

## **INFLUENCING FACTORS THAT COMPLIANCE WITH NON-SMOKING AREA REGULATIONS IN THE WORKPLACE**

(Study in Public Health Centers at Paser District, East Kalimantan Province)

**Denny Affriyan Nur<sup>1</sup>, Husaini<sup>1</sup>, Mohamad Isa<sup>2</sup>, Roselina Panghiyangani<sup>3</sup>, Fauzie Rahman<sup>4</sup>**

<sup>1</sup>Master of Public Health Study Program, Faculty Of Medicine, Lambung Mangkurat University

<sup>2</sup>Department of Pulmonology and Respiration Medicine, Faculty of Medicine, Lambung Mangkurat University

<sup>3</sup>Faculty Of Medicine, Lambung Mangkurat University

<sup>4</sup>Department of Health Service Management, Public Health Study Program, Faculty of Medicine, Lambung Mangkurat University

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**Abstract--**Several regulations have been issued as a legal basis in the development of Non-Smoking Area in Indonesian including Non-Smoking Area Regulations No.03 2016 at Paser District, East Kalimantan Province. Based on the results of a rapid survey of clean and healthy living behavior in the workplace, especially in 19 Public Health Centers at Paser District, East Kalimantan Province in 2019, it is known that smoking indicators at workplace are still found as many as 19% of employees who violated the regulations. This research was an observational analytic study with a cross-sectional approach. The population in this study were all employees working in 19 Public Health Centers with a total sample of 56 people with smoking status. The sample is determined by the proportional simple random sampling technique. Research instrument a questionnaire. Used as descriptive and statistical data analysis using chi square test and multiple logistic regression tests. Chi square test results show there here significant influence between knowledge about Non-Smoking Area ( $p = 0.000$ ), smoking behavior ( $p = 0.021$ ), application of punishment ( $p = 0.008$ ), and infrastructure facilities ( $p = 0.003$ ) on compliance with Non-Smoking Area Regulations at the Public Health Centre at Paser District, East Kalimantan Province. The result of logistic regression analysis show that the infrastructure facilities variable has the most dominant influence ( $\exp. B = 15.783$ ).

**Keywords:** Non-Smoking Area regulations, compliance, knowledge, behavior, punishment, infrastructure

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*Correspondent Author: \*Denny Affriyan Nur*

### **I. INTRODUCTION**

WHO predicts that diseases related to smoking will contribute to health problems in the world. Of every 10 adults who died, 1 of them died because of cigarette smoke. According to WHO, in 2025 there will be around 650 million smokers in the world there contribute up to 10 million deaths per year. Similar to the study of Research and Development Department in 2015 showed that Indonesia

contributes more than 230,000 deaths due to consumption of tobacco products annually (Ministry of Health Indonesia, 2018). Smoking has the risk of causing various diseases or health problems that can occur both for smokers themselves and other people around them who do not smoke (passive smokers). Therefore it is necessary to take steps to safeguard cigarettes for health, including through the establishment of a Non-Smoking Area (Marchel, 2019).

Non-Smoking Area is a space or area that is declared prohibited for smoking or producing, selling, advertising and or promoting tobacco products (WHO, 2011). Several regulations have been issued as a legal basis in the development of Non-Smoking Area in Indonesia including Regulation on Non-Smoking Area Number 03 in 2016. Paser District Government applied it in the scope of the Regional Work Unit in 2017 including the Public Health Centers. Public Health Centers must become a pilot in implementing Clean and Healthy Living Behavior. Public Health Centers within the scope of the workplace as objects of the Non-Smoking Area, also as subjects or actors in terms of socializing clean and healthy behavior and promoting local health regulations.

Based on the results of a rapid survey of Clean and Healthy Living Behavior in the workplace and a survey of the application of Non-Smoking Area in workplaces, especially in 19 Public Health Centers at Paser District, East Kalimantan Province, smoking indicators in the workplace are still found as many as 19% of employees who violate the Non-Smoking Area Regulations in place work.

Compliance is a behavior adaptation from behavior that not obey to rules to behavior that obeys. According to Lawrence Green's theory (Notoadmodjo, 2012), underlying behavior is one of them is a knowledge factor which is a predisposing factor and other supporting factors that enable the occurrence of behavior include covering the physical environment that is the availability of facilities or infrastructure. According to Milgram it is known that compliance arises because of the existence of regulatory punishment or rules from certain authorities (Myers, 2014). Opinion regarding compliance is that the factors that influence the level of compliance include an understanding of instructions which in this case affects the level of one's knowledge of a regulation (Carpenito, 2013).

## **II. MATERIAL AND METHODS**

This research was an observational analytic study with a cross-sectional approach. The study was conducted at 19 Public Health Centers at Paser District, East Kalimantan Province. The population in this study were all employees working in 19 Public Health Centers at Paser District, East Kalimantan Province with 106 smokers status. The number of samples in this study was calculated by using a population proportion precision sample formula according to Lameshow obtained a total sample of 56 people with smoking status. The sampling technique uses proportional random sampling method. The independent variable in this study is knowledge about the area without cigarettes, smoking behavior, application of punishment and infrastructure. While the dependent variable is compliance with Non-Smoking Areas regulation. The aims and benefits of the study are explained to respondents in the format attached to the questionnaire. Interviews with respondents continued after obtaining consent to participate. The instrument used in this study was a questionnaire. Furthermore, an analysis will be conducted to determine the effect of each independent variable with the dependent variable and to determine the most dominant influential factor.

Data were analyzed univariate, bivariate and multivariate. Univariate analysis with frequency distribution tables, bivariate analysis to determine the effect between variables using the chi square test

and multivariate analysis to determine the most dominant influence using multiple logistic regression tests. Data were analyzed using SPSS. All tests were carried out at a significant level of 5%.

### III. RESULT AND DISCUSSION

#### 3.1 Univariate Analysis

Table 1. Frequency distribution of compliance with Non-Smoking Area regulations, knowledge of non-smoking areas, smoking behavior, application of punishment and infrastructure facilities on Non-Smoking Area in the workplace at Public Health Centersat Paser District, East Kalimantan Province

Characteristic	Frequency (N)	Percentage (%)
<b>Non-Smoking Area Regulation Compliance</b>		
Compliant	25	44,6
Not Compliant	31	45,4
<b>Knowledge of Non-Smoking Area</b>		
Good	9	16,1
Enough	22	39,3
Less	25	44,6
<b>Smoking Behavior</b>		
Light Smoker	23	41,1
Medium Smoker	33	58,9
Heavy Smoker	0	0
<b>Punishment Application</b>		
Applied	26	46,4
Not Applied	30	53,6
<b>Infrastructure Facilities</b>		
According to the Standards	27	48,2
Not in Accordance with Standards	29	51,8

*Source: Primary Data Research Results in 2020*

Based on table 1 it is known that most of the respondents are not compliant with the application of the Non-Smoking Area Regulation (45.4%), have less knowledge about Non-Smoking Area (44.6%), moderate smoking behavior, ie smoking 11-20 cigarettes a day (58.9%), Punishment application that are not applied (53.6%) and infrastructure facilities that is not in accordance with standards (29%).

#### 3.2 Bivariate Analysis

Tabel 2. Influence of knowledge about Non-Smoking Area, smoking behavior, application of punishment and infrastructure facilities on Non-Smoking Area in the workplace at Public Health Centersat Paser District, East Kalimantan Province

Variable	Non-Smoking Area Regulation Compliance				Total		$\rho$ value	PR	95% (CI)
	Compliant		Not Compliant		n	%			
	N	%	N	%					
<b>Knowledge of Non-Smoking Area</b>									
Good	21	67,7	10	32,3	31	100	0,000	4,234	1,670- 10,735
Less	4	16,0	21	84,0	25	100			
<b>Smoking Behavior</b>									
Light Smoker	15	65,2	8	34,8	23	100	0,021	2,152	1,184- 3,911
Medium Smoker	10	30,3	23	69,7	33	100			
<b>Punishment Application</b>									

Variable	Non-Smoking Area				Total		$\rho$ value	PR	95% (CI)
	Regulation Compliance								
	Compliant	Not Compliant			n	%			
Applied	17	65,4	9	34,6	26	100	0,008	2,452	1,272- 4,725
Not Applied	8	26,7	22	73,3	30	100			
<b>InfrastructureFacilities</b>									
According to the Standards	40	72,7	15	27,3	50	100	0,003	2,762	1,374- 5,552
Not in Accordance with Standard	17	45,9	20	54,1	42	100			

Source: Primary Data Research Results in 2020

Statistical test results show there is a significant influence between knowledge about non-smoking areas on compliance with regulations without smoking areas in the workplace ( $p = 0,000$ ). Respondents who have good knowledge about Non-Smoking Area are more likely to be obedient, this is in accordance with research that states one of the factors that influence a person's behavior is knowledge (Rochka et al, 2019). Good behavior is formed preceded by knowledge and positive attitudes (Notoadmodjo, 2012). This is also in line with other studies which state that good knowledge influences management compliance with Non-Smoking Area Regulations (Devhy et al, 2014). Another opinion states the knowledge of Non-Smoking Areas can be influenced by whether or not someone gets information about Non-Smoking Area (Susanti and Prabandari, 2017). In addition, a smoker who has good knowledge about the rules of a Non-Smoking Area is likely to comply with not smoking in a predetermined area and can increase the intention to stop smoking (Chaaya, 2009)

Statistical test results show there is a significant influence between smoking behavior on compliance with the Regulations without smoking in the workplace ( $p = 0.021$ ). The results of the study explained that respondents with mild smokers were more likely to comply, while moderate smokers were less likely to adhere to the application of Non-Smoking Area. Other study explain smokersperceptions will affect adherence to Non-Smoking Area. A smoker has a positive perception of smoking tends to be not compliant with the application of Non-Smoking Area Regulations (Hidayati and Arikenswi, 2012). Smokers are taking more time to smoke and cannot avoid smoking wherever they are. The results of this study are in line with other research which states that there is an influence between smoking behavior and employee compliance regarding Non-Smoking Area Regulation in the Education Office of South Sulawesi Province (Rochka et al, 2019).

Statistical test results show that there is a significant influence between the application of punishment to compliance with the Regulations without smoking in the workplace ( $p = 0.008$ ). This research is in line with research conducted by International Tobacco Control, that the factors that influence the high level of support and level of compliance with the implementation of non-smoking areas, namely the existence of strong regulations, consistent law enforcement and the socialization and campaign on non-smoking areas in every order or region (ITC Project, 2012). Research elsewhere also states that there is an influence between the application of punishment and compliance with the Non-Smoking Area Regulation (Yulyana et al, 2018) (Saroni et al, 2018).

Statistical test results show that there is a significant influence between infrastructure facilities and compliance with Non-Smoking Area Regulations in the workplace ( $p = 0.021$ ). The other study explains that the implementation of public policies in the form of Non-Smoking Area Regulations can be carried out well if adequate infrastructure facilities is available and in accordance with those stipulated in the Non-Smoking Area application. Means are one of the factors that influence policy implementation. Facilities and infrastructure facilities must be owned by the policy implementer so that the activities carried out can run effectively and efficiently. Furthermore, the study also explained that the large

number of non-compliance of the people in West Sumatra was caused by the unavailability of infrastructure, especially smoking areas (Azka, 2013). The results of this study are in line with other studies in which the results of the study show that there is an influence between infrastructure and community compliance in the implementation of Non-Smoking Area Regulation and the quality of infrastructure also influences compliance (Saroni et al, 2018) (Wiliyanto and Wibawani, 2017) (Prasetya et al, 2014).

### 3.3 Multivariate Analysis

At the selection stage of the independent variables consisting of knowledge about Non-Smoking Area, smoking behavior, application of punishment and infrastructure, each has a p-value <0.25. This shows that all of these variables can be entered and analyzed into a multivariate model.

The most dominant influence among all independent variables on compliance with the Non-Smoking Area Regulations in the workplace at the Public Health Centersat Paser District, East Kalimantan Province in the region can be seen in table 3.

Tabel 3. Multiple logistic regression test results

Variable	Sig	Exp(B)	95% CI	
			Lower	Upper
Knowledge of Non-Smoking Area	0,016	2,834	1,210	6,636
Smoking Behavior	0,014	9,347	1,561	55,961
Punishment Application	0,012	9,650	1,651	56,398
Infrastructure Facilities	0,003	15,783	2,483	100,336

Keterangan:

Sig = Significance Value

Exp (B) = Exponent Value B

95% CI Lower = Lower Data Interval

95% CI Upper = Upper Data Interval

Table 3 shows from the results of multivariate analysis that all independent variables have a significant value <0.05 so that Ho is rejected or that means all of these independent variables have a significant partial effect on Non-Smoking Area compliance. Wald value along with a positive regression coefficient on all independent variables shows a positive and significant effect on Non-Smoking Area compliance. The opportunity to comply with Non-Smoking Area is even greater if the respondent has good knowledge of Non-Smoking Area, mild smoking behavior (smoking <10 cigarettes a day), punishment are applied and infrastructure facilities that is in accordance with the standard. The most dominant independent variable influencing adherence to Non-Smoking Area is the infrastructure facilities variable (p = 0.003) with an exponential beta value (Exp B) of 15.783.

Based on the facts in the field, some Public Health Centers have no available infrastructure facilities in accordance with the standards stipulated in the Non-Smoking Area Regulations, this is related to the budget problem which is not sufficient, especially to make a special smoking area in a room that must meet the criteria, because there are still many special areas for smokers that are provided outside the building and do not meet the special smoking room requirements. This explains that the completeness of infrastructure facilities is the most important thing in the application of Non-Smoking Area, that is because the Non-Smoking Area Regulation is a public policy and in its application must pay attention to infrastructure facilities (Prasetya et al, 2014).

## IV. CONCLUSION

Knowledge about Non-Smoking Areas, smoking behavior, application of punishment, and infrastructure facilities have an effect on compliance with the Non-Smoking Area Regulation in the workplace at the Public Health Centers at Paser District, East Kalimantan Province. The variable that has the most significant or most dominant influence is the completeness of the infrastructure facilities. Regional governments through budget policies can complement infrastructure facilities to support the implementation of Non-Smoking Areas Regulations, then routinely carry out monitoring as an evaluation and act firmly against violations of Non-Smoking Areas implementation, and further strengthen coordination and cooperation across related sectors so that the implementation of Non-Smoking Areas Regulations can running optimally.

## V. RECOMMENDATION

1. For the Regional Government, through budget policies in order to prioritize infrastructure that supports the application of Non-Smoking Area regulations that are in accordance with the standards, the training and supervision team formed by the Regent can strengthen coordination and cooperation with all agencies, elements of community organizations, community leaders and religious leaders so that the implementation of regulations is running optimally and then reviewing the Non-Smoking Area regulations in Paser District so that with this regulation in addition to regulating smokers and the surrounding environment but also can gradually reduce the number of smokers so as to protect public health from the adverse effects of smoking.
2. The working place (Public Health Centers) leader as the person in charge of regulation can make a joint commitment of all working place employees to play an active role in implementing stricter punishment on violations of regulation implementation and need to put up a written appeal regarding the importance of compliance with regulation and install written punishment that are easy to read so as to remind employees about regulations and continue to approach through information about the adverse effects of smoking in the hope of reducing the number of smokers in the workplace.

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