the generalizability of the findings. It is also necessary to reconsider the instrument by considering and/or comparing the educational level of each respondent. Furthermore, additional research is needed to examine the factors that influence service quality, which could be used as a new model for the implementation of nursing care for patients and families.

In nursing management, it is crucial to evaluate nurses' knowledge, skills, and competencies on a regular basis in order to ensure the quality of nursing services. Consider nursing competence, which is the integration of knowledge, professional judgment, skills, values, and attitude, when developing a framework for evaluating the quality of a service.

Conclusion. This study found that nurses' skills and competencies significantly affected the quality of service provided in orthopedic patient care. Even though knowledge had no bearing on service quality in this research, mature knowledge is needed to meet competency and skill requirements for improving service quality at levels ranging from mild to complex.

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Competing interests

The authors declare that there is no conflict of interest

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Table 1: Frequency Distribution of Nurse Factors and Nursing Service Quality in Hospitals (N = 236).

Variable	Category	Frequency	Percentage (%)
Age (years)	17 – 25	19	8.05
	26 – 35	93	39.4
	36 – 45	107	45.3
	46 - 55	17	7.2
Gender	Female	145	61.4
	Male	91	38.6
Education level	Magister	4	1.7
	Ners	100	42.4
	Diploma	132	55.9
Clinical experience (years)	>10	97	41.1
	5–10	73	30.9
	<5	66	28.0
Competency	Good	143	60.6
	Less	93	39.4
Knowledge	Good	79	33.5
	Less	157	66.5
Skill	Good	180	76.3
	Less	56	23.7
Quality nursing services	Good	152	64.4
	Less	84	35.6

Table 2. Relationship Between Nurse Factors and Quality of Nursing Services in Hospitals (N = 236)

Variable	Quality nursing services		Total	OR (95% CI)	P-value
	Good	Less			
Age					
17 – 25	12 (7.9%)	7 (8.3%)	19 (8.1%)	-	0.55
26 – 35	65 (42.8%)	28 (33.3%)	93 (39.4%)		
36 – 45	65 (42.8%)	42 (50%)	107 (45.3%)		
46 - 55	10 (6.6%)	7 (8.3%)	17 (7.2%)		
Total	152 (64.4%)	84 (35.5%)	236 (100%)		
Gender					
Female	100 (65.8%)	45 (53.6%)	145 (61.4%)	1.6 (0.9–2.8)	0.08
Male	52 (34.2%)	39 (46.4%)	91 (38.6%)		
Total	152 (64.4%)	84 (35.6%)	236 (100%)		
Clinical experience (years)	66 (43.4%)	31 (36.9%)	97 (41.1%)	-	0.21
>10	41 (27%)	32 (38.1%)	73 (30.9%)		
5–10	45 (29.6%)	21 (25%)	66 (28%)		
<5	152 (64.4%)	84 (35.6%)	236 (100%)		
Total					
Education level					
Magister	2 (1.3%)	2 (2.4%)	4 (1.7%)	-	0.67
Ners	67 (44.1%)	33 (39.3%)	100 (42.4%)		
Diploma	83 (54.6%)	49 (58.3%)	132 (55.9%)		
Total	152 (64.4%)	84 (35.6%)	236 (100%)		
Competency					
Good	105 (69.1%)	38 (45.2%)	143 (60.6%)	2.7 (1.6–4.7)	**0.001***
Less	47 (30.9%)	46 (54.8%)	93 (39.4%)		
Total	152 (64.4%)	84 (35.6%)	236 (100%)		
Knowledge					
Good	52 (34.2%)	27 (32.1%)	79 (33.5%)	1.1 (0.6–1.9)	0.86
Less	100 (65.8%)	57 (67.9%)	157 (65.5%)		
Total	152 (64.4%)	84 (35.6%)	236 (100%)		
Skill					
Good	126 (82.9%)	54 (64.3%)	180 (76.3%)	2.6 (1.5–4.9)	**0.001***
Less	26 (17.1%)	30 (35.7%)	56 (23.7%)		
Total	152 (64.4%)	84 (35.6%)	236 (100%)		

Note: * indicates significance at α 0.05 with the chi-square test.

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