THE RELATIONSHIP BETWEEN CHARACTERISTICS AND MENTAL WORKLOAD OF NURSES WITH WORK STRESS AT THE GENERAL HOSPITAL, NORTH ACEH REGENCY

Riski Dian Ardianti*[1], Marthoenis[2], Hajjul Kamil[3]
[1]Univeritas Bumi Persada, Lhokseumawe, Indonesia
[2,3]Faculty of Nursing, Universitas Syiah Kuala, Banda Aceh Indonesia
Email : Kikidian130@gmail.com*

ABSTRACT

Work stress occurs as a result of the interactions between employees and their work. It is characterized by changes that force employees to deviate from their normal function. Many factors such as responsibilities, outside work, and the individual cause stress, and they have an impact on health services, specifically in hospitals. Therefore, this study aims to determine the relationship between the characteristics and mental workload with the work stress of nurses in the Inpatient Room at Cut Meutia Hospital, North Aceh Regency. This descriptive-analytical study was conducted with the cross-sectional method and the convenience sampling technique was adopted to select 147 nurses as the sample. The instrument used for data collection was the National Aeronautics and Space Administration Task Load Index (NASA-TLX) and the Work Stress Questionnaire (WSQ). Data analysis used Chi-Square and the results showed that there was a relationship between age ($p = 0.008$), income ($p = 0.010$), experience ($p = 0.000$), and workload ($p = 0.001$) with work stress. Furthermore, nurse work stress has no relationship with gender ($p = 0.764$), Education ($p = 0.348$), and competency achievement ($p = 0.251$). The logistic regression showed that the factor most related to the occurrence of work stress was work experience ($p < 0.000$, OR: 76,758). Based on the result, the management of nurses' work in accordance with physical and mental abilities is recommended to improve their services in hospitals.

Keywords: Characteristics, Mental Workload, Nurse, Work Stress

ABSTRAK

Stres kerja terjadi sebagai akibat dari interaksi antara karyawan dan pekerjaan mereka. Hal ini ditandai dengan perubahan yang memaksa karyawan untuk menyimpang dari fungsi normal mereka. Banyak faktor seperti tanggung jawab, pekerjaan luar, dan individu yang menyebabkan stres, dan berdampak pada layanan kesehatan, khususnya di rumah sakit. Oleh karena itu, penelitian ini bertujuan untuk mengetahui hubungan antara karakteristik dan beban kerja mental dengan stres kerja perawat di Ruang Rawat Inap di Rumah Sakit Cut Meutia, Kabupaten Aceh Utara. Penelitian deskriptif analitik ini dilakukan dengan metode cross-sectional dan teknik convenience sampling diadopsi untuk memilih 147 perawat sebagai sampel. Instrumen yang digunakan untuk pengumpulan data adalah National Aeronautics and Space Administration Task Load Index (NASA-TLX) dan Work Stress Questionnaire (WSQ). Analisis data menggunakan Chi-Square dan hasilnya menunjukkan bahwa ada hubungan antara usia (p = 0,008), pendapatan (p = 0,010), pengalaman (p = 0,000), dan beban kerja (p = 0,001) dengan stres kerja. Lebih lanjut, stres kerja perawat tidak berhubungan dengan jenis kelamin (p = 0,764), pendidikan (p = 0,348), dan pencapaian kompetensi (p = 0,251). Hasil regresi logistik menunjukkan bahwa faktor yang paling berhubungan dengan terjadinya stres kerja adalah pengalaman kerja (p < 0,000, OR:

76,758). Berdasarkan hasil tersebut, manajemen kerja perawat yang sesuai dengan kemampuan fisik dan mental direkomendasikan untuk meningkatkan pelayanan di rumah sakit

.

Kata kunci: Karakteristik, Beban Kerja Mental, Perawat, Stres Kerja

1. Introduction

Nurses provide nursing care by exchanging energy, controlling stress, and interacting with patients to reduce their health problems. This role has a major impact on the quality of nursing services when they perform their duties according to procedures (Alligood, 2014; Mustika Suci, 2018). Excessive workload has a negative influence on productivity, health problems, decreased work motivation, and the quality of nursing care services provided to clients (Safitri & Astutik, 2019). Furthermore, several factors constitute work stress, including night shifts, multiple role conflicts, diverse task demands, and performance incompatibility with the compensation received by nurses (Martina, 2012; Nurazizah, 2017). According to Ilyas (2020), the problem of work stress on nurses in hospitals is caused by biological, psychological, social, and physical factors.

Several studies showed that work stress is caused by many factors in the work environment. According to Muharyati (2015), it is caused by a large workload, poor interpersonal relationships with coworkers, and hampered career development. Martyastuti & Janah (2019) reported that the small ratio of nurses to the number of patients, many tasks assigned by the leadership, demands for quality services, and prioritizing patient safety are also included as the causes. In addition, workload and work stress can partially affect the performance of nurses in hospitals (Aprilia, Samsir, S., & Pramadewi, A., 2016). The Some of the characteristics of work that can lead to stress includes the amount of workload and its variation, unused abilities, role ambiguity, role and interpersonal conflicts, job uncertainty, work shifts, and lack of control (ILO, 2016). The increased mental workload due to the small nurses-to-bed ratio and income mismatch with job demands causes psychological problems such as work stress. Therefore, this study aims to determine the relationship between the characteristics and mental workload of nurses with work stress in hospitals.

2. Method

This study adopted the analytic design with the cross-sectional method in order to identify characteristic correlation and mental work load of nurse with working stress of nurse in Cut Meutia hospital North Aceh Regency. The population consists of all nurses on duty in the hospital and the convenience sampling technique was used to select samples. This study was conducted from March to May 2025 with a sample of 147 nurses. The inclusion criteria include a minimum education of Diploma III in nursing, 2 or more years of service, and a duty as an implementing nurse.

Data were collected using demographic, National Aeronautics and Space Administration-task Load Index (NASA-TLX), and Work Stress Questionnaire (WSQ) that is: >80 high, 50-0 medium and <50 low. Work Stress Questionnaire (WSQ) is used to value level that is used to measure mental work load of nurse in nursing care interaction, consists of 6 question items with answer choices using likert scale with available scale statement low (10) until high (100) therefore the result of score divided into 3 parts of nurse stress using 21 question items included 4 main themes,unidentified

orgaization and conflict, demand and individual commitment, working place effect and working place interruption toward leisure time. Ethical permission was obtained from the ethics committee in the Faculty of Nursing, Syiah Kuala University, with the number: 112028110122. Respondents were taken after signing the informed consent. Respoden was taken after signing informed concent. Measurement result of working stress variable using normal or stress.

3.   Data Analysis

The Chi-Square statistical test was used to obtain the relationship between age, gender, education, income, competency achievement, experience, and mental workload on nurses' work stress. Furthermore, a logistic regression test was conducted to obtain the factors that dominate the occurrence of nurse work stress. All data analysis was carried out using PSPP software.

4.   Result

a.   Respondents' Characteristics

Table 1. Nurse Characteristics Summary

N o	Characteristics	Total (n)	Persentase (%)
1	Age group		
	● 26–35 Years		45.6
		67	40.1
	● 36–45 Years	59	14.3
	● 46–55 Years	21	
2	Gender		
	● Male	41	27.9
	● Female	106	72.1
3	Education		
	● Nursing diploma	66	44.9
		27	18.4
	● Bachelor of nursing	54	36.7

N o	Characteristics	Total (n)	Persentase (%)
	● Ners		
4	Monthly income	109	74.1
	● < Rp.3.280.327,-	38	25.9
	● ≥ Rp.3.280.327,-		
5	Work experience	67	45.6
	● ≤ 4 Years	80	54.5
	● > 4 Years		
6	Competency achievement	24	16.3
	● Pre clinic nurse	123	83.7
	● Clinik nurse (PK-1)		
7	Mental workload	7	45.6
	Low	2	54.4
	Medium	7	
		5	
8	Work stress	6	45.6
	Normal	7	54.4
	Stress	8	
		0	

The distribution of respondents' characteristics data showed that the most age range, gender, education, income, and working experience were 26-35 years, female, Diploma III nursing , < IDR 3.280.327, and > 4 years, accounting for 67 (45.6%), 106 (72.1%), 54 (36.7%), 109 (74.1%), and 80 (54.5%), respectively. Furthermore, the competency achievement of

123 (83.7%) respondents was a clinical nurse (PK-1) and the most moderate mental workload and work stresses were 75 (54.4%) and 80 (54.4%), respectively. The frequency distribution of respondents' characteristic data is shown in Table 1.

b. The relationship of characteristics/variables with nurses' work stress

Table 2. Analysis of The Relationship Between Characteristics and Mental Workload of Nurses With Work Stress In Hospitals 5.

Variabel	Work Stress Normal n	Work Stress Normal %	Stress n	Stress %	X²	p
Age group						
26–35 Years	38	56.7	29	43.3	9.555	0.008
36–45 Years	25	42.4	34	57.6		
46–55 Years	4	19.0	17	80		
Gender						
Male	20	48.8	21	51.2	0.235	0.764
Female	47	44.3	59	55.7		
Education						
Nursing diploma	31	47.0	35	53.0	2.109	0.348
Bachelor of nursing	19	33.3	18	66.7		
Ners	27	50.0	27	50.0		
Monthly income						
< Rp.3.280.327,-	45	39.5	69	60.5	7.629	0.001
≥ Rp.3.280.327,-	22	66.7	11	33.3		
Competency achievement						
Pre clinic nurse	14	58.3	10	41.7	1.881	0.251
Clinik nurse (PK-1)	53	43.1	70	56.9		
Work experience						
≤ 4 Years	64	95.5	3	4.5	123.806	0.000
> 4 Years	3	3.8	77	96.2		
Mental workload						
Low	65	97.0	2	3.0	113.675	0.001
Medium	2	2.5	78	97.5		

The statistical test results showed that the factors related to work stress were age (p=0.008), income (0.001), work experience (p=0.000) and mental workload (p=0.001). The results of the measured relationship between the characteristics/variables with nurses' work stress are shown in Table 2.

c. Factors that dominate the occurrence of nurse work stress

Table 3: Multivariate Results of The Fourth Logistik Regression Experience And Mental Workload of Nurses

Variabel	B	Wald	p	OR	95%CI
Work experience	4.341	21.852	0.000	76.758	12.423-474.252
Mental workload	3.397	11.259	0.001	29.869	4.107-217.219

The logistic regression results showed that the experience and mental workload of nurses had the same effect on work stress. The measurement results of factors that dominate the occurrence of nurse work stress is shown in Table 3.

d. **Discussion**

This study describes the relationship between mental workload and work stress of nurses at the North Aceh District Hospital. The percentage of nurses who feel work stress is high is 54.5%, and those who feel a moderate workload is 54.4%. This is due to factors such as incomplete jobs on the desk, lack of appreciation, internal problems such as interpersonal conflicts, environmental problems, and nurses' health. According to (Martina, 2012; Nurazizah, 2017) , the causes of nurses' stress include night shifts, multiple role conflicts, lack of social support, the conflict between work and family, diverse task demands, compensation mismatch, excessive workload, uncomfortable working conditions, job uncertainty, lack of rewards, over-promotion or under-promotion, and an imbalance in the ratio of the number of nurses to patients.

Meanwhile, (Ilyas, 2020) reported that persisting work stress can cause serious problems, which are caused by several factors such as biological, psychological, social, and physical. According to (Nanda Kinanti Allu, Fahrurazi, & Handayani, 2020), the workload carried out by nurses are work stress, interpersonal relationships, and career barriers accounting for 78.6%, 92.2%, and 49.6%, respectively. Furthermore, Martyastuti et al. (2019) reported that nurses are affected by their heavy duty, the mismatch of nurse-patient ratios, the presence of additional tasks from the leadership that was not completed within the stipulated time, the many types of work that had to be accomplished for patient safety, and the demands for quality services. Manuho (2015) found that there was a relationship between workload and nurse performance in providing nursing care. In addition, Difibri, Syarif, & Fikriyanti, (2021) found that 56% of nurses had a heavy workload caused by several factors including patient characteristics and clinical conditions, as well as panic from their family members.

Nanda Kinanti Allu et al., (2020) also revealed a relationship between age and nurse work stress. Judging from individual characteristics, individuals who have a mature age will walk according to their age, where the maturity of the nurse's thinking will be in line with thw workload given in the hospital agency. Finally, hospitals have appropriate work standards, but they need to be evaluated against existing policy regulations. Research (Mustika Suci, 2018) was observed from correlation between working load and working stress released strong correlation, whereas the level of education,marrital status, and woring period has low correlation to working stress. The result of research (Elvinawati, 2019) divined that workload and working stress toward executive nurse in hospital inpatient room. High working load is trigger of stress, because everyone has limit eiher in

knowledge or skill and physical capability wherein there are many jobs and need to be solved in fast time can cause stress. Stress of nurse will lead invalid work (error), error in working especially service to patients in hospital can cause fatal effect toward patients (Martyastuti & Janah, 2019).

Mental workload in this research is most dominant in medium category of 73 nurses 49,7% from all respondens, the highest score in rating is on performance and time needed. It is different from other research that high mental workload was reported in physically demand aspect and working time, that the level of mental workload is in medium and high level (Iridiastadi, Septiawati, Yuliani, & Hernadewita, 2020). The employees who have been worked for a long time can not necessarily improve their performance. Monotoneous workload and various patient's attitude and behaviour tend to emotionally becomes a stressor for nurses. The elder age of nurses with long working period in hospital claimed that they got tired, boredom an stress after undergoing their activities (Angelina, Busairi, & Tumanggor, 2020). He result of this research indicated the result of correlation between the income and work stress *p-value* 0.004. It was observed from the highest income from Rp. 300.000- Rp. 1.500.000 compared to minimum wages in North Aceh that Rp. 3.280.327 per month so thst is far from prosperous level. However this result is opposite from other research that mentioned that there is correlation between income and working stress for nurses in inpatient room in mental hospital of Southeast Sulawesi in 2016 (Kaimudin, Lestari, & Afa, 2016).

e.   **Conclusion**

In conclusion, most respondents are in the age range of 26-35 years (45.6%), female (72.1%), had Diploma III nursing education level (44.9%), monthly income < IDR 3,280,327 (74.1%), 4 years of work experience (45.6%), attained competence as a clinical nurse (83.7%), moderate mental workload (54.4%), and have work stress (54.4%). Furthermore, there was a significant relationship between mental workload and nurse work stress.

Bibliography

Alligood, M. R. (2014). Nursing Theories And Their Work. In *Paper Knowledge . Toward a Media History of Documents* (Eighth). Elsevier.

Aprilia, F., Samsir, S., &, & Pramadewi, A. (2016). Pengaruh Beban Kerja, Stres Kerja Dan Motivasi Kerja Terhadap Kinerja Perawat Rumah Sakit Islam Ibnu Sina Pekanbaru. *Jurnal Online Mahasiswa Fakultas Ekonomi Universitas Riau*, *4*(1), 87–100.

Bahrer, S., & Kohler. (2019). *Burnout For Experts Prevention in The Context Of Living and Working* (Vol. 1).

Difibri, D., Syarif, H., & Fikriyanti. (2021). Hubungan Beban Kerja dan Stres Kerja Perawat di Instalasi Gawat Darurat. *JIM FKep*, *V*(2), 195–202.

Fitriani, R. D., Theresa, R. M., & Aprilia, C. A. (2020). *Pengaruh Strategi Coping Terhadap Tingkat Stres Pada Caregiver Informal Yang Merawat Penderita Skizofrenia Di Poli Rawat Jalan Rumah Sakit Jiwa DR. Soeharto Heerdjan Jakarta Barat*. *7*(September), 128–133.

Ilyas, L. A. (2020). *Faktor Yang Berhubungan Dengan Stres Kerja Pada Perawat DI Rumah Sakit Umum Daerah (RSUD) Sayang Rakyat Makasar Tahun 2020*.

Martina, A. (2012). Gambaran Tingkat Stres Kerja Pada Perawat Di Ruang Rawat Inap RSPG Cisarua Bogor. *Skripsi Fakultas Ilmu Keperawatan Universitas Indonesia*.

Martyastuti, N. E., & Janah, K. (2019). *Hubungan Beban Kerja Dengan Tingkat Stres Perawat Ruang Intensive Care Unit dan Instalasi Gawat Darurat*. 2(1).

Muharyati. (2015). Faktor-Faktor yang Mempengaruhi Stress Kerja Perawat di Ruang Rawat Inap RSUD Sukoharjo. *Jurnal Kesehatan Kesuma Husada*.

Mustika Suci, I. S. (2018). Analisis Hubungan Faktor Individu Dan Beban Kerja Mental Dengan Stres Kerja. *The Indonesian Journal of Occupational Safety and Health*, *7*(2), 220. https://doi.org/10.20473/ijosh.v7i2.2018.220-229

Nanda Kinanti Allu, D., Fahrurazi, & Handayani, E. (2020). *Faktor-Faktor Yang Berhubungan Dengan Stres Kerja Perawat Di Ruang Rawat Inap Penyakit Dalam Rsud Idaman Banjarbaru Tahun 2020*.

Nayak, M. R., Mallik, T., Hembram, S., & Dash, M. (2019). Perceived Family Burden Between Caregivers of Schizophrenic Patients. *Jurnal EMT KITA*, *3*(2), 94. https://doi.org/10.35870/emt.v3i2.113

Nurazizah. (2017). *Faktor- Faktor Yang Berhubungan Dengan Stres Kerja Pada Perawat Di Ruang Rawat Inap Kelas III RS X Jakarta Tahun 2017*. UIN Syarif Hidayatullah Jakarta.

Pardede, J. A., & Hasibuan, E. K. (2019). Dukungan Caregiver Dengan Frekuensi Kekambuhan Pasien Skizofrenia. *Idea Nursing Journal*, *10*(2), 21–26.

Safitri, L. N., & Astutik, M. (2019). Pengaruh Beban Kerja Terhadap Kepuasan Kerja Perawat Dengan Mediasi Stress Kerja. *JMD: Jurnal Riset Manajemen & Bisnis Dewantara*, *2*(1), 13–26. https://doi.org/10.26533/jmd.v2i1.344

Sebayang, S. (2020). Hubungan Dukungan Sosial Keluarga Dengan Frekuensi Kekambuhan Pasien Skizofrenia Paranoid Di Poliklinik Rs Jiwa Daerah Propsu Medan. *Jurnal Ners Indonesia, Volume 6, Nomor 2, April 2020 14*, *6*(2), 14–20.

Suaryana, I. K., Aryani, L. N. A., & Lesmana, C. B. J. (2020). The correlation of caregiving burden with depression, anxiety, and stress among caregivers of people with schizophrenia. *Journal of Clinical and Cultural Psychiatry*, *1*(2), 21–24. https://doi.org/10.36444/jccp.v1i2.11

Supiyarti, R., Noerhidayati, E., & Julianti, hari P. (2020). *Hubungan Antara Mekanisme Koping dengan Derajat Depresi pada Caregiver Pasien Skizofrenia*. *7*(2), 456–462. https://doi.org/10.36408./mhcjcm.v712.520