Original Article

Analysis of Determinants of Preventive Behavior towards the Spread of Covid-19 among Ships that Docked at Boombaru Port, Palembang

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ABSTRACT

Boombaru Port in Palembang is a meeting point for the activities of ships, goods and people with the potential to become a means of the spread of Covid-19. Current efforts to prevent the spread of Covid-19 have not been fully implemented optimally. This study aims to analyse the determinants of preventive behavior towards the spread of Covid-19. This was a quantitative study using descriptive analytical method with a cross sectional approach. The study population was all crew members of ships that docked at Boombaru Port, Palembang with a total sample of 114 respondents who were selected accidentally. Data were analyzed using chi-square test and multiple logistic regression. The results showed several variables with a significant correlation, namely Captain support (P-value=0.0001) and availability of facilities (P-value=0.0001). Meanwhile, there were no significant correlations between age (P-value=1), education (P-value=0.612), type of ship (P-value=0.748), knowledge (P-value=1), attitude (P-value=0.279) with the preventive behavior towards the spread of Covid-19. In conclusion, the most dominant variable related to Covid-19 preventive behavior was captain support (PR=35.605). Poor Captain support had a 35.606 times greater risk to create bad preventive behavior towards the spread of Covid-19 compared to good Captain support.

Keywords : Covid-19, Ships, Behavior.

INTRODUCTION

According to the World Health Organization (WHO), the number of global Covid-19 cases as of April 21, 2022 was 504,079,039 confirmed cases of Covid-19 and 6,204,155 deaths (1.2%) worldwide, while in Southeast Asia there were 57,478. 119 confirmed cases of Covid-19 and 781.322deaths (1.4%) [1]. In Indonesia, data on the same date were 6,036,909 confirmed cases of Covid-19 and 155,746 deaths (2.6%) [2]. In South Sumatra, there were 80,403 confirmed cases of Covid-19 and 3,336 deaths(4.2%), while in Palembang there were 43,863 confirmed cases of Covid-19 and 1,315 deaths (3%) [3]. Additional cases of Covid-19 were obtained from various sectors including from sea and air ports which are the gateways for the movement of goods, people and means of transportation. Disease transmission can be caused by vectors or disease-carrying animals carried by means of transportation or by vectors already present at sea or air ports [4].

Based on data from Class II Ministry of Marine Affairs and Fisheries in Palembang, From 2019 to 2021, there was a relative increase in the number of ship arrivals from areas infected with quarantine diseases in the Palembang Boombaru Work Area. In 2019, there were 783 arrivals of ships and it increased in 2020 to 5994 ships, then in 2021 there were 7268 arrivals of ships. It was also found that 5 ships were quarantined with 39 crew members who were positive for Covid-19 and were isolated and 56 others were in quarantine [5].

Such condition is due to community compliance with the preventive behavior towards the spread of Covid-19.

Community compliance in efforts to prevent the spread of Covid-19 is influenced by various factors. According to Herawati, et al., (2021), it was influenced by community behavior factor whether efforts to prevent and control Covid-19 were implemented or not [6]. Such finding was also conveyed by Sangadji and Aningsih, (2021) that efforts to deal with the Covid-19 pandemic should be implemented by increasing people's understanding and behavior to carry out government recommendations regarding the prevention of Covid-19 [7]. Meanwhile according to Notoatmodjo, (2014), human behavior is influenced by several factors, namely predisposing factors (knowledge, attitudes, perceptions, motivation, values, beliefs, age, education), supporting factors (availability of facilities) and driving factors (laws, regulations, SOP, family/community figure/leader support)[8]. This is in line with the study conducted by Nuriati et. al. (2021) which revealed that there was a correlation between the availability of facilities and infrastructure and employee compliance in implementing health protocols [9]. Likewise a study conducted by Sangadji and Aningsih, (2021) which found that leadership support in preventing the spread of Covid-19 had a significant effect on employee compliance in implementing the Covid-19 preventive protocols in the workplace in accordance with established regulations and policies[7].

Based on observations made at Boombaru port in Palembang, efforts to prevent the spread of Covid-19 have been carried out based on established regulations. However, several activities had not been carried out optimally including the implementation of physical distancing on ships, there was no instructions for keeping a distance in several rooms, sterilization by spraying disinfectants had been carried out but not routinely with no specific schedule, and there were no specific health check facilities for crew members, only thermogans were available on several ships so that the health checks were carried out independently by crew members. This study aims to analyse the determinants of preventive behavior towards the spread of Covid-19 among ships that docked at Boombaru Port.

METHOD

This was a quantitative study using descriptive analytical method with a cross sectional approach. This study was carried out at Boombaru Port, Palembang from June to July 2022. The study population was all crew members of ships that docked at Boombaru Port, Palembang. Data were collected using a questionnaire that had been tested for validity among 30 respondents of crew members whose ships docked at Sungai Baung Port.

The study population was all crew members of ships that docked in the Boombaru Port area. The number of sample was determined using the Lemeshow formula for a two-proportion hypothesis test sample which obtained 114 respondents. Data were collected through a questionnaire consisting of 15 questions regarding Covid-19 and its prevention, 15 questions regarding attitude, 14 questions regarding preventive behavior towards the spread of Covid-19, 14 questions reagrding captain support, and 8 questions regarding availability of facilities.

Univariate analysis applied descriptive analysis to describe the characteristics of the respondents in the form of percentage tables. Furthermore, bivariate analysis applied the chi-square and Pearson Correlation statistical tests to determine the correlation between the two related or unrelated variables, while the multivariate analysis was performed through a multiple logistic regression modeling procedure to find out which independent variable had a more dominant correlation with the dependent variable.

RESULTS

Table 1. Distribution of Characteristics

Characteristic	f	(%)
Age		
< 35	97	85.1
≥ 35	17	14.9
Education		
≤ SMA	98	86
> SMA	16	14
Type of Ship		
> 350	101	88.6
≤ 350	13	11.4
Behavior		
Poor	53	46.5
Good	61	53.5

Education		
Poor	44	38.6
Good	70	61.4
Attitude		
Poor	86	75.4
Good	28	24.6
Captain Support		
Poor	58	50.9
Good	56	49.1
Availability of Facilities		
Poor	22	19.3
Good	92	80.7
Total	**114**	**100**

Table 1 revealed that most of respondents were involved in the <35 years of age group by 85.1%, had a level of education of high school and below by 86%, came from the type of ship with a ship weight of >350 by 88.6%, had good behavior by 53.5%, had good knowledge by 61.4%, had bad attitude by 75.4%, had poor captain support by 50.9%, and had good facilities by 80.7%.

Table 2. Analysis of the Correlation between Age, Education, Type of Ship, Knowledge, Attitude, Captain Support, and Availability of Facilities with Preventive Behavior towards the Spread of Covid-19

Variable	Preventive Behavior				P-value	PR
	Poor		Good			(95% CI)
	n	%	n	%		
Age						
< 35	45	46.4	52	51.9	1.000	0.974
≥ 35	8	47.1	9	52.9		(0.347-2.734)
Education						
≤ SMA	47	48	51	52	0.612	1.536
> SMA	6	37.5	10	62.5		(0.518 – 4.554)
Type of Ship (GT)						
> 350	48	47.5	53	52.5	0.748	1.449
≤ 350	5	38.5	8	61.5		(0.444-4.733)
Knowledge						
Poor	20	45.5	24	54.5	1.000	0,934
Good	33	47.1	37	52.9		(0.438-1.991)
Attitude						
Poor	37	43	49	57	0.279	0,566
Good	16	57.1	12	42.9		(0.239 -1.341)
Captain Support						
Poor	47	81	11	19	0.0001	35.606
Good	6	10.7	50	89.3		12.195 -103.957)
Availability of Facilities						
Poor	20	90.9	2	9.1	0.0001	17.879
Good	33	35.9	59	64.1		(3.931–81.314)

Table 2 presented the results of statistical test using chi square for age which obtained a P-value of 1 >α (0.05), for education which obtained a P-value of 0.612 > α (0.05), for type of ship which obtained a P-value of 0.748, for knowledge which obtained a P-value of 1, and for attitude which obtained a P-value of 0.279. It can be concluded that there was no correlation between age, education, type of ship, knowledge and attitude with preventive behavior towards the spread of Covid-19.

Furthermore, based on the result of chi square statistical test on captain support, it was obtained a P-value of 0.0001, similarly with the availability of facilities which obtained a P-value of 0.0001. Thus, it can be concluded that there was a significant correlation between captain support and availability of facilities with preventive behavior towards the spread of Covid-19.

Table 3. Analysis of the Correlation of the Dominant Variables

Variable	B	P-value	Exp (B)	95 % CI
Initial Model of Multivariate Analysis				
Captain Support	3.214	0.0001	24.89	8.255-75.043
Availability of Facilities	1.621	0.064	5.06	0.910-28.136
The model by excluding the Availability of Facilities variable				
Captain Support	3.573	0.0001	35.606	12.195-103.957
Availability of Facilities	1.621	0.064	5.06	0.910-28.136
Confounding calculation by excluding the Onset Time variable				
Captain Support	24.89	35.606	43.05	Confounding
Final Model				
Captain Support	3.573	0.0001	35.606	12.195-103.957
Availability of Facilities	1.621	0.064	5.06	0.910-28.136

Based on the results of the multivariate analysis in table 3, it was shown that there was a variable with a p value of >0.05, namely the availability of facilities. Therefore, the availability of facilities variable must be excluded. Based on the result of the analysis of OR change after the availability of facilities variable was excluded, there was a change in the OR value by >10%. Therefore, the availability of facilities variable was re-introduced into the model, so that it was found that the most dominant influential variable for the preventive behavior towards the spread of Covid-19 was Captain Support with Exp (B) of 35.606. The study finding revealed that availability of facilities was a confounding variable in the preventive behavior towards the spread of Covid-19.

DISCUSSION

Correlation between Age and Preventive behavior towards the Spread of Covid-19. This study revealed that there was no correlation between age and preventive behavior towards the spread of Covid-19. Prevention must be carried out by all parties and all ages, both young and old, because they are at risk of contracting Covid-19 and have different ways of doing preventive measures towards the spread of Covid-19. The study finding is in line with the study conducted by Rohmah and Simanjuntak (2020) which found that there was no correlation between age and Covid-19 prevention and age was not a determinant of one's knowledge. However, activeness in seeking knowledge was required

in efforts to prevent Covid-19[10]. A study conducted by Sari, et al. (2020) further revealed that there was no correlation between age and preventive behavior towards Covid-19 and that there were almost equal proportions between the age groups of adolescents, adults and the elderly with good preventive behavior towards Covid-19[11].

This study offers an implication that crew members at all age levels must remain active in efforts to prevent the spread of Covid-19 because they have the opportunity to spread Covid-19.

Correlation between Education and Preventive behavior towards the Spread of Covid-19. This study revealed that there was no correlation between education and preventive behavior towards the spread of Covid-19. Not only formal education is needed to prevent the spread of Covid-19, but also the experience of crew members, social environment and different views of crew members regarding disease susceptibility, preventive efforts, benefits, as well as efforts to prevent Covid-19. The study findings are consistent with a study conducted by Wulandari et.al., (2020) that there was no correlation between education and preventive behavior towards Covid-19[12]. This is because the knowledge gained by people with low education regarding the transmission of Covid-19 is not only from formal education but from their own experiences and the social environment. The study finding is in line with the study conducted by Pratiwi, et.al. (2020) which found that there was an insignificant correlation between education level and behavior to prevent transmission of Covid-19 which was influenced by differences in

perceptions regarding disease susceptibility, preventive efforts, benefits as well as efforts to prevent Covid-19[13].

This study offers an implication that crew members at all education levels must remain active in efforts to prevent the spread of Covid-19 since higher education does not guarantee that efforts to prevent the spread of Covid-19 can be carried out properly.

Correlation between Type of Ship and Preventive Behavior towards the Spread of Covid-19. This study revealed that there was no correlation between type of ship and preventive behavior towards the spread of Covid-19. Weight of the ship in gross tons (GT) unit will affect the number of crew members on board. The larger the GT, the larger the ship, the more crew members working on the ship and the more likely it is for the spread of Covid-19. The government through the Ministry of Transportation stipulates that every company operating Indonesian-flagged ships must make several adjustments to procedures to prevent the spread of Covid-19 within ship activities[14]. There was no correlation between type of ship and preventive behavior towards the spread of Covid-19 in this study because the spread of Covid-19 depends on the immune system of the crew and the extent to which compliance with the health protocols that apply at ports and ships is implemented by crew members and port managers. It is expected that crew members with types of ships of <350 GT and >350 GT will always consider efforts to prevent the spread of Covid-19.

Correlation between Knowledge and Preventive behavior towards the Spread of Covid-19. This study revealed that there was no correlation between knowledge and preventive behavior towards the spread of Covid-19. There are other factors that can influence it, namely the comprehension and mind-set that are increasingly developing and accompanied by increasing age of a crew member. Besides, the quality of information which is a source of knowledge for a crew member also an important factor since along with the correctness of the information obtained, prevention of the spread of Covid-19 can also be performed properly. The study finding is in line with a study conducted by Patimah, (2021) which found that there was no correlation between knowledge and preventive behavior towards the spread of Covid-19 because a person's behavior is influenced by internal factors such as motivation, goals, will and as well as by external factors, namely the environment [15].

This research offers an implication that it is necessary to increase the knowledge of crew members to provide correct information about preventive effort towards the spread of Covid-19 and the latest regulations.

Correlation between Attitude and Preventive behavior towards the Spread of Covid-19. This study revealed that there was no correlation between attitude and preventive behavior towards the spread of Covid-19. Attitudes available in the form of closed responses and are still influenced by one's experience regarding the prevention of Covid-19. Attitudes are influenced by subjective norms, namely trust in the opinions of others regarding the actions to be taken. The study finding is in line with the study conducted by Alfikrie, et al (2021) which found that there was no correlation between attitude and preventive behavior towards Covid-19, despite the rules that require a person to behave as expected[16]. A study conducted by Sari et al. (2020) also found that the positive attitude of respondents did not guarantee positive preventive behavior towards Covid-19, and was also it was influenced by the personal experiences of respondents regarding Covid-19 prevention as well as information obtained from the mass media and news from other communication media [11].

Correlation between Captain Support and Preventive Behavior towards the Spread of Covid-19. This study revealed that there was a correlation between Captain Support and preventive behavior towards the spread of Covid-19. The behavior of crew members is much influenced by a person considered important, namely the captain. Information conveyed by the Captain tends to be obeyed and is able to exert influence or encouragement to crew members to implement preventive behavior towards Covid-19. In addition, the policies and rules made by the captain to implement the Covid-19 prevention protocol on the ship can be carried out by crew members along with direct supervision from the captain. The study finding is in line with a study conducted by Sangadji and Aningsih, (2021) which found that there was a correlation between company management support and employee compliance with Covid-19 preventive measures since management support

could motivate and ensure the proper implementation of the Covid-19 prevention protocols [9]. Furthemore, a study conducted by Agustina and Budiono (2021) also found that leadership support was related to the preventive behavior towards the transmission of Covid-19 since a person's behavior was more influenced by people considered important so that what they do or say will tend to be obeyed [17].

The study finding implied that the Captain had a good understanding and behavior regarding Covid-19 prevention so that he could implement the rules to prevent the spread of Covid-19 on ships that docked at Boombaru Port, Palembang.

Correlation between the availability of Facilities and Preventive Behavior towards the Spread of Covid-19. There was a correlation between the availability of facilities and preventive behavior towards the spread of Covid-19. It can be due to the preventive behavior performed by crew members on ship requires supporting factors in the form of the availability of adequate facilities on board. A person's behavior is strongly influenced by the availability of resources including facilities and infrastructure. Such finding is in line with a study conducted by Sari and Budiono (2021) which found that there was a correlation between the availability of facilities and preventive behavior towards the spread of Covid-19[18]. The availability of infrastructure can enable a person to carry out preventive behavior towards the spread of Covid-19. Furthermore, according to Lawrence Green's theory, a person's behavior is influenced by enabling factors and facilities and infrastructure are part of the enabling/supporting factors [18]. Another study conducted by Herawati, et al (2021) revealed that there was a significant correlation between infrastructure and efforts to prevent and deal with Covid-19 because a person's health behavior was influenced by supporting factors such as the availability of facilities and health infrastructure [8]. It is expected a specific person in charge for the availability of facilities so that there is no shortage of facilities when needed.

Variables with Dominant Effect on Preventive behavior towards Covid-19 at Boombaru Port. Based on the results of multivariate analysis regarding Captain support variable, it was obtained a P-value; 0.0001; $p < 0.05$; Exp(B); 35.606 95% CI; 12.195-103.957. It can be concluded that there was a significant

correlation Captain support and preventive behavior towards the spread of Covid-19.

Poor Captain support had a 35.606 times greater risk to create bad preventive behavior towards the spread of Covid-19 compared to good Captain support. Such finding is in line with a study conducted by Sangadji and Aningsih (2021) which found an effect of leadership support on employee compliance with Covid-19 preventive measures with a P-value= 0.000, $p < 0.005$; Exp(B)= 2.43; 95% CI= 1.24 - 4.76 [9].

CONCLUSION

The most dominant influential factor for the prevention of the spread of Covid-19 among ships that docked at Boombaru Port, Palembang was the Captain support, while the availability of facilities acted as a confounding variable. In contrast, age, education, type of ship, knowledge, and attitude variables showed no correlation with preventive behavior towards the spread of Covid-19.

Captain and crew members should be able to optimally implement the rules related to preventive behavior towards the spread of Covid-19 among ships that docked at Boombaru Port, Palembang according to good governance in every technical implementation of the predetermined policies. The crew members are expected to be able to adapt to changes in behavior to continue performing normal activities by still implementing health protocols.

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CONFLICTS OF INTEREST
The authors declare no conflict of interest.

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