

**Original Research****Knowledge, Attitude And Compliance Of Health Workers In Handwashing During The COVID-19 Pandemic****Hendratna M Tedjaseputra<sup>1\*</sup>, Dyaning P Mahargiani<sup>2</sup>, Septiana H Mardiyati<sup>3</sup>, Abdul Ghoni<sup>4</sup>**<sup>1,2,3,4</sup> Unit Medical of Rumah Sakit Umum Pusat Surakarta, Indonesia**ABSTRACT**

**Background:** *This study aims to determine the relationship between knowledge and attitudes, as well as the level of compliance in washing hands at five moments for health workers.*

**Methods:** *This research uses quantitative research methods with a cross-sectional approach. The sampling technique used cluster sampling with a total sample of 106 health workers. The instruments used in this study were a knowledge questionnaire, an attitude questionnaire, and a hand hygiene audit observation sheet containing a checklist table of five moments of hand washing adopted by the World Health Organization (WHO). The Chi-square test was used to analyze the relationship between variables.*

**Results:** *The results of the knowledge of health workers are good for as many as 32 people (29.1%), enough for as many as 50 people (45.5%), and less than as many as 28 people (25.5%), while the attitude shown supports (100%) all efforts to reduce health problems. There is a relationship between knowledge and the attitude of health workers in washing hands at 5 moments and 6 steps by getting a value of  $p = 0.000$  ( $p < 0.05$ ).*

**Conclusion:** *Most health workers have the knowledge, attitude, and compliance to do good hand washing during the COVID-19 pandemic, and these factors are interrelated.*

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**INTRODUCTION**

Infectious diseases related to health services or Healthcare Associated Infections (HAIs) are one of the health problems in various countries in the world, including Indonesia (Hurvitz, Zivbaran, & Tomer, 2022). In the Asian Pacific Economic Committee (APEC) or Global Health Security Agenda (GHSA) forum, infectious diseases related to health services have become the agenda discussed. This shows that the HAIs caused have a direct impact on the country's economic burden (Benbow, 2022) (Martonic, 2022).

Healthcare-Associated Infections (HAIs) are infections that occur in patients during treatment in hospitals and other healthcare facilities where there is no infection and incubation period at the time of admission, including infections acquired in the hospital but appearing after the patient returns home, as well as infections due to work for the home staff. Sick people and health workers are involved in the delivery of healthcare services in healthcare facilities (RI, 2017). The impact of HAIs can cause an increase in patient morbidity and mortality.

Besides that, it can cause other losses in the form of extended days of hospitalization (length of stay), increased care and treatment costs, decreased service quality, decreased hospital image, insecurity and discomfort. For patients, the risk of physical, mental, and socio-economic disabilities is high and can result in lawsuits (Singer, Rodriguez, Garcia, Nutt, & Merengwa, 2022). Therefore, the infection prevention and control program (PPI) is very important and must be implemented in every healthcare facility (RI, 2017).

The National Standard for Hospital Accreditation (SNARS) Edition 1.1 states that hospitals establish regulations to use and implement evidence-based hand hygiene guidelines to reduce the risk of infection related to health services (Patient Safety Standard 5) (RI, 2017). Hand hygiene is one of the 11 standard precautions that must be carried out. Hand hygiene using soap and disinfectants is an effective means to prevent and control infection (SNARS Edition 1.1 Standard PPI 9). Hand hygiene compliance is one of the hospital's quality indicators (Guideline Quick View: Hand Hygiene, 2022).

The point of eliminating the transmission of infection is to adhere to proper hand hygiene (Evans, 2022) (Le et al., 2022). Hand hygiene guidelines that apply internationally can be obtained from WHO. Hand hygiene guidelines can be achieved if healthcare workers comply with 6 steps and 5 moments of hand washing, namely before contact with patients, before performing aseptic actions, after contact with patients, after contact with patient's blood and body fluids, and after contact with the patient's surroundings (Diefenbacher et al., 2022) (RI, 2017). Good hand-washing habits show readiness in dealing with the COVID-19 Pandemic (Setyorini, Ardesa, & Darmawan, 2022).

The research by Caesarino, Wahjono, & Lestari, (2019) at Hospital X in Semarang, found that 62.2% of non-compliance with hand hygiene was found. Based on hand hygiene audit data at the Central General Hospital (RSUP) Surakarta in January 2020, it was found that hand hygiene compliance of health care workers was 67%, while the National Quality Indicator limit was 85%, so that planning, education, data collection (audit), and evaluation were necessary to improve the compliance of officers in performing hand hygiene. The purpose of the study is to determine the relationship between knowledge and attitudes as well as the level of compliance in washing hands at five moments for health workers.

## **MATERIALS AND METHOD**

This research uses quantitative research with a cross-sectional approach. This research was conducted at the General Center Hospital Surakarta (RSUP Surakarta) in April-November 2021. The total population is 144 people who provide health services. The technique of determining the sample is purposive sampling. That is anyone who coincidentally meets the researcher can be used as a sample.

If it is considered that the person who happened to be met by chance is appropriate as a data source, as many as 106 people (slovin formula). The instruments

used in this study were a knowledge questionnaire, an officer's attitude questionnaire, and a hand hygiene audit observation sheet containing a checklist table 5 moments of washing hands. The validity and reliability test of the research instrument was carried out before the research was carried out. The questionnaire instrument was tested for validity using EXCEL with the Pearson Product Moment Correlation technique test with Alpha Cronbach's alpha. Validity and reliability tests have been carried out on officers with a sample of 14 people. The Chi-square test was used to analyze the relationship between variables (Dharma, 2013).

## RESULTS

Based on table 1 above, it can be seen that the subjects in this study consisted of male subjects as many as 27 people (24.5%) and female subjects dominated with a total of 83 people (75.5%) of the total respondents. Based on table 1, it can be seen that the subjects in this study had an average age of 36.93 years, with an age range of 39 years, a minimum age of 23 years, a maximum age of 62 years, and a standard deviation of 9.46. It can be seen that the subjects in this study, high school education level is 1 person (0.9%), diploma 3 years is 70 people (63.6%), the bachelor is 29 people (26.7%), and the master is 10 people (9.1%).

The subjects in this study were 18 people in the medical profession (16.4%), 56 people in the nursing profession (50.9%), and 36 people from other professions such as midwives, laboratories, and radiographers (32.7%). The average length of work for the subject is 9.79 years, the minimum length of work is 1 year, the maximum length of work is 34 years, and the standard deviation is 9,054.

**Tabel 1.** Characteristics of respondents

<b>Variabel</b>	<b>Frequency</b>	<b>Percent (%)</b>	<b>Min-Max</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>Gender</b>					
Male	27	24.5			
Female	83	75.5			
<b>Level of education</b>					
Senior High School	1	0.9			
3 year diploma degree	70	63.6			
Bachelor degree	10	26.4			
Master degree	29	9.1			
<b>Profession</b>					
Doctor	18	16.4			
Nurse	56	50.9			
Other	36	32.7			
<b>Age</b>			23-62	36.93	9.456
<b>Length of work</b>			1-34	9.79	9.054

Based on table 2, it can be seen that among the subjects in this study, the level of knowledge of health workers was good for as many as 32 people (29.1%), enough for 50 people (45.5%), and a lack of knowledge for as many as 28 people (25.5%). For all subjects in this study, the attitude shown by health workers who provide services to patients from 110 respondents supports (100%) all efforts to reduce the number of HAIs in Surakarta Hospital.

**Tabel 2.** Knowledge level in doing hand washing

Variabel	Frequency	Percent (%)
<b>Knowledge</b>		
Good	32	29.1
Enough	50	45.5
Less	28	25.5
<b>Attitude</b>		
Support	110	100

The results of the analysis can be seen that there is a relationship between the knowledge and attitudes of health workers in washing hands at 5 moments and 6 steps at the Surakarta Central General Hospital, with a p-value of 0.000 ( $p < 0.05$ ). Based on hand hygiene audit data at 5 moments for the July-October 2021 period with the number of hand washing opportunities at 821, it was found that the hand hygiene compliance of health service workers was 56.273%, with details: compliance at moment 1 (before contact with the patient) was 39.5%, compliance at moment 2 (before performing aseptic procedures) as much as 38.76%, compliance at moment 3 (after contact with the patient's blood or urine) as much as 91.9192%, compliance at moment 4 (after contact with the patient) as much as 45,769%, and compliance at moment 5 (after contact with the patient's environment) as much as 92.4812%.

## DISCUSSION

Education means the guidance given by one person to another towards something so that they can understand. It is undeniable that the higher a person's education, the easier it is for them to receive information and, in the end, the more knowledge they have. On the other hand, if someone has a low level of education, it will hinder the development of a person's attitude toward receiving information (Capps, Updegraff, Foust, O'Brien, & Taber, 2022) (Kuniavsky, Lubanetz, & Chinnitz, 2022).

Educational factors also affect compliance behavior at 5 and 6 steps to washing hands correctly, where most of those who provide health services to the majority of patients have a diploma level. According to research from Puspasari, (2015), nurses with a Diplom 3-year education level during the educational process are more likely to get a lot of material and practical experience in hospitals when compared to nurses at the level of bachelor or senior high school nursing education. In addition to this, when interacting with patients, a PPA (Professional Care Provider) is required to always carry out self-protection efforts, namely by implementing practices for the prevention of nosocomial infections.

In addition, the level of contact with patients is often carried out by a nurse, where almost all care needs are carried out by nurses for 24 hours so that nurses get used to washing their hands every 5 moments (Evans, 2022). The factors that led to the application of hand washing for health workers at the Surakarta Hospital were the complete hand washing facilities, easy access to officers, good knowledge of officers, and awareness from within the officers. The knowledge of officers who provide good health services will trigger them to be more diligent in washing their hands. In addition, the working period also influences the behavior of a person.

The results obtained show that most have an average working experience of 9.79 years. This is in accordance with the report by Elia et al., (2022). Tenure can affect one's work experience, so the longer one works, the more expected that one has work

experience. A person with a longer working period indicates a person with more work experience compared to other coworkers.

So it can be concluded that the longer a person works, the more he masters the skills he does repeatedly every day and makes them a habit, such as washing his hands in five moments. Officers who have worked for a long time and make hand washing a very important thing will get used to doing it. Every day, wash your hands for five seconds (Keller et al., 2022).

The point of eliminating the transmission of infection is to adhere to proper hand hygiene. Based on hand hygiene audit data at 5 moments for the July–October 2021 period with a number of hand washing opportunities of 821, it was found that the hand hygiene compliance of health care workers at 5 moments was 56.273%, while the National Quality Indicator (SISMADAK) limit was 85%. This is supported by the fact that there is still a lot of knowledge among officers who are within the range of sufficient value of as many as 50 people (45.5%) and a lack of knowledge of as many as 28 people (25.5%), so it is necessary to have planning, education, data collection (audit), and evaluation to improve the compliance of officers in performing hand hygiene at hospitals.

## CONCLUSION

The level of knowledge of health workers has good value for as many as 32 people (29.1%), enough value for as many as 50 people (45.5%), and a lack of knowledge for as many as 28 people (25.5%). The description of the attitude of health workers in washing hands at 5 moments and 6 steps at the Surakarta Central General Hospital from 110 respondents supports (100%) all efforts to reduce the number of HAIs. The level of compliance of health workers in washing their hands at 5 moments with the number of opportunities to wash their hands was 821, and the hand hygiene compliance of health service workers was 56.273%, with details: compliance at moment 1 (before contact with patients) was 39.5%, compliance at moment 2 (before performing aseptic procedures) was 38.76%, compliance at moment 3 (after contact with the patient's blood or urine) was 91.9192%, compliance at moment 4 (after contact with the patient) was 45.769%, and adherence at moment 5 (after contact with the patient's environment) was 92.4812%.

There is a relationship between knowledge and the attitude of health workers in washing hands at 5 moments and 6 steps at the Surakarta Central General Hospital, with  $p$ -value = 0.000 ( $p < 0.05$ ).

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