

The Influence of Workload, Work Stress, and Work Motivation towards Five Moment Hand Hygiene Obedience for the Nurse in Muhammadiyah University Hospital Malang



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ABSTRACT: Hand hygiene is crucial and should be practiced consistently. Nurses who work in hospitals must do five moments of hand washing. Washing hands will prevent the transmission of diseases and microorganisms. Nurses often experience workload and work stress, especially in inpatient rooms. Lack of nursing staff and fatigue are the main factors that trigger this. With nurses' workload and work stress in hospitals, there needs to be work motivation for nurses to live healthily by complying with the five moments of hand washing in hospitals. This study aims to determine the effect of workload, work stress, and work motivation on compliance with the five moments of hand hygiene. The design of this study used cross-sectional research with a group with only one measurement time. The population of this study consisted of nurses in the inpatient room at the University of Muhammadiyah Malang Hospital. The sample used total sampling, namely all 74 nurses who were already employees in the inpatient room of the University of Muhammadiyah Malang Hospital. The percentage result of the influence of workload (X1), work stress (X2), and work motivation (X3) on compliance with five-moment hand hygiene (Y) is 57.1% (Adj R square). In comparison, the remaining 42.9% is influenced by other independent variables that were not studied.

KEYWORDS: Workload, Work Stress, Work Motivation, Nurses, Compliance, Five Moment Hand Hygiene, Muhammadiyah University Hospital Malang.

I. INTRODUCTION

Healthcare professionals need to keep their hands clean by washing their hands to avoid HAIs (Health Care-Associated Infection). According to WHO (2009), HAIs are defined as infections that patients get due to indications of non-infectious diseases that occur 48 hours after the patient is admitted to the hospital. HAIs can help patients get medical treatment longer in the hospital. In Indonesia, there is a lot of data about the rate of hand-washing obedience among healthcare professionals, especially nurses. Hence, washing hands is a behavior that cleans hands from disease-causing microorganisms. According to WHO (2009), washing hands with six steps and washing hands with the correct procedure can decrease nosocomial infections in the hospital.

Oktaviani (2020) found that washing hand obedience for nurses in Hermina Galaxy Hospital only gets 32%, which is lower than the standard. The research also found that washing hand obedience was affected by age and years of service. Conversely, Diantoro (2021) found that washing hand obedience significantly affected nosocomial infection. Especially the correct six-step washing of hands in five moments can prevent infection.

Nurses are healthcare professionals who work in the hospital and perform their tasks continuously for 24 hours. Nurses work catering for unhealthy people, which is patient; therefore, the mental health of the nurse needs to be maintained. Hence, if the nurse experiences an excessive workload, it will grow into stress and affect their obedience to washing hands. On the other hand, the nurse's tasks include providing nursing care to help patients recover and doing important work, such as counseling clients, a nursing service manager, and task executor within certain limitations.

Nursing care includes assessment, diagnosis, planning, implementation, and evaluation of nursing; these five aspects can help nurses provide good quality services in the nursing field. Therefore, excessive workload and the imbalance of nurses can trigger stress and other psychological conditions. Workload is a nurse's skill to carry out tasks and complete responsibilities within a particular time (Nursalam, 2014). Meanwhile, Handayani (2023) stated that more than half of the nurses are less obedient when washing their hands; on the other hand, some nurses do not have great knowledge and have excessive workloads. Hence, the nurses' workload needs to be noticed more so that hand hygiene can be implemented according to the procedure standard.

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The implementation level of nurse's hand hygiene still needs to be higher due to many factors, such as excessive workload and work stress. Hence, stress is a psychological and emotional reaction that occurs when someone feels that their abilities have reached their maximum limit. Perz-Fransisco et al. (2020) said that high workload and high work stress, in the long run, could affect nurses' skills in preventing the spread of disease. Effendy (2021) said there is a significant influence between workload, work stress, and washing hand obedience when the COVID-19 pandemic hits.

A preliminary study at Muhammadiyah University Hospital Malang acquired data about washing hand obedience, which is still low. Approximately there is only 57% of nurses are obedient in washing hands; hence, nosocomial infection in the hospital still high. This research focused on Five-Moment Hand Hygiene; therefore, the preliminary study, especially for five-moment hand hygiene, only covers 39% of the nurses, which is far from optimal. From the preliminary interview, some nurses in the wardroom at Muhammadiyah University Hospital Malang feel increasing in their workload because of the lack of nurses. The comparison between the number of nurses and the number of patients needs to be balanced. Therefore, the task is too much, and the provision of nursing care could be more optimal. Hence, the increasing workload is also followed by the increase in the nurse's work stress and psychological state. Excessive workload can affect work stress, affecting hand hygiene obedience to prevent infection.

In Muhammadiyah University Hospital Malang, the supervision from the IPCN (infection Prevention and Control Nurse) nurse is still lacking. Therefore, it makes the nurses in the wardroom feel like there is no surveillance so that they can ease up their obedience. On the other side, the lack of awareness from nurses is also a reason for the low motivation of nurses to carry out infection prevention and control efforts that are compliant and correct. Nurse motivation is encouragement from an individual, consciously or unconsciously, to reach goals (Nursalam, 2020; Sinaga et al., 2022). Hence, there is no continuous socialization and education from the organization, causing the lack of nurse motivation in the wardroom to implement infection prevention and control efforts by carrying out proper hand hygiene.

Based on the data in Muhammadiyah University Hospital Malang shows that there are five ward rooms with 17-20 nurses, which per 1 work shift consist of 4-5 people; hence, the patients are about 30-35 on average. That condition is considered an excessive workload for the nurse and becomes the most substantial reason washing hand obedience is still not optimal. Based on the problem and preliminary study data, this research will focus on the influence of workload, work stress, and work motivation towards five-moment hand hygiene obedience for the nurse in Muhammadiyah University Hospital Malang.

II. LITERATURE REVIEW

Work Load

The workload is a task given to the staff or worker that must be finished in a certain time using the skill and ability that the individual has (Munandar, 2011). According to Law of Health 36 in 2009, the workload is a multiplication between work and time and the value that an organization/unit needs to do. In this research, nurse workload is a task or nursing action that must be done at a particular time to achieve great quality nursing care services. Maulidina (2022) found that an excessive workload will decrease the quality of the work, patient complaints, and decrease in attendance rate. Therefore, workload needs to be maintained well periodically so that it will not overburden the workers. In this research, the indicator of workload, according to Nursalam (2012), consists of working conditions, working time, and achieved target.

Work Stress

According to Cartwrite and Coper in Mangkunegara (2009), work stress is defined as a consequence of every action and environment that can result in excessive psychological and physical stress on a person. Stress can be affected by many things, according to Robbins (2008), such as organizational factors, environmental factors, such as the lack of support from the surrounding environment, and individual factors or personalities of the workers themselves. In this research, the indicator of work stress, according to Cooper in Handoko (2008), consists of physical, emotional, intellectual, and interpersonal.

Work Motivation

Sutermeister in Aswat (2010), around 80-90% of workers rely on motivation to work, and only 10-20% depend on their ability. Work motivation for nurses is essential because, with high drive motivation, nurses can work hard and produce great productivity. In this research, indicators of work motivation, according to Sedarmayanti (2015), consist of salary, supervision, responsibility, achievement, and success.

Five Moment Hand Hygiene

Hand hygiene, according to WHO (2009), is a procedure for cleaning hands using running water with antiseptic soap or alcohol-based hands with chlorhexidine. In the hospital, there are five moments for washing hands, according to WHO (2009), that must be done to prevent nosocomial infection. The five-moment hand hygiene consists of before touching a patient, before

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an aseptic procedure, after a procedure or body fluid exposure risk, after touching the patient, and after touching the patient's surroundings.

III. METHODS

This research uses correlation with cross-sectional design. The research aims to find and explain relationship between variable, also predict and examine the theory. Hence the cross-sectional design aims to learn the relationship between variables which collected in one point in a particular time. Therefore, the research uses quantitative method and consist of three independent variables: Workload (X1), Work Stress (X2) and Work Motivation (X3), also one dependent variable Five Moment Hand Hygiene Obedience (Y1).

The sampling method used non-probability methods which using all of the population and found 74 respondents which are nurses in the non-intensive care room in Muhammadiyah University Hospital, Malang. The data collection was done using a questionnaire with the Likert scale. Moreover, the data analysis includes Univariate Analysis to describe the characteristics of each variable in the research, Bivariate Analysis to know the relationship between two variable which are independent and dependent variable using Spearman Rank Test, last is Multivariate Analysis to test the logistic regression.

IV. RESULT

A. Respondent characteristics

Initially, the questionnaire was distributed to 74 respondents which are the nurses in the non-intensive care in Muhammadiyah University Hospital, Malang. Furthermore, the characteristics of the respondent explain in Table 1:

Table 1. Respondent Characteristics

Characteristics	Category	N	Precentage
Gender	Female	53	71.6%
	Male	21	28.4%
Age	25-28 years old	13	17.6%
	29-32 years old	38	51.4%
	33-36 years old	23	31.1%
Education	High School	0	-
	Diploma	0	-
	Bachelor	74	100%
Length of Work	1-3 years	18	24.3%
	4-6 years	35	47.3%
	7-9 years	21	28.4%
Marital Status	Married	53	71.6%
	Single	21	28.4%
Salary	Rp2.000.000-2.500.000	19	25.7%
	Rp2.600.000-3.100.000	27	36.5%
	Rp3.200.000-3.700.000	28	37.8%

Table 1 indicate that most of the respondent are female, 29-32 years old, already work in Muhammadiyah University Hospital for 4-6 years, already married and the salary are in the range of Rp3.200.000-Rp3.700.000. Therefore, all of them are bachelor.

B. Classic Assumption Test

This study has 3 assumption tests. First is normality test using Kolmogorov-Smirnov test found that the residual normality value from workload (X1), work stress (X2), and work motivation (X3) towards five moment hand hygiene obedience (Y1) is 0.078 with Sig. value 0.200 > 0.05, hence the data in this research is normal, and the P-Plot is scattered in line with the diagonal. Second is multicollinearity test, found that all of the tolerance value are bigger than 0.1 and the VIF value is smaller than 10, so the regression free from multicollinearity. Last is heteroskedasticity test found that the data scattered around and there is no particular pattern, therefore, there is no heteroskedasticity in this data.

C. Univariate Analysis

In this research using univariate analysis to analyse the variable independently. Therefore, univariate analysis explained using descriptive analysis to know the distribution of the answer, explains as follows:

a. Nurse Workload

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The questionnaire result shows that most of the respondent not considering these 3 items as a workload, including: conduct client observation in the working hours, everyday is a right decision, and responsibility in carrying out patient care. Hence, the heaviest workload for the nurse in Muhammadiyah University Hospital including 3 items, such as: lack of nursing staff in the room compared to the number of clients, everyday facing various patient's characteristics, and continuous direct contact between nurses and patients during working hours.

b. Nurse Work Stress

The questionnaire result shows that most of the respondent hardly felt heart palpitations while working, increased respiratory rate, increased pulse rate, overeating, loss of appetite, stomach aches, tension, and bloating. Instead, most of the respondent always feel pressured because of the work and their body feels exhausted.

c. Nurse Motivation

The questionnaire result shows that most of the respondent answer There are always other intensives other than the salary from the hospital. Supervision always helps and gives good solutions. The nurse always does the work as responsibly as possible and achieves success in every task.

d. Five Moment Hand Hygiene Obedience

The questionnaire result shows that most of the respondent didn't do five moment hand hygiene before direct contact with patient and before aseptic procedure. Meanwhile, most of them always do the five-moment hand hygiene after direct contact with patient.

D. Bivariate Analysis

In this research found that bivariate analysis between workload, work stress, work motivation towards five moment hand hygiene obedience analyses with Pearson correlation. Found that between work load and five moment hand hygiene there are significant effect. Next correlation between work stress and five moment hand hygiene there are significant effect, but towards negative correlation. Last, between work motivation and five moment hand hygiene also a significant effect towards positive correlation.

E. Hypothesis Test

Table 2. Hypothesis Test

Hypothesis	Coefficient	t	Sig.	Summary
Direct Effect				
Workload (X1) -> Five moment hand hygiene obedience (Y)	-0.099	-3.464	0.001	Significant
Work Stress (X2) -> Five moment hand hygiene obedience (Y)	-0.061	-3.218	0.002	Significant
Work Motivation (X3) -> Five moment hand hygiene obedience (Y)	0.101	3.772	0.000	Significant

From the result found that workload (X1), work stress (X2), and work motivation (X3) all simultaneously influence five moment hand hygiene obedience (Y). Meanwhile, the workload significantly influences five moment hand hygiene obedience partially with coefficient value -0.099 (negative), hence if the workload is increasing the five-moment hand hygiene obedience is decreasing. As well as the work stress significantly influence five moment hand hygiene obedience with coefficient value -0.061 (negative) which is if the work stress increasing, the five-moment hand hygiene obedience decreasing. Last, work motivation significantly influences five moment hand hygiene obedience with coefficient value 0.101 (positive), which is if the work motivation is increasing, the five-moment hand hygiene obedience also increasing.

F. Discussion

1) Nurse Workload effect towards Five Moment Hand Hygiene Obedience in Muhammadiyah University Hospital

Based on the results show that nurse workload significantly influences five-moment hand hygiene obedience; hence, the nurse workload includes working conditions, working time, and achieved target. From the questionnaire, it can be concluded that the item "lack of nursing staff in the room compared to the number of clients" had the highest average. However, in the negative score, it means that if the workload is increasing, the five-moment hand hygiene obedience will decrease. It aligns with Pabebang (2021), who found that there is a significant relationship between workload and hand hygiene obedience. Several things influence a person's compliance with hand hygiene, including the workload. This is influenced by the awareness of each nurse, namely, not paying attention to hand hygiene in carrying out health services.

2) Nurse Work Stress effect towards Five-Moment Hand Hygiene Obedience in Muhammadiyah University Hospital

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In this research, nurse work stress significantly influences five-moment hand hygiene. From the indicators, physical, emotional, intellectual, and interpersonal, the respondent mostly answers "always" in the item "Nurse always feels pressured because of the work" and "The nurse body always feels exhausted." It is in line with Effendy (2022) that in the COVID-19 era, work stress can significantly affect hand hygiene obedience. During the period of the pandemic, the nurse plays an important role; therefore, the workload is very high for patient safety, and the nurses can feel exhausted physically and mentally, which will affect their obedience to hand hygiene.

- 3) Nurse Work Motivation effect towards Five-Moment Hand Hygiene Obedience in Muhammadiyah University Hospital
Based on the result, work motivation can significantly influence five-moment hand hygiene. From all the indicators, including salary, supervision, responsibility, achievement, and success, the highest average is in the salary indicator. Because a high salary will increase the nurse's motivation to work, the item "there are other incentives other than the main salary from the hospital" holds the highest score. It is aligned with Pabebang (2021), who found a significant relationship between motivation and hand hygiene obedience. Therefore, the high motivation to work because of the high salary will increase nurse's awareness of five-moment hand hygiene, and vice versa; the low motivation will make the nurse less obedient.
- 4) Five-Moment Hand Hygiene Obedience
The distribution of five-moment hand hygiene obedience found that most respondents still do not do the five-moment hand hygiene, especially when "before contact with the patient" and "before an aseptic procedure". Therefore, most of the nurses always do hand hygiene "after contact with the patient." From the data, the number of obedience is still low because of the workload and high work stress when working on the shift. Most of them feel a lack of nursing staff and stress due to work and exhaustion, which affects their obedience to hand hygiene.

V. CONCLUSION

1. Workload significantly influence five moment hand hygiene obedience in Muhammadiyah University Hospital Malang. The less of the workload will increasing the level of obedience, therefore in the research found that the workload still high so the obedience is still lack. One of the factors of the excessive workload is because the lack of nursing staff compares to the patient.
2. Nurse work stress also significantly and negatively influence five moment hand hygiene obedience in Muhammadiyah University Hospital Malang. It's found that the higher work stress, less obedient the nurse in hand hygiene. One of the highest factors of the work stress is because the nurse exhausted physically and mentally.
3. Nurse work motivation significantly influence five moment hand hygiene obedience in Muhammadiyah University Hospital Malang. Found that the correlation is in positive direction, which is if the motivation is high then the five-moment hand hygiene obedience is also increasing.
4. It can be concluded that the level of nurse obedience in Muhammadiyah University Hospital Malang still low, especially in five moment hand hygiene. Also, workload, work stress, and work motivation can simultaneously influence five moment hand hygiene for nurse in Muhammadiyah University Hospital Malang.

Based on the research results obtained, there are several suggestions for improving Five Moment Hand Hygiene Obedience in Muhammadiyah University Hospital, Malang

1. The calculation of the nursing staff needs to re-analyze according to the workload in every room. Because the right number of nurses compare to the patient can help the nurse to ease the workload and work stress.
2. The supervision from IPCN and IPCLN in Muhammadiyah University Hospital Malang need to be done periodically and as often as possible to monitor the nurse to be obedient in five moment hand hygiene.
3. Training on Infection Control and Prevention (PPI) needs to be done continuously so the obedience behaviour in five moment hand hygiene can be implemented correctly all the time.

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