

# **The Influence of Individual Characteristics, Knowledge and Attitude of Nurses Against the Safety Culture in Hospital**

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## **Abstract**

Safety culture is an important element which should be done by health officers in the line of duty. Nurse as one of the components of human resources in the hospital in carrying out their duties should be able to maintain the safety of themselves and the work environment of risk factors through the adoption of a culture of safety. This study aims to analyze the factors that influence the action of a culture of workplace safety for nurses in hospitals. This quantitative study using a sample of 174 nurses, the data were analyzed by descriptive and analytic with logistic regression test at the significance level  $\alpha$  of 0.05, to determine the relationship between variables and determine the variables that influence the safety culture simultaneously. This study found that the variables that influence the safety culture, namely knowledge ( $p=0.001$ ) and Attitude ( $p=0.001$ ), while the variable age ( $p=0.524$ ), sex ( $p=0.807$ ), education ( $p=0.723$ ), work period ( $p=0.695$ ) and employment status ( $p=0.685$ ) does not affect the safety culture. Cultural safety of nurses is influenced by the knowledge of and attitudes, while the variables of age, sex, education, period of employment and employment status did not influence the safety culture of the nurse in the hospital.

**Keywords:** Attitudes; Individual Characteristics; Knowledge; Nurses; Safety Culture

## **Introduction**

Safety and health at work is the right of every worker, as mandated in article 86 of Law Number 13 of 2003 concerning Manpower, it is stated that every worker / laborer has the right to obtain protection for: a) occupational health and safety; b) morals and decency; and c) treatment in accordance with human dignity and religious values. The implementation of work safety should be carried out in all industrial sectors, in order to protect workers, work tools, production materials/sources, and buildings from the risk of work accidents or explosions/fires. Hospitals as workplaces should implement safety as a culture for all hospital employees, even this safety culture does not only apply to employees but also applies to visitors who come to the hospital. Hospitals are health care institutions that organize comprehensive individual health services that provide inpatient, outpatient, and emergency services (Law No. 44 of 2009). Hospitals have the potential risk of hazards including physical, chemical, biological, ergonomic and psychosocial hazards (Permenkes 66 of 2016). Because there are risks of harm in hospitals, hospital management needs to make efforts to control these risks through safety culture for all employees. Safety culture is very important because a strong safety culture empowers organizations at all levels to understand and proactively control their risks to ensure the

safety of workers, patients and visitors. A weak safety culture puts the organization in danger of accidents due to its inability to understand and control the risks involved in performing work (Transit Advisory Committee for Safety, 2017). According to research by Serpil Aytac & Salih Dursun (2018) that safety culture has a positive effect on employee safety behavior, the results of this study also show that employee involvement, safety awareness, report culture, manager behavior are related to safety behavior. Baga and Brandoko's research (2017) found the results of SEM analysis showed that behavioral factors have a significant effect on work safety culture. Cases of work accidents reported at Putri Hijau Hospital in 2019 were four cases and in 2020 one case. For Covid-19 exposure cases until September 2020, there were 33 people with a percentage of 78.78% occurring in nurses but their workplace was not in the covid-19 patient care section. The results of observations in the field, officer compliance in using PPE is not according to standards. Based on these conditions, researchers are interested in conducting research on the influence of individual characteristics, attitudes and knowledge of nurses on work safety culture at Putri Hijau Medan Hospital. Work safety culture is important to be applied in every workplace in order to prevent occupational accidents and occupational diseases, both for hospital employees, patients, visitors and people who are in the hospital environment.

## Methods

This study is a quantitative study with an explanatory research design to determine the effect of individual characteristics, attitudes and knowledge of nurses on work safety culture in hospitals. Determination of the sample using the table amounted to 174 nurses. Data collection using a questionnaire adopted from Cooper (2001). Data were analyzed univariately, bivariate using the chi-square method and multivariate using logistic regression analysis at a significance level of  $\alpha$  0.05. This study aims to partially determine the relationship between individual characteristics, attitudes and knowledge of nurses with work safety culture and simultaneously examine the effect of individual characteristics, attitudes and knowledge of nurses on work safety culture in hospitals.

## Results

Table 1.1 Results of chi-square Bivariate Analysis

		Good		Very Good		<i>p</i>	OR	95% CI	
		n	%	n	%			Min	Max
Sex	Male	10	5,7	22	12,6	0.441	1,390	0,600	3,217
	Female	35	20,1	107	61,5				
Age	≤ 30	8	4,6	15	8,6	0.294	1,643	0,645	4,185
	> 30	37	21,3	114	65,5				
Education	D3	25	14,4	78	44,8	0.564	0,817	0,412	1,623
	S1	20	11,5	51	29,3				
Employee Status	CIVIL	34	19,5	93	53,4	0.652	1,196	0,548	2,613
	SERVANT Non-civil servants	11	6,3	36	20,7				
Length of Service	≤ 10	10	5,7	35	20,1	0.517	0.767	0.344	1,713
	>10	35	20,1	94	50,4				
Knowledge	Less	9	5,2	6	3,4	0.002	5,125	1,710	15,361
	Good	36	20,7	123	70,7				
Attitude	Strong	23	13,2	6	3,4	0.001	21,437	7,833	58,639
	Very strong	22	12,6	123	70,7				
Total									

Table. 1.2 Results of Multivariate Analysis of logistic regression

	Variable	Coefficient	<i>p</i>	OR (95% CI)
Step 1	Sex	0.408	0.524	1.390 (0,600-3,217)
	Age	0.137	0.807	1,643 (0,645-4,185)
	Education	0.164	0.723	0,817 (0,412-1,623)
	Employee Status	0.249	0.685	1,196 (0,548-2,613)
	Length of Service	-0.235	0.695	0,767 (0,344-1,713)
	Knowledge	2.044	0.001	5,125 (1,710-15,361)
	Attitude	3.243	0.000	21,437 (7,833-58,639)

## Discussion

The results of data analysis using the chi-square test partially at a significance level  $\alpha$  0.05 showed that knowledge ( $p = 0.002$ ) and attitude ( $p = 0.001$ ) had a relationship with work safety culture. While the variables of gender, age, education, employment status and length of work have no relationship with work safety culture because the results of bivariate analysis indicate a significance value greater than  $\alpha$  0.05.

The results of this study are in line with research Good Very Good  $p$  OR 95% CI n % n % Min Max  
 Sex Male 10 5,7 22 12,6 0.441 1,390 0,600 3,217 Female 35 20,1 107 61,5 Age  $\leq 30$  8 4,6 15 8,6 0.294 1,643  
 0,645 4,185  $> 30$  37 21,3 114 65,5 Education D3 25 14,4 78 44,8 0.564 0,817 0,412 1,623 S1 20 11,5 51 29,3  
 Employee Status CIVIL SERVANT 34 19,5 93 53,4 0.652 1,196 0,548 2,613 Non-civil servants 11 6,3 36  
 20,7 Length of Service  $\leq 10$  10 5,7 35 20,1 0.517 0.767 0.344 1,713  $>10$  35 20,1 94 50,4 Knowledge Less 9  
 5,2 6 3,4 0.002 5,125 1,710 15,361 Good 36 20,7 123 70,7 Attitude Strong 23 13,2 6 3,4 0.001 21,437 7,833  
 58,639 Very strong 22 12,6 123 70,7 Total Variable Coefficient  $p$  OR (95% CI) Step 1 Sex 0.408 0.524 1.390  
 (0,600-3,217) Age 0.137 0.807 1,643 (0,645-4,185) Education 0.164 0.723 0,817 (0,412-1,623) Employee  
 Status 0.249 0.685 1,196 (0,548-2,613) Length of Service -0.235 0.695 0,767 (0,344-1,713) Knowledge 2.044  
 0.001 5,125 (1,710-15,361) Attitude 3.243 0.000 21,437 (7,833-58,639).

Sentosa & Rahayu (2018) found that variables that have a causal relationship to the incidence of work accidents are attitude  $p$  value 0.001, training  $p$  value 0.001 and promotion  $p$  value 0.001. Dwiari & Muliawan's research (2019) found that attitude is the most significant individual factor influencing the implementation of respondents' OHSRS (adjusted PR = 1.59; 95% CI 1.11-2.30). Silaen, Baga & Brandako (2018) SEM analysis results show behavioral factors have a significant effect on work safety culture. Attitudes and knowledge of nurses are factors that influence work safety culture so that it needs attention from hospital management. (Cooper, 2001) effective leadership from senior management is a key feature of a positive safety culture as it determines how everybody else in the organization will view and act upon safety issues.

Based on statistical tests on the knowledge variable, the Odd Ratio = 5.125 (1.710-15.361) means that respondents who have good knowledge have a 5.125 times risk of not implementing a work safety culture compared to respondents who have very good knowledge. Knowledge in practice (how to act) is based on a way of thinking (knowledge, beliefs, and common values), so that organizational culture is forged gradually by interactions between organizational members over time, and this is closely related to the individual process

of applying organizational culture based on the knowledge possessed by nurses. From the statistical test of the attitude variable, the Odd Ratio value = 21.437 (95% CI = 7.833 58.639) means that respondents who have a good attitude have a 21.437 times chance of not implementing a health and safety culture compared to respondents who have a very good attitude. Attitude is a reaction or response that is still closed to a stimulus or object (Notoadmodjo, 1997).

Most of the more than 50% of respondents' attitudes were very good and could apply the K3 culture very well, so the respondents' attitudes could already accept the K3 policy in the Hospital. It can be interpreted that the respondents' attitudes can accept policies related to OSH culture because of the open response of the respondents so that they are able to implement the OSH culture. Attitude is closely related to work safety culture factors. This positive attitude is influenced by components such as thinking, feeling, and evaluation components and the values adopted by nurses that are closely related to safety (safety culture) (Cox and Cox 1991 in Cole et al 2013). In the application of safety culture, nurses are able to apply what is the basis that safety culture is something that must be done to reduce or prevent the number of accidents due to work.

## Conclusion

Safety Culture of nurses is influenced by the knowledge of and attitudes, while the variables of age, sex, education, period of employment and employment status did not influence the safety culture of the nurse in the hospital.

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