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#### RESEARCH ARTICLE

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# The Relationship of Workload with the Quality of Nursing Services in Hemodialysis **Installations**

# K Tri Ratnaningsih 1, Faisal Ibnu 2, M.Maridi 3, Seriga Banjarnahor4

Nursing Masters Study Program, Bina Sehat University <sup>1,2</sup>, Hemodialysis Nurse Dr Soetomo Hospital Surabaya<sup>3</sup> Faculty of Nursing, Lincoln University College, Malaysia<sup>4</sup>

Corresponding Author / first author ( K) email: <a href="mailto:triratna868@gmail.com">triratna868@gmail.com</a>

triratna868@gmail.com<sup>1</sup> masfaizppni@gmail.com<sup>2</sup> my4afamily@mail.com<sup>3</sup> banjarnahorseriga@gmail.com<sup>4</sup>

#### **ABSTRACT**

The quality of nursing services for hemodialysis patients is determined by the role and performance of nurses. High workloads are often the reason nurses leave work, which can disrupt the continuity of patient care. A high workload can have a negative impact on the quality of nurses' work, while a balanced workload can improve the quality of work. This study used a cross-section design with a sample of 35 hemodialysis nurses at RSUD Dr. Soetomo. The research was carried out in the Hemodialysis room at Dr Soetomo Hospital, Surabaya, Research data regarding workload and service quality variables was collected through questionnaires. Research data was processed using Spearmen rho with a p-value  $\leq 0.05$ . The statistical test results show that the p-value is 0.000, so it can be interpreted that H0 is rejected. This indicates a relationship between nurses' workload and the quality of hemodialysis services. The workload creates optimal nurse performance in carrying out actions. The performance of nurses in hemodialysis tasks, which are quite complex, with the number of patients being disproportionate to the number of nurses, has an effect on the quality of nursing services.

Keywords: Workload: Hemodialysi:, Service Quality

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#### INTRODUCTION

Nurses are the most significant health workers in hospitals, so they play an essential role in determining the quality of service <sup>(1)</sup>. However, the quality of nursing services in hospitals is still found to be not good <sup>(2)</sup>. The quality of nursing services for hemodialysis patients is determined by the role and performance of nurses <sup>(3)</sup>.

Results of research on nurses' workload <sup>(2)</sup> state that 28.7% of the quality of nursing services is in the poor category. The poor quality of service is due to nurses' high workload and spiritual intelligence in providing care. The results of research in Iran stated that nurses had a physical burden of 73% and a mental burden of 70%. In line with this, research related to the workload of hemodialysis nurses in Indonesian hospitals shows that 81% of respondents stated that they had a heavy workload <sup>(4)</sup>. Meanwhile, research results on nurses' workload <sup>(3)</sup> said that there was a moderate relationship between the spiritual intelligence of hemodialysis nurses at 25.9%, which impacted patient satisfaction, especially in fulfilling spiritual needs. A preliminary study was conducted by reviewing nurses' performance evaluation reports.

Based on the performance evaluation report of nurses in the Hemodialysis Room at Dr. Soetomo Surabaya, the total number of procedures in one month was 2200 procedures, and the number of nurses in the Hemodialysis Room was 36. These data illustrate that the workload received by nurses in the Hemodialysis Room is relatively high. Apart from that, interviews with several nurses in the Hemodialysis Room at RSUD, conducted by Dr. Soetomo Surabaya, stated that research regarding the influence of workload and spiritual intelligence on patient satisfaction has never been studied. Therefore, researchers are interested in examining the relationship between workload and spiritual intelligence on patient satisfaction in the Hemodialysis Room at Dr. RSUD. Soetomo Surabaya.

One of the important indicators in assessing health services, especially in hospitals, is patient satisfaction. Patient satisfaction is the result of the patient's assessment of health services by comparing what is expected with the reality received by the patient (5). Thus, the quality of health services hospitals provide greatly determines patient satisfaction. Quality nursing services are one type of health service in hospitals that can determine patient satisfaction. Nurses are health workers who play an important role in providing services in hospitals because they interact directly with patients 24 hours a day (6), (7) so this makes some nurses experience a high workload because they interact professionally with patients 24 hours a day. A high workload can cause psychological and habitual changes that can reduce nurse performance. High spiritual intelligence is needed to face situations with a high workload (8). Nurses with high spiritual intelligence have goals and meaning in providing nursing services so they can adapt and feel less pressured in providing nursing services and can improve the quality of nursing services (8). Research regarding the relationship between workload and spiritual intelligence on patient satisfaction is still rare, so it still needs to be researched and analyzed further (5).

The mental workload of nurses working and interacting with patients professionally for 24 hours will arise. This may be due to continuous adaptation in providing 24-hour nursing care and also

the dense task demands, limited abilities of nurses during treatment, lack of motivation, and the mood of nurses with psychological burdens <sup>(7)</sup>.

Satisfaction as a model of the gap between expectations and actual performance received by customers. Standards that can be used are how patients receive services, patients adopting the performance standards of hospital competitors for the same service category as comparison standards, service categories, promotional promises from hospitals, and applicable health norms <sup>(6)</sup>. Nurses' workload and nurses' spiritual intelligence in providing nursing care services are important for patient satisfaction. Patient satisfaction will indicate service quality when determining hospital accreditation<sup>(5)</sup>. This research aims to analyze the relationship between workload and the quality of nursing services in hemodialysis installations.

#### **METHOD**

This research design uses a survey method, namely research carried out to obtain facts about the phenomena that exist in the research subject and to seek actual and systematic information. This research design is based on the time of data collection, called cross-sectional research. The population in this study were all nurses at the Hemodialysis Installation at Dr. Soetomo Surabaya, totaling 36 nurses and patients who undergo routine hemodialysis at RSUD Dr. Soetomo within one month with 250 patients. The sample in this study were nurses who worked at the Hemodialysis Installation at Dr. RSUD: Soetomo Surabaya and patients undergoing hemodialysis at RSUD Dr. Soetomo. who met the inclusion and exclusion criteria. The nurse workload variable uses a workload questionnaire (Nursalam, 2020b) with 13 standard questions that have been widely used to carry out measurements in similar research. The workload includes physical and psychological aspects. Service quality is measured using a questionnaire from the job satisfaction instrument (9). This questionnaire was tested for validity and reliability with an r-value of 0.870-0.982, which means valid, and a Cronbach's Alpha value of 0.785, which means reliable. This service quality questionnaire consists of 20 questions using a Likert scale. This questionnaire has been tested for validity and reliability and is declared valid and reliable (10). The collected data was then tabulated using software to test the hypothesis, and then the Spearmen's rho test was carried out. The level of significance used was designed at p  $\leq$  0.05. If the test result is p  $\leq$  0.05 then H1 is accepted, meaning there is a relationship between workload and service quality. Correlation is said to have a meaningful relationship, namely that the better the workload, the better the perceived nursing service

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## **RESULTS**

Tabel 1.Demographic Characteristics of Hemodialysis Nurses at Dr. Soetomo in February 2024

No.	Demographics	Category	Frequensi	Persentace %
1.	Age	31-40 Years	16	45,7
		41-50 Years	14	40,0
		51-60 Years	5	14,3
		Total	35	100,0
2	Gender	Male	6	17,0
		Female	29	83,0
		Total	35	100,0
3.	Marital status	Marry	34	97,0
		Not Merried yet	1	3,0
		Total	35	100,0
4.	Education	Diploma	26	74,0
		Undergraduate	9	26,0
		Total	35	100,0
5.	Length of	1-7 Years	5	14,3
	working	8-14 Years	7	20,0
		15-21 Years	13	37,1
		22-28 Years	8	22,9
		29-35 Years	2	5,7
		Total	35	100,0
6.	Employement	Government employees	15	43,0
	status	not a civil servant	20	57,0
		Total	35	100,0

Based on the table above, it explains the demographics of the 35 respondents who represent the hemodialysis installation nurses at Dr. RSUD. Soetomo Surabaya. Nearly half of the respondents in this study were aged 31 - 40 years, 16 (45.7%), and most were female, 29 (83.0%). Most of the nurse respondents were married, 34 (97%). Most of the respondents had a D3 education, 26 (74%). Most of the respondents had 15-21 years of work experience, 13 people (37.1%). Most of the respondents had civil servant employment status 20 (57%).

Table 2. Workload of nurses in the hemodialysis room at Dr Soetomo Hospital, Surabaya in February 2024

No.	Variable		Category	Frequensi	Persentasion %
1.	Nurse	Light		6	17,1
	Workload	Moderat		22	62,9
		Weight		7	8,6
		Total		35	100,0

Based on the table above, explains information on workload variables at the hemodialysis installation at Dr. RSUD. Soetomo Surabaya. Almost all nurse respondents stated that their workload was in the medium category, 22 people (62.9%). Meanwhile, 6 nurses stated their workload was in the light category (17.1%) and 7 nurses stated their workload was heavy (20.0%). It can be concluded that

the nurses at the hemodialysis installation at RSUD Dr. Soetomo Surabaya have a workload in the moderate category which tends to be heavy.

Table 3. Service Quality Variables in the hemodialysis room at Dr Soetomo Hospital, Surabaya in February 2024

No.	Variable	Category	Frequensi	Persentasion %
1.	Service	Less satisfied	8	22,9
	Quality	Quite Satisfied	18	51,4
		Satisfied	9	25,7
		Total	53	100,0

Based on the table above, explains information on service quality variables at the Hemodialysis Installation at Dr. RSUD. Soetomo Surabaya. Almost all patient respondents were quite satisfied regarding the quality of service, 18 (51.4%), 8 nurses were still found to be less satisfied regarding the quality of service at the Hemodialysis Installation (22.9%). 9 Nurses satisfied (25,7%). It can be concluded that the hemodialysis nursing care service has been carried out well.

Table 4. Relationship between Nurse Workload and Service Quality in the hemodialysis room at Dr Soetomo Hospital, Surabaya in February 2024

Nurse	Service Quality					Total		
Workload	less Satisfied		Quite Satisfied		Satisfied			
_	f	%	f	%	f	%	f	%
Light	4	66,7	0	0,00	2	33,3	6	100%
Medium	4	18,2	18	81,8	0	0,00	22	100%
Heavy	0	0,00	0	0,00	7	100	7	100%

Based on the table above, explains the relationship between nurse workload and service quality. The light workload showed that 4 nurse feeling less satisfied with the Light quality (66,7%). Meanwhile, nurses' medium workload was 4 to feel Less satisfied with the quality of service (18,2%). Also, the heavy workload showed that almost half resulted in the 18 nurse feeling Medium satisfied with the Quite quality of service (81,8%). information on hypothesis analysis using Spearmen rho on workload and service quality of nurses at the Hemodialysis Installation at Dr. RSUD. Soetomo Surabaya. Based on the results of the spearmen rho, shows the p value of nurses' workload (0.000) This shows that the p-value is <0.05 and is declared significant so H0 is rejected and the hypothesis in this study (H1) can be accepted at a significant level of p-value <0.05 and 0.01. This can mean that there is a relationship between the workload of nurses and the quality of service in the Hemodialysis Installation

## **DISCUSSION**

# Workload of Hemodialysis Installation Nurses

Based on the result, explains information on workload variables at the hemodialysis installation at Dr. RSUD. Soetomo Surabaya. Almost all nurse respondents stated that their workload was in the medium category, 22 people (62.9%). Meanwhile, 6 nurses stated their workload was in the light category (17.1%) and 7 nurses stated their workload was heavy (20.0%). It can be concluded that

the nurses at the hemodialysis installation at RSUD Dr. Soetomo Surabaya have a workload in the moderate category which tends to be heavy.

This research shows that nurses who have a light workload are nurses aged 31-40 years and whose length of work is over 15-21 years. Apart from that, nurses with a heavy workload have less than 5 years of work experience. Education also shows that there is a difference between D3 and S1, mostly held by nurses with a light workload.

The workload of hemodialysis nurses is different from the workload of nurses in general. According to researchers' assumptions, hemodialysis nurses have a light workload because they have more knowledge, motivation, and a balance between the number of nurses and patients <sup>(11)</sup>. Usually, nurses have a high workload but provide good performance in carrying out treatment actions on patients because of individual factors that the nurses themselves have such as skills, abilities, and motivation <sup>(12)</sup>. And this also does not escape the supervision of the head of the room and demands from the hospital which requires nurses to always provide quality nursing care in accordance with the hospital's vision and mission <sup>(13)</sup>.

# **Quality of Hemodialysis Installation Services**

Based on the results of research, explains information on service quality variables at the Hemodialysis Installation at Dr. RSUD. Soetomo Surabaya. Almost all patient respondents were quite satisfied regarding the quality of service, 18 (51.4%), 8 nurses were still found to be less satisfied regarding the quality of service at the Hemodialysis Installation (22.9%). 9 Nurses satisfied (25,7%). It can be concluded that the hemodialysis nursing care service has been carried out well.

This research is in line with <sup>(16)</sup>, stating that patient satisfaction is a level of feeling from the patient that arises as a result of the performance of health services obtained after comparing it with what they expected, which is influenced by factors such as age, gender, and educational background. Older individuals tend to show a higher level of satisfaction than younger patients because older people tend to be receptive and tactful in responding to problems<sup>(14)</sup>. The results of the research were that the average patient age was 46.7 years, including early elderly, at this age the decline phase had begun to occur, both physical and cognitive decline. The condition of some organ functions is starting to decline, the immune system is increasingly weakening so that if you don't take care of your health you will easily experience health problems, most of which require hospital treatment. However, maintaining health through regular health checks is important at all ages, so that health can be maintained and one does not get sick easily, especially at the age of entering the elderly<sup>(15)</sup>. Women experience more health problems both in urban and rural areas. Most health problems occur in women, especially in old age, so in this study, the majority of respondents who were hospitalized were women. However, maintaining health is very important for both men and women through regular health checks<sup>(16)</sup>.

Researchers assume that almost all of the patient respondents expressed satisfaction regarding nursing services during treatment in the hemodialysis room. This shows that nurses have provided services in accordance with service standards, primarily meeting the needs and satisfaction of patients

and families through information and action. The patient's needs, in this case, are the need for complete, precise information, and an explanation of each action that is able to reassure the patient and build mutual trust with the patient<sup>(17)</sup>.

# Relationship between Nurse Workload and Service Quality in Hemodialysis Installations

Based on the results of the regression test, shows that there is a relationship between nurses' workload and the quality of service in hemodialysis installations with a p-value of 0.000. This shows that the p-value is <0.05, so it is declared significant and the hypothesis in this study can be accepted. The regression coefficient value (B) shows negative results on nurse workload, meaning that the relationship between nurse workload and service quality is not in line. If the workload of nurses is high, the quality of hemodialysis services perceived by patients will be satisfied. On the other hand, the workload of nurses is heavy, so the quality of hemodialysis services is felt by patients to be less satisfied. The workload is a difference between worker capacity and the job demands that must be faced (Rohmia, 2019). Nurse workload is the amount of work that must be carried out beyond the limits of the nurse's capabilities. The workload felt by nurses arises due to internal factors that arise from within the body and external factors that arise from outside the nurse's body (10).

Research result, explaining that workload is related to the quality of service in hemodialysis installations<sup>(15)</sup>. This is due to an imbalance in the number of patients and actions with the duties and actions hemodialysis nurses carry out for patients. This imbalance causes nurses to take action quickly and precisely without caring enough about patients.

Nursing workload is the number of nursing staff which is not proportional to the number of patients being cared for, direct, or indirect nursing activities and health education as well as the average time and frequency of actions required by patients. Workload analysis is also an effort to calculate the workload on a work unit by adding up all the workloads and then dividing individual work capacity per unit of time. The workload can be seen from the activities or activities carried out by staff during working time, including direct activities, indirect activities, and other activities such as personal activities and unproductive activities. Direct nursing activities are activities carried out on patients and their families, including communication with patients and their families, examining the patient's condition, measuring vital signs, nursing actions or procedures and treatment, nutrition and elimination, patient hygiene, mobilization, transfusion, patient handover, specimen collection for laboratory examination. Indirect nursing activities such as: documenting assessment results, making nursing diagnoses, preparing interventions, documenting nursing actions that have been carried out, documenting nursing evaluation results, collaborating with doctors regarding therapy/visit programs, preparing patient status, preparing laboratory/radiology examinations, prepare tools for carrying out nursing forms for actions/examinations or special actions, tidy up the patient's environment, carry out/check emergency tools and medicines, coordinate/consult with other health teams, hold/participate in pre and post conferences, attend nursing/medical team meetings, follow nursing discussions/scientific nursing and

428

medical activities, providing guidance in implementing nursing actions, communicating about patient medications with the pharmacy, sending/receiving patient news via telephone and reading patient status. Personal activities of nurses such as praying, eating, drinking, personal hygiene, sitting at the nurse station, changing clothes, and going to the toilet, and non-productive activities such as watching television, reading newspapers, chatting, telephone for personal matters, going outside/going for personal or family purposes, arrive late and leave earlier than scheduled. The workload of nurses in the hemodialysis room experience a light workload because the number of hemodialysis nurses is proportional to the number of patients being treated at the time the observation was carried out and if seen based on the data, there are 35 nurses who have received hemodialysis training certificates so the level of difficulty or complexity in working is low.

Nurse workload is in accordance with the research questionnaire by Izzata, Nursalam, and Fitryasari<sup>18)</sup>, nurse workload is divided into physical aspects and psychological aspects. The physical aspect is the workload that arises due to physical activity carried out by nurses. The research was conducted by researchers in the children's inpatient room at RSUD Dr. Soetomo Surabaya, the physical aspects found include observing patients during working hours, for example checking the patient's vital signs (blood pressure, respiratory rate, pulse, patient temperature), the many and varied jobs that must be done for the patient's safety, for example helping to lift patients having difficulty in sitting/standing/walking activities and helping patients to go to the bathroom, continuous direct contact between nurses and patients in the inpatient room, inadequate nursing staff in the inpatient room compared to the patient, sometimes unbalanced knowledge and skills of nurses with the demands of the job carried out, so that nurses feel burdened by existing physical activities. In addition, nurses must operate dialysis machines and monitor patients continuously.

This research shows that the heavy workload of nurses causes the quality of service that patients feel is adequate. The lighter physical workload will improve the quality of service. This research is in line with previous research, that a heavy physical workload will reduce nurses' job satisfaction and a light physical workload tends to increase nurses' job satisfaction (18). Based on research conducted by Lehto, the physical workload in question is demanded from unpredictable schedules, excessive cases of illness, very challenging patient situations due to chronic disease conditions, and physical fatigue that can interfere with the nurse's ability to provide optimal care because it occurs. job dissatisfaction. Physical workload will affect nurses' job satisfaction, which can reduce or increase nurses' job satisfaction in hospitals<sup>(19)(20)</sup>.

#### CONCLUSIONS AND RECOMMENDATIONS

The workload of hemodialysis installation nurses is in the medium category, especially in terms of psychological workload. Almost half of the nurses in this study had moderate spiritual intelligence. Almost all patient respondents were satisfied with the quality of service at the Hemodialysis Installation. There is a relationship between the workload of nurses and the quality of service in the Hemodialysis Installation. There is a relationship between nurses' spiritual intelligence and the quality

of service in the Hemodialysis Installation. There is a relationship between nurse workload and spiritual intelligence with the quality of service in the Hemodialysis Installation, while the factor that has the greatest impact on patient satisfaction regarding hemodialysis nursing services is the nurse's workload. Hemodialysis nurses can increase spiritual intelligence in providing nursing care through training and workshops so that the implementation of nursing services can be optimal. This will of course have an impact on the treatment process which the patient feels will be more satisfying. Hospital leaders and nursing managers can pay attention to the level of workload and caring of hemodialysis nurses in providing nursing care by providing training and self-reflection through refreshing or outbound activities. Apart from that, nursing management can consider the number of hemodialysis room nurses by knowing the workload in implementing nursing care services in the hemodialysis installation.

It is hoped that future research will be able to conduct experimental research using a quasiexperimental approach in reducing nurses' workload and increasing the spiritual intelligence of nurses in hemodialysis installations.

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