

An Occupational Health Perspective of Nurses' Quality of Life in Indonesia

Calidad de vida de las enfermeras en Indonesia: una perspectiva de salud laboral

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Abstract

This study aims to develop factors and indicators of aspects that shape nurses' quality of life. It was conducted using a cross-sectional design, while the population consisted of nurses working in the inpatient ward totaling 915. The sample size was determined by the rule of thumb criteria which produced 270 nurses. The samples were selected using the simple random sampling technique, while data was collected with a questionnaire that had been tested for its validity and reliability. The endogenous variable hypothesis test was carried out by SEM-PLS analysis. The results showed that health aspects affect nurses' quality of life, as physical health sharpens engagement in professional activities and social relationships. Spiritual influence on nurses' quality of life, as well as the ability to withstand stress, anxiety, and depression, depend on the value of trust in God. Furthermore, the workplace standard affects the quality of life, while job satisfaction influences the achievement of welfare. The work environment is the main stressor for workers about job satisfaction and self-actualization. The Indonesian government needs to formulate policies to support work environment management in health service agencies, as well as facilitate the Indonesian Nurses Association to improve nurses' quality of life and increase their competence.

Keywords: nurses' quality of life, health aspects, spirituality, quality of work life, occupational health, work environment

Resumen

Este estudio desarrolla, a partir de factores e indicadores, distintos aspectos que inciden sobre la calidad de vida de las enfermeras. Esta investigación se llevó a cabo mediante un diseño transversal, la población estuvo formada por enfermeras que trabajaban en la planta de hospitalización, un total de 915. El tamaño de la muestra se determinó mediante el criterio de la regla empírica que arrojó 270. Se utilizó como criterio de selección la técnica de muestreo aleatorio simple, los datos se recabaron mediante un cuestionario cuya validez y fiabilidad están establecidas. La prueba de hipótesis de la variable endógena se llevó a cabo mediante un análisis SEM-PLS. Los resultados revelaron aspectos relacionados con la vivencia de salud que incide en la calidad de vida de las enfermeras. La salud física fortalece el compromiso con las actividades profesionales y las relaciones sociales. La influencia espiritual sobre la calidad de vida de las enfermeras, así como sobre su capacidad para sobrellevar el estrés, la ansiedad y la depresión, dependen del nivel de su confianza en Dios. Además, las normas del lugar de trabajo afectan su calidad de vida y la satisfacción laboral influye en la consecución del bienestar. El entorno laboral es el principal factor de estrés para los trabajadores en lo que respecta a la satisfacción laboral y la autorrealización. El gobierno indonesio debe formular políticas de apoyo a la gestión del entorno laboral en los organismos de servicios sanitarios, así como facilitar a la Asociación de Enfermeras de Indonesia mejorasen la calidad de vida de las enfermeras y el consecuente aumento de su competencia.

Palabras clave: calidad de vida de las enfermeras, aspectos de salud, espiritualidad, calidad de vida laboral, salud ocupacional, entorno laboral



Introduction

Quality of life is a human achievement that originates from subjective feelings, including ideal welfare. According to Kosim (2015), the quality of life depends on living conditions, work, and family income¹. Nurses' quality of life is related to the work or performance standard in providing nursing services. Assessment of service quality is important for developing management policies².

Evidence showed that the service to patients has not been maximized, and this is because nurses' quality of life is low, thereby affecting the service standards for patients and clients. Nursing care with standard services for the elderly has been reported to improve life quality³. The Indonesian National Nurses Association (2012) stated that the quality of nursing services is low because 50.9% of nurses experience work stress, dizziness, lack of rest, and a high workload. High work pressure causes mental disorders, hence, it affects the life quality of nurses⁴.

The measurement of nurses' life quality refers to WHO⁵, as well as Sirin⁶, Morsy⁷, and Utami⁸. According to WHO⁵, quality of life consists of Physical, Psychological, Independence, Social Relations, Environmental, and Spiritual aspects, and this definition is general, and not specific to nurses. Sirin⁶ stated that the dimensions of nurses' quality of life comprise the work environment, relationship with managers, working conditions, work perception, and service support. This model majorly highlights the factors of the work environment, hence, it can not be relatively used to measure nurses' quality of life.

Morsy^{7,9} also examined the quality of work life among nurses similarly to Sirin⁶ but used different aspects of measurement, namely work life, design, supervisory management, and development opportunities. Aspects of work life are not appropriate, they consist of the environment, equipment, people, and work-life outside the work domain. Utami⁸ highlighted the spiritual aspect as measured by 4 indicators, namely gratitude, calm, patience, and sincerity. This study focused on job stress and did not assess the quality of life.

The novelty of this study is to develop nurses' quality of life, as well as to add health and spiritual aspects that were not included in previous investigations. The indicators of gratitude, calm, patience, and sincerity are more appropriate and in accordance with the characteristics of the religious Indonesians¹. Quality of life can be achieved when a balance is obtained in the physical (health), spiritual, social, and work environment. However, no previous study used these four variables to analyze the indicators and aspects that shape nurses' quality of life.

A preliminary study conducted at two Class C hospitals in Medan City on 30 nurses obtained data on 27 and 3 respondents with low and moderate quality of life, respectively. Approximately 72% of nurses experience job and income dissatisfaction with education, work duties, and responsibilities, with no career development for 9 years of work. In addition, 75% responded that the discomfort of the work environment is caused by disrespect towards the nursing profession, unharmonious work relationships, heavy workload, lack of training, stress, and the prospect of facing patients in critical conditions. The observation results prove that several nurses do not apply nursing care according to the standards set.

This is demonstrated in the nurses' inability to communicate effectively with patients, poor relationships with co-workers, as well as indifference and passivism toward patients and other people in the hospital organizational environment. Consequently, this condition will affect the life quality of nursing staff.

This study aims to determine factors and indicators that shape nurses' quality of life to improve their working conditions by considering the physical, mental, psychological, and social needs, as well as the productivity of nurses in social life. The results are expected to help increase the Human Development Index (HDI) for nurses to improve the quality of health services in Indonesia, specifically in class C hospitals, Medan City, North Sumatra Province. It is also an effort to protect health workers in carrying out occupational and health safety.

Table 1. Sampling technique of nurses in Class C hospital Medan City (n=270)

No	Hospital	Nurse Population	Sampling
1	<i>Bhakti</i>	34	$270/915 \times 34 = 10$
2	<i>Bunda Thamrin</i>	350	$270/915 \times 350 = 103$
3	<i>Islam Malahayati</i>	120	$270/915 \times 120 = 35$
4	<i>Mitra Medika tembung</i>	150	$270/915 \times 150 = 44$
5	<i>Mitra Medika Tanjung Mulia</i>	265	$270/915 \times 265 = 78$
Total		915	270

Source: primary data, 2021

After clustering at 5 hospitals and obtaining a sample size of 270, the samples were then selected randomly.

Study Design

Location, and Time

This study used a cross-sectional design and was conducted in 5 class C hospitals in Medan City, North Sumatra Province, Indonesia, from January 2021 - December 2021. This location was selected because it is an initial referral hospital for BPJS patients (Social Security Administrative Body) that organizes health programs for the community in the country. This study received permission from the ethics commission of the Maluku Husada Health Faculty with the number: RK.09/KEPK/STIK/XII/2020.

Population and Sample

The study population was nurses working at the inpatient ward of the Medan City C class hospital to provide nursing services to patients. The total population was 915 nurses registered in 5 type C hospitals. The number of samples referred to the rule of thumb in the application of the SEM model according to Wijayanto¹⁰, which stated that the sample size is the number of indicators multiplied by 10 to 20, in this case, there were 18 indicators and 15 people, hence, the sample size was $18 \times 15 = 270$ nurses. The sample selection for each hospital used the following cluster sampling technique:

Data Collection Technique

The data collection tool used was a closed questionnaire prepared using the concept of previous studies. The questionnaire has been tested for validity and reliability at Mitra Amplas

Hospital, it was used to measure 4 exogenous variables, namely:

- 1) The health variable (X1) consist of 4 indicators, namely physical health (X1.1), mental health (X1.2), home environment (X1.3), and social relations (X1.4)
- 2) Spiritual variables (X2) have 4 indicators, namely gratitude (X2.1), calm (X2.2), patience (X2.3), and sincerity (X2.4)
- 3) Quality of work life variable (X3) includes 4 indicators, namely home life (X3.1), work design (X3.2), supervisory management (X3.3), career development opportunities (X3.4)
- 4) Work environment variable (X4) consist of 3 indicators, namely nurse participation (X4.1), leadership (X4.2), and adequacy of human resources (X4.3).

The questionnaire was used to measure 1 endogenous variable, namely nurses' quality of life (Y). The existence of endogenous variables is often influenced by other components in the model (Trianto, 2016), known as the dependent. Nurses' quality of life was measured by 3 indicators, namely happiness (Y1), welfare (Y2), and satisfaction (Y3), while the total number of indicators was 18.

Data Analysis

Hypothesis testing was performed through the analysis of causal relationships between exogenous and endogenous variables, as well as checking the validity and reliability of the study instrument. Therefore, the Structural Equation Modeling (SEM) analysis technique was used with the PLS (Partial Least Squares) version 3.0

program and SPSS version 23. The hypothesis was tested by comparing the probability value (p) with a specified significance level of 0.05. When the probability value (p) is smaller than (0.05), the hypothesis can be accepted.

Results

Respondents' Characteristics

Description of the nurses' characteristics including age, years of service, and marital status is shown in Table 2 as follows:

Table 2. Distribution of Nurse Characteristics by Age, Years of Service, and Marital Status

Nurse Characteristics	Frequency	Percentage
Age		
22-29	135	50,0
30-37	91	33,7
38-45	33	12,2
46-53	11	4,1
Working Period		
<10 year	241	89,3
10-20 year	22	8,1
21-30 year	7	2,6
Marital status		
Married	158	58,5
Single	112	41,5

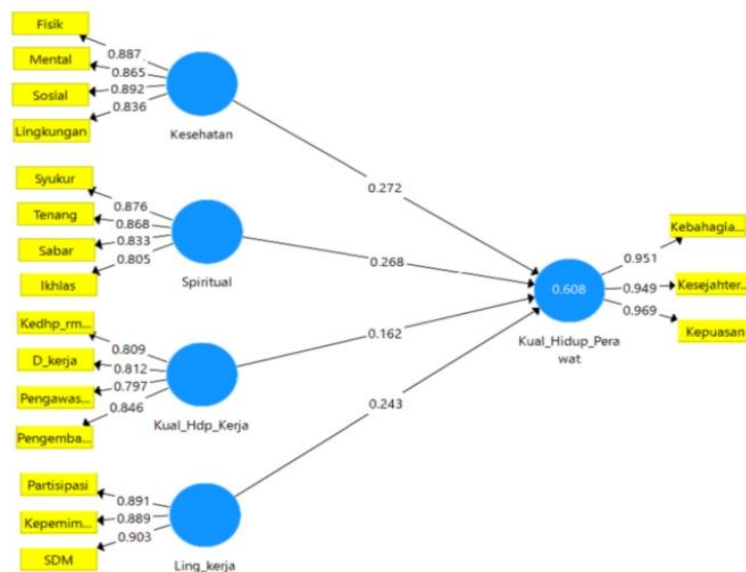
Source: Primary Data, 2021

Based on Table 2, the majority of the respondents namely 50.0% aged from 22 to 29 years, while the minority or 4.1% aged between 46 to 53 years, hence, it can be concluded that most of the nurses are young and productive workers. From the years of service perspective, 8.3% of the respondents have a tenure of fewer than 10 years, while 4.1% have 21 to 30 years. Therefore, it can be concluded that although nurses have a working period of fewer than 10 years, they can already feel the difficult conditions in the work environment. The majority of the respondents namely 58.5% were married, while 41.5% were single. This indicate that nurses have multifunctional roles, large workloads, and several responsibilities. as workers and as housewives.

Outer Model Analysis

Analysis of the structural model was carried out by measuring nurses' quality of life consisting of four variables and 18 indicators. This was conducted using a structural equation model with the smart PLS (Partial Least Squares) analysis version 3.0 as follows:

Figure 2. Path analysis of exogenous variables (outer model)



Source: primary data

The path analysis results in Figure 2 show that the outer model of the health variables consists of 4 indicators, namely physical health with a loading factor of 0.887, mental health 0.865, social relation 0.892, and environment 0.836. The four indicators on overall health variables had convergent validity > 0.7, hence, they can be used to measure health variables¹¹. The spiritual variable has 4 indicators, namely gratitude with a loading factor of 0.876, sincerity 0.868, calm 0.833, and patience 0.805. The four indicators on the spiritual variable are included in convergent validity > 0.7, hence, they can be used to measure spiritual variables.

The quality of work life consists of 4 indicators, namely home life with a loading factor of 0.809, work design 0.812, supervision 0.797, and development 0.846. The four indicators on the overall quality of work-life variable had convergent validity are > 0.7, hence, they can be used to assess the quality of work-life.

The work environment variable has 3 indicators, namely nurse participation with a loading factor of 0.891, leadership 0.889, and human resources 0.903. These four indicators are included in the convergent validity > 0.7, hence, they can be used to measure the work environment.

The quality of life variable has 3 indicators, namely happiness with a loading factor of 0.951, welfare 0.949, and satisfaction 0.969. All indicators were declared valid, with a convergent validity > 0.7, hence, they can be used to assess nurses' quality of life work.

Hypothesis Test Results (Inner Model)

The hypothesis test was conducted to determine the statistical relationship or influence between endogenous variables. It was carried out based on the results of the inner or structural model test which included the output of r-square, parameter coefficients, and t-statistics. The results of hypothesis testing are shown in the table below:

As shown in Table 3, hypothesis testing shows that H1: Health affects nurses' quality of life. The test results prove that there is a significant association between the two variables, with t-

statistic value of 4.192 which is significant because it is > 1.96 and has a p-value of <0.05. This proves that health has a positive effect on nurses' quality of life.

Table 3. Hypothesis Test Results

No	Hypothesis	Std. Dev	T-Statistics	P-Value
1	Health □ Nurses' Quality of Life	0,065	4,192	0,0001*
2	Spiritual □ Nurses' Quality of Life	0,049	3,273	0,0001*
3	Quality of Work Life □ Nurses' Quality of Life	0,056	4,319	0,0001*
4	Work Environment □ Nurses' Quality of Life	0,074	3,623	0,0001*

Description: "□" influential (*sig p-value 0.05)

H2: The Spiritual aspect affects nurses' quality of life, the test results prove that there is a significant relationship between the two variables, with a t-statistic value of 3.273, which is significant because it is > 1.96 and has a p-value <0.05. This indicates that spirituality has a positive effect on nurses' quality of life.

H3: The quality of work life affects nurses' quality of life, the test results prove that there is a significant association between the two variables, with a t-statistic value of 4.319, which is significant because it is > 1.96 and has a p-value <0.05. This implies that the quality of work life has a positive effect on nurses' quality of life.

H4: The work environment affects nurses' quality of life. The test results prove that there is a significant influence between the two variables, showing a t-statistic value of 3.623, which is significant because it is >1.96 with a p-value <0.05. This proves that work environment has a positive effect on nurses' quality of life.

Designing the Inner Model

The Goodness of Fit model can be used based on the dependent latent variable R-square with the same interpretation results as the regression calculation. The predictive relevance value of Q-

square in the structural model is used to determine the influence of the observation values generated by the model. Furthermore, as parameter estimates, the value of R Square > 0 and $<$ or equal to 0 indicates that the model has and lacks predictive relevance, respectively. The results of the inner model measurement obtained using PLS are as follows:

Table 4. Inner Model Measurement Results

Variable(Y)	R Square	R Square Adjusted
Nurses' Quality of Life	0,608	0,602

Source: data processing with PLS 2021

The results showed that the R Square value is 0.608, indicating that the influence of the health (X1), spirituality (X2), quality of work life (X3), and work environment variables (X4) can provide a value of 0.608. This means that the dependent latent variable can be influenced by the independent up to 60.8%, while the remaining 39.2% is caused by other variables outside this study. The measurement results can be categorized as having a dependent variable influenced by independent variables with a strong scale.

The R Square Adjusted measurement produced values with an interval between 0 to 1, hence, when the value is close to 1, the results showed that the independent latent variable (X) can adequately explain the variation of the dependent (Y). The R Square Adjusted value was 0.602 or 60.2%. Therefore, it can be concluded that 60.2% of the variation in (Y) can be influenced by the independent latent variable, while 39.8% is influenced by other variables outside this study.

Discussion

Health affects nurses' quality of life, and according to WHO¹², this concept is a state of being free from disease and disability. Good health allows a person to be active, work, and socialize¹³. The results are in accordance with WHO¹², and Jacob¹³, Diana¹⁴, which stated that the health aspect affects nurses' quality of life. Furthermore, Wu et al¹⁵ explained that a person's quality of life is influenced by physical activities, while health,

in general, is a state of not experiencing disease in the population of children, adolescents, adults, and the elderly.

Spirituality as the independent variable was found to affect aspects of nurses' quality of life. Mental health is inseparable from the individual's ability to withstand stress, which is related to belief, awareness, and submission to God^{16,17,8}. Psychological disorders are characterized by anxiety, stress, and spiritual hopelessness¹⁸. Furthermore, cognitive behavioral interventions such as practicing relaxation, increasing self-awareness and correcting thoughts and feelings, as well as stress management have been shown to be effective in improving quality of life¹⁹.

Psychological health leads to freedom from mental stress, anxiety, and depression. A previous study reported that patients' quality of life decreased with increasing anxiety and depression²⁰. Individuals who do not experience psychological disorders can live their lives properly¹³ because mental health affects physical well-being. The physical quality of a person is determined by his mental qualities. The interdependence between mental and physical health is related to the quality of life²¹. Female nurses tend to have higher work stress because of their dual roles²².

The quality of work life affects nurses' life, home, work design, supervisory management, and career development opportunities. Work is associated with individual happiness²³, hence, quality of life studies often analyze job characteristics. The groups of employed and unemployed respondents have differences in their quality of life²⁴. Alici et al.,²⁵ mentioned that patients' quality of life and satisfaction are determined by perceptions of the nurses' service standard. This means that the nursing services' standard affects patients' quality of life. It is reported that working hours that are too long are negatively related to the health of female workers²⁶.

Based on the results, the work environment also affects nurses' quality of life. It is important to note that health workers are a group of people who are at high risk of contracting infectious diseases²⁷. A study on exposure to infectious diseases in 2,600 nurses found that they were infected (+) with 1:6 nurses in the inpatient room²⁷. Nurses'

work environment generally triggers physical and mental stressors. Lucacconi²⁸ added that nurses who work in inpatient rooms and treat patients directly have a greater potential for contracting infectious diseases, such as SARS-CoV-2. Moreover, Raes²⁹ mentioned that health workers face a higher occupational risk of being exposed to SARS-CoV-2 than non-health.

Severe patient conditions, high workload, family mental pressure, doctors, inappropriate rewards, and incentives are aspects of the work environment that trigger work stress for the nursing profession. Nurses' quality of life is directly proportional to their status of physical and psychological health. According to a previous study, nurses' quality of life assessment is substandard, with a significant reduction in physical and mental health scores³⁰. A stressful work environment causes mental disorders and decreased quality of life⁴. The ability of nurses to solve patient problems and show good professional actions in making decisions leads to a good quality of life³¹.

The nursing profession is associated with responsibilities towards patients, patient families, patient friends, co-workers, doctors, workload and workplace regulations, all which affect their physical and mental conditions³². Nurses are required to have an attitude of empathy and compassion³³. Health status, lifestyle, mental health, nursing professional responsibilities influence their quality of life³⁴. Other researchers say that women who work and are productive have an impact on their health and quality of life³⁵. The heavy duty responsibilities and other demands allow professional nurses to experience stress and affect their health. and affect the quality of service to patients.

Conclusion

The health aspect which consists of four indicators, namely physical, mental, social, and environmental, as well as the spiritual aspect consisting of gratitude, calm, patience, and sincerity affects nurses' quality of life. Furthermore, the quality of work life which consists of home/workplace life, work design, supervision, and career development as well as the

environmental aspect which consists of three indicators, namely nurse participation, leadership, and adequacy of Human Resources affects nurses' quality of life. Aspects that formed nurses' quality of life were determined by the independent variable of 60.8% showing a strong relationship.

These results contribute to improving the welfare of the workforce, specifically nurses in accordance with Occupational Health and Safety standards. There also need to be a policy at the management level to evaluate a work environment that supports work comfort and safety. Measurement of nurses' quality of life helps in increasing the Human Development Index (HDI) to improve the quality of health services in Indonesia. Nurse organizations through the Indonesian National Nurses Association need to provide support to improve nurses' quality of life through seminars and training on aspects that support the nursing profession. These results provide benefits for further studies to explore nurses' quality of life with different reflective indicators.

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