RESEARCH ARTICLE

Factors related to adherence with the implementation of COVID-19 health protocols in a traditional market traders' community in East Java, Indonesia

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Abstract

Objective: To observe the relationship of perceived seriousness, perceived susceptibility, perceived benefits, perceived barriers and cues to action with adherence to coronavirus disease-2019 protocols among traders.

Methods: The descriptive, quantitative, cross-sectional study was conducted from July to August 2021, in Jember Regency, East Java, Indonesia, and comprised traders in a traditional market. Data was collected using a demographic questionnaire, a questionnaire based on the Health Belief Model, and a coronovirus disease-2019 protocol adherence questionnaire after confirming the validity and reliability of the instruments.

Results: Of the 332 subjects, 191(57.5%) were females and 141(42.5%) were males. The largest age group was 30-39 years 137(41.3%), followed by 40-49 years in 132(39.8%). Overall, 293(88.3%) subjects had no history of chronic diseases. The main sources of information related to coronavirus disease-2019 were family/friends 84(25.3%), social media 83(25%) and television 82(24.7%). There were significant relationships of perceived susceptibility (p=0.000; r=0.215), perceived seriousness (p=0.004; r=0.157), perceived benefits (p=0.003; r=0.163), perceived barriers (p=0.001; r=-0.178) and cues to action (p=0.002; r=0.168) with protocol adherence.

Conclusion: Perceived susceptibility, perceived seriousness, perceived benefits, perceived barriers and cues to action were found to affect a person's adherence with coronavirus disease-2019 protocols.

Keywords: COVID-19 health protocols, Cues, Health belief model, Adherence. (JPMA 73: S-76 [Suppl. 2]; 2023)

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Introduction

Indonesia was among the countries that suffered badly in terms of the spread of coronavirus disease-2019 (COVID-19).[1] Traditional markets became clusters of COVID-19 positivity in Indonesia, according to the Indonesian Market Traders Association (IKAPPI).[2] This happened because the market was a place where many people gathered to make buying and selling transactions, increasing the risk of COVID-19 transmission.[2] The government provided preventive facilities, such as a place to wash hands, distribution of free masks and face shields, billboards displaying orders to continue to apply health protocols, and a dedicated unit of officers tasked with supervising Tanjung Market, which is one of the largest traditional markets in Jember Regency, but the adherence level among the traders remained low.

In November 2020, there were 1,568 traders who tested positive and 65 people had died across 275 markets in Indonesia.[3] Jember Regency, as of May 10, 2021, entered the orange zone[4] and non-adherence of traders could have had an impact on the spike in the number of positive COVID-19 cases in Jember Regency.

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Self-efficacy, perceived benefits, perceived barriers and perceived susceptibility have important roles in community adherence.[5] Perception of susceptibility is an individual's belief about a possibility or risk of developing a disease.[6] Denial reaction to the prevention of COVID-19 was caused by the perceived risk/susceptibility, which is influenced by individual, community and cultural factors.[7] If a person believes in the benefits he receives, then it can reduce susceptibility, seriousness of virulence, and risk of the virus to cause death.[8] Other key factors are socioeconomic, territorial, political and individual factors.[8]

The Health Belief Model (HBM)[9,10] aims at increasing an individual's perception of the threat so that the individual may adopt healthy behaviour.[11] Further research on perceived seriousness, perceived susceptibility, perceived benefits, perceived barriers and cues to action may help policy-makers in ensuring the promotion of COVID-19 preventive behaviour.[7] Health promotion strategies regarding health protocol adherence should focus on the perceived seriousness, perceived risk and self-efficacy, and adapt from habits to reduce the risk.[12] Perceived risk is influenced by several factors, such as individuals, communities and culture.[7]

The current study was planned to explore the relationship of perceived seriousness, perceived susceptibility, perceived benefits, perceived barriers and cues to action

with adherence to COVID-19 protocols among traders in a traditional market.

Subjects and Methods

The descriptive, quantitative, cross-sectional study was conducted from July to August 2021, in Tanjung Market, Jember Regency, East Java, Indonesia. After approval from the ethics review committee of the Faculty of Nursing, Airlangga University, the sample size was calculated in line with literature (Figure).[13] There were 1269 traders in the market; 730 on the second floor, and 539 on the first floor, and the sample included the required number of traders from each floor using the simple random sampling technique.

All those who met the inclusion criteria were given a number and a lottery was conducted to raise the sample. The inclusion criteria were: 1) Traders who are still actively selling in Tanjung Market; and 2) Traders who are more than 18 years old. Only one representative from each trade stall was selected. An informed consent sheet was given to the respondents under study. If respondents were willing, they filled out a questionnaire handed out by the researcher. If not willing, they were not obliged to do so.

Data was collected using a demographic characteristics questionnaire, based on the HBM theory[9,10] and a COVID-19 health protocol adherence questionnaire. The validity and reliability were tested using Pearson Product Moment and Cronbach's alpha respectively. The validity values for perceived susceptibility, perceived seriousness, perceived benefits, perceived barriers, and cues to action ranged from 0.546 to 0.833, which was more than r table (0.532), while Cronbach's alpha values for perceived susceptibility (0.975), included seriousness (0.835), perceived benefits (0.919), perceived barriers (0.981), and cues to action (1) which indicated reliability. The validity value for the COVID-19 protocol adherence questionnaire was 0.536-0.642), and the reliability value was 0.789.

Fifty questionnaires were distributed daily. Efforts were made to prevent transmission of COVID-19 to other traders. Hand sanitizers were provided to prospective respondents, and they were asked to use face masks that were also provided to those who were not already using them. Body temperature of prospective respondents was checked using a thermogun, and they were asked whether they had complaints of cough, runny nose, fatigue, lethargy, sore throat, and shortness of breath. Anyone found to have at least three of these symptoms was excluded. Data was analysed using Spearman Rho test.

Results

Of the 332 subjects, 191(57.5%) were females and 141(42.5%) were males. The largest age group was 30-39 years 137(41.3%), followed by 40-49 years 132(39.8%). Overall, 293(88.3%) subjects had no history of chronic disease. The main sources of information related to COVID-19 were family/friends 84(25.3%), social media 83(25%) and television 82(24.7%) (Table 1).

Table- 1: Characteristics of the respondents.

Characteristic	Criteria	n (%)
Gender	Female	191 (57.5)
	Male	141 (42.5)
Age	20-29 year	50 (15.1)
	30-39 year	137 (41.3)
	40-49 year	132 (39.8)
	>50 year	13 (3.9)
Education	Not completed primary school	32 (9.6)
	Elementary school	39 (11.7)
	Junior High school	124 (37.3)
	Senior High school	128 (38.6)
	College	9 (2.7)
Income	<Rp. 2.3 million	49 (14.8)
	Rp. 2.3 million	218 (65.7)
	>Rp. 2.3 million	65 (19.6)
Sources of information about COVID-19	Social media	83 (25)
	newspaper	60 (18.1)
	Television	82 (24.7)
	Doctor	8 (2.4)
	Friends/Family	84 (25.3)
	Seminar	15 (4.5)
Disease history	High blood pressure	16 (4.8)
	Diabetes	14 (4.2)
	Heart disease	2 (0.6)
	Respiratory disease	7 (2.1)
	There is not any	293 (88.3)

Table- 2: Distribution of Health Belief Model (HBM) variables.

Variable	n (%)
Susceptibility	
Low	198 (59.6)
Moderate	77 (23.2)
High	57 (17.2)
Seriousness	
Low	280 (84.3)
Moderate	28 (8.5)
High	24 (7.2)
Benefits	
Low	284 (85.5)
Moderate	35 (10.5)
High	13 (3.9)
Barriers	
Low	106 (31.9)
Moderate	101 (30.4)
High	125 (37.7)
Cues to action	
Low	208 (62.6)
Moderate	80 (24.1)

Continue on next page

Table 2: *continued from previous page.*

Variable	n (%)
High	44 (13.3)
Adherence	
Low	268 (80.7)
Moderate	50 (15.1)
High	14 (44.2)

Table 3: The relationship pf Health Belief Model (HBM) variables with adherence to COVID-19 protocols.

Variable	Spearman Rho test	
	p-value	*r*-value
Perceived Susceptibility-Adherence	0.000	0.215
Perceived Seriousness-Adherence	0.004	0.157
Perceived Benefits-Adherence	0.003	0.163
Perceived Barriers-Adherence	0.001	-0.178
Cues to Action-Adherence	0.002	0.168

COVID-19: Coronovirus disease-2019.

Figure: Sample size formula.

$$n1 = \frac{n}{N} \text{ x } \text{N1}$$

n1: *Sample size, n: Number of traders on each floor, N: Total population, N1: Sample size drawn from the population.*

Majority respondents had a low perceived susceptibility 198(59.6%), low perceived seriousness 280(84.3%), low perceived benefits 284(85.5%), high perceived barriers 125(37.7%), and low cues to action 208(62.6%). Adherence to COVID-19 protocols was low 268(80.7%).

There were significant relationships of perceived susceptibility (p=0.000; r=0.215), perceived seriousness (p=0.004; r=0.157), perceived benefits (p=0.003; r=0.163), perceived barriers (p=0.001; r=-0.178) and cues to action (p=0.002; r=0.168) with protocol adherence (Table 3).

Discussion

The findings suggested that average respondents agreed that they had the possibility of getting infected, but did not agree that their work might cause transmission of the virus.

A study explained that increasing adherence to the application of health protocols in individuals can be influenced by how the individual is aware of his or her susceptibility to the COVID-19 virus.[14]

One study reported that one of the many factors associated with health protocol compliance was education.[15] Based on the results of the characteristics of the respondents in this study, it was found that the average trader had a final education level of Junior or Senior High School. Gender, exposure to information, attitudes toward COVID-19 preventive measures and perceived risk/vulnerabilities affected community adherence in targeting COVID-19 mitigation.[16]

Perceived seriousness was significantly related to protocol adherence in the current study, which found that the average respondents did not agree that they were afraid of COVID-19, and disagreed that they would lose their job if exposed.

Perceived seriousness can be formed on the basis of medical information and knowledge. A person's level of understanding in receiving information is very important, because this affects the final response. A good level of knowledge leads to good behaviour.[17]

Someone who does not really understand or misinterprets the meaning of an instruction will not be able to follow the rules.[18] Health promotion activities should be undertaken using interpersonal communication and language that is simple, clear and easy to understand, such as information for traders that hand washing with soap in clean running water is a sanitary measure to maintain hygiene.[19] The perceived benefits have a positive effect on adherence with the application of health protocols, so the higher the perceived susceptibility that a person has, the higher the adherence.

Respondents in the current study generally disagreed that masks were able to prevent COVID-19 transmission, and strongly disagreed that washing hands and keeping social distance could prevent the transmission. Perceived benefits lead to a positive attitude towards COVID-19 prevention.[14,20] If the disease is considered serious, people will take better action to prevent outbreaks.[11] Another study stated that if a person believes in the benefits he stands to receive, it can reduce susceptibility, seriousness of virulence, and risk of virus–related death.[21]

Perceived barriers negatively affect protocol adherence[22]. Perceived barriers in the current study were significantly related to protocol adherence, which has been reported earlier as well.[14]

The current study found a number of respondents who had a high perception of barriers, but had a low level of adherence. This finding was in contrast with earlier research which stated that the perceived high barriers will increase the level of protocol adherence.[14]

Cues to action had a positive effect on protocol adherence in the current study. They indicate how the respondents might react to the support that has been provided by the government in an effort to prevent COVID-19 transmission[23].

The current study found that the respondents received more information from friends/family and social media regarding hand-washing stations, provision of free masks and faceshields, etc.[24] Health awareness promotes the spread of information about how to prevent COVID-19 in one's environment.[25]

Further research should be conducted on more specific reasons between perception variables and behavioural cues.

Conclusion

The higher the levels of perceived susceptibility, perceived seriousness, perceived benefit and cues to action, the higher was the level of adherence. In contrast, the higher the level of perceived barriers, the lower was the level of adherence.

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