

Original Research Article

THE EFFECT OF BENEFITS, BARRIERS, AND SELF-EFFICACY ON PUBLIC HEALTH PROMOTION BEHAVIOR DURING THE COVID-19 PANDEMIC

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Abstract

Background: Pandemic of Covid-19 situation made people to adapt with new normal habitually. Health promotion behavior may determine by perceived benefit, barrier, and self-efficacy.

Objectives: This research aimed to know the effect of perceived benefit, barrier, and self-efficacy to health promotion behavior in Palembang during pandemic Covid-19.

Methods: This study done with cross-sectional design to 183 respondents who lived in Palembang taken by randomized with online questionnaire. The instrument of this study conducted from Pender's HPM model developed by author. Study result analyzed by SEM-PLS approach to test direct and indirect effects.

Results: The results showed that there was not significant effect of self-efficacy to barrier ($\beta = -0.137$; $p = 0.067$) and health promotion behavior ($\beta = -0.026$; $p = 0.711$), but the findings also showed significant effect of self-efficacy to benefit ($\beta = 0.212$; $p = 0.017$), benefit to barrier ($\beta = -0.152$; $p = 0.046$), barrier to health promotion behavior ($\beta = -0.141$; $p = 0.039$), and benefit to health promotion behavior ($\beta = 0.331$; $p < 0.001$). Otherwise, there was also found significant indirect effect of self-efficacy to health promotion behavior by benefit as mediator ($\beta = 0.07$; $p = 0.026$). Overall model give 14.2% to HBP.

Conclusion: Perceived benefits and perceived barriers are significant predictors of individual health promotion behavior. Meanwhile, self-efficacy does not have a significant effect. In addition, self-efficacy has a significant influence on perceived benefits and perceived benefits on perceived barriers. Self-efficacy also has an indirect influence on health promotion behavior through perceived benefits as mediators

Keywords: *Barrier, Benefit, Covid-19, Health promotion behavior, Self-efficacy*

INTRODUCTION

The condition of the coronavirus infection disease 2019 (Covid-19) pandemic due to the spread of coronavirus continues to

experience prevalence rates that tend to fluctuate. The trend of national incidence rate increase and until end of December 2020 more than 7000 new confirmed cases found with

prevalence rate 56 out of 100 people (Satgas Penanganan Covid-19, 2020). Risen of new cases found in many province in Indonesia include South Sumatera province. In November 15-16, 2020, confirmed cases increase up to 20 new cases (44 to 64) (Satgas Penanganan Covid-19, 2020) with district highest number with People Under Monitoring was Plaju and Ilir Barat Dua (Hallo Palembang, 2021).

The coronavirus as known as respiratory infection with airborne spreading. It can happen when people with Covid-19 cough, sneezes, or talk and secrete virus from droplet or droplets of fluid. Virus can enters through the nose, mouth, and eyes and binds to angiotensin-converting enzyme 2 (ACE-2) in endothelium. This condition allow virus enter the blood and distribute it to the lung. As the result, inflammation occurs in the lung, especially in the alveolus. Viral infection in alveolus develops damage in alveolar membrane. In the end can disrupting respiratory of oxygen-carbon dioxide exchange. The severity of this condition is severe acute respiratory syndrome (SARS) occur. SARS can lead patient to respiratory failure conditions with symptom low oxygen levels and decrease pressure of gases in blood.

Therefore, it is important to take precautions at various levels. Nursing recognizes three levels of prevention, namely promotive and preventive efforts (level one), curative (level two), and rehabilitative (level three). The first level is in promotive and preventive efforts, when care is carried out on individuals who are healthy but in risky environments and individuals who already have risk factors for illness (comorbidities). Curative efforts focus on treating sick individuals to achieve recovery, and rehabilitative efforts are given at the time of recovery.

New habits is change of behavior develop in pandemic era. It contain promotive and preventive action to maintain optimal

health and free from infection. People need to aware about their condition by early detection of virus (swab antigen or PCR), familiar with signs and symptoms of Covid-19, and also know how to report the cases. The information about disease, new habits, and health protocol can give to people through health promotion in various media such as television or social media. One of trustful channel is BBC News Indonesia as information dissemination (Lumbanrau, 2020). There was different response in public, compliance and non-compliance. Compliance of people influenced by increase of new cases and non-compliance can be caused by misinformation and disinformation about Covid-19.

The Central Statistics Agency release information about factor that impact non-compliance people. Since pandemic, there is increases price of tools and material, and also difficulty of get mask, hand rub, and apron. The other reason, public meet lot of non-compliance people and most of them do not suffer with Covid-10 symptoms, another case was leaders that not be able as model of compliment This reasons can be barrier to implementing health protocols in new habits (Safitri, 2020).

Implementing health protocols can be challenging because it is new in their life. People need to understand and experience health protocol to able know the benefit. Healthy behavior about this be obtained from exploration understanding and experiencing two or them. Nola J. Pender's Health Promotion Model can explore about individual behavior to prevent Covid-19 with implementing new habits. This model concept explain that healthy behavior need self-efficacy as motivation to change and maintain good health (Pakpahan et al., 2020). Internal or external individual factor can affect healthy behavior, specialty how individuals feel about this behavior. Perception about barriers (Bernard et al., 2020) and benefits (Troesch et al., 2020) how to implemented health behavior

be affected by self-efficacy (Pignatiello, Irani, Tahir, Tsivitse, & Hickman, 2020) as mentioned in previous studies. At the end from all factors individual need to commit with health behavior that their choice to maintain health in pandemic era. Therefore, this study aims to determine the determinants that influence the commitment of health promotion behavior (HPB).

METHODS

Study Design

This study used a cross-sectional design approach.

Setting

The study was conducted in Palembang City in April-May 2021.

Research Subject

Samples are people who live in Palembang which taken randomly. The sample criteria set by the researchers are: individuals aged 13 to >60 years, able to independently or have family members who are able to use google forms, and agree as respondents. The sample size 186 respondents of the study was obtained using the G*Power application (Faul, Erdfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007).

Instruments

Data were taken using questionnaires developed by author from Pender's HPM model framework (Alligood, 2014). The instrument's validity and reliability was test in first step of SEM-PLS as confirmatory factors analysis as explained in measurement model and the result showed in Table 1.2 and 1.3.

Data Analysis

The data is then processed by structural equation model (SEM) analysis with a partial least square (PLS) approach.

Ethical Consideration

This study has been approved by Department for Research and Community Service (DRCS) UKMC (11.2/II/B1-PN10.01/2/21).

RESULTS

Univariate analysis

Univariate data based on respondent characteristics in Table 1.1 show total respondent was 186 with women near 4 times than men, level education balance between high school and college graduate, most of respondents are student (51.6%). In HPM variable analyze with median score for perceived benefit, perceive barrier, self-efficacy, and health promotion behavior which median 22, 13, 7, 9, and 9 in sequence.

Table 1. Central tendencies measures and variability

Variable	f	%
Gender		
Men	38	20.4%
Women	148	79.6%
Education level		
High school	90	48.4%
Bachelor	57	30.6%
Master	38	20.4%
Doctoral	1	0.5%
Occupation		
Not working	8	4.3%
Housewives	5	2.7%
Student	96	51.6%
Civil servants	7	3.8%
Private Employees	67	36%
Self employed	3	1.6%
	Mean	SD
Age	28.66	8.97
Perceived Benefit	8.93	1.32
Perceived Barrier	4.73	1.61
Self-efficacy	8.77	1.37
HPB	8.93	1.13

Structural Equation Model Analysis

The data is then processed in SEM-PLS through two stages, which are model measurement and structural measurement (Mustafa and Wijaya, 2012). The model measurement is reviewed from composite reliability and average variance extracted (AVE) values, as well as Fornell-Larker's values to analyze correlations between variables (Haryono, 2017). Meanwhile, structural measurement will be presented in the form of a diagram (Figure 1.1) showing the value of the effect coefficient (β), significance (p-value), and determinant coefficient (R^2).

Model measurement

All variables, both independent and dependent, have good validity and reliability with the value of composite reliability which are above 0.7 (reliable) and AVE above 0.5 (good convergent validity) (Table 1.2). Likewise, the intra-variable correlation value (as write as in bold text) on Fornell-Larcker's shows a greater value compared to the correlation between variables, so it can be concluded that the model has good discriminant validity (Table 1.3). In addition, model fitting value as SRMR and NFI shows 0.019 (<0.10) and 0.914(>0.9) respectively.

Table 2. Variable Validity and Reliability

Variabel	Composite Reliability	Average Variance Extracted
Perceived Benefit	0.851	0.741
Perceived Barrier	0.769	0.627
Self-efficacy	0.824	0.701
HPB	0.841	0.726

Table 3. Fornell-Larcker's

Variable	Perceived Benefit	Perceived Barrier	Self-efficacy	HPB
Perceived Benefit	0.837			
Perceived Barrier	-0.181	0.792		
Self-efficacy	0.212	-0.169	0.852	
HPB	0.351	-0.197	0.068	0.861

Structural measurement

The SEM results show several things (Figure 1.1). First, the model show all independent variables explain HPB as 14.2%, while the rest (59.4%) is influenced by other factors that were not studied. This study showed that there are varies direct effect of independent to HPB. There was not significant effect of self-efficacy to barrier ($\beta = -0.137$; $p = 0.067$) and health promotion behavior ($\beta = -0.026$; $p = 0.711$), but the findings also showed significant positive effect of self-efficacy to benefit ($\beta = 0.212$; $p = 0.017$), negative effect benefit to barrier ($\beta = -0.152$; $p = 0.046$), negative effect barrier to health promotion behavior ($\beta = -0.141$; $p = 0.039$), and positive effect benefit to health promotion behavior ($\beta = 0.331$; $p < 0.001$).

Otherwise, there was also found some indirect effect in this study. There is significant positive indirect effect of self-efficacy to health promotion behavior by benefit as mediator ($\beta = 0.07$; $p = 0.026$). In the other hand, effect of self-efficacy on HPB was not significant ($\beta = -0.026$; $p = 0.711$). It can conclude that perceived benefit has full intervening effect to HPB because it has significant indirect effect to HPB but not directly significant. Meanwhile, other indirect effect which are shown in table 1.4 are not significant.

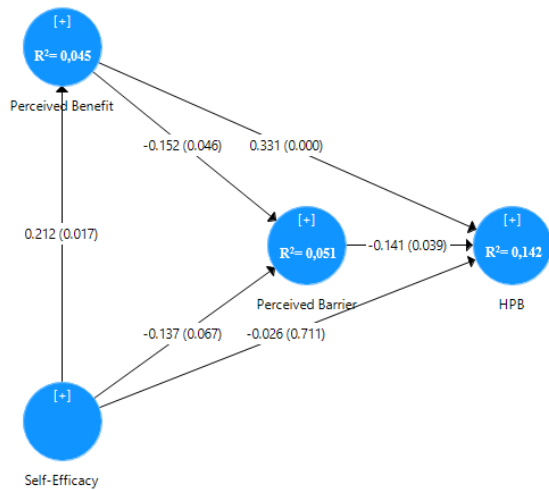


Figure 1. SEM path analysis diagram predictors of health promotion behavior

Table 4. Indirect influence of predictors on dependent variables in the model

Model	β	P-value
Self-efficacy – Perceived Benefit – HPB	0.07	0.026
Self-efficacy – Perceived Benefit – Perceived Barrier	-0.032	0.135
Self-efficacy – Perceived Barrier – HPB	0.019	0.274
Perceived Benefit – Perceived Barrier – HPB	0.021	0.167
Self-efficacy – Perceived Benefit – Perceived Barrier – HPB	0.005	0.278

DISCUSSION

Individuals need to increase their capacity for optimum health by seeking suitable health living condition. It need ability to contemplate and reflect on self-awareness and assessing potency to do health behavior. Each individual was unique and have different way to seeking health behavior which influenced by their believed. As individual with complexity, human need interact with other individual and also environment. Interaction between them progressively change both of them, especially how individual seeking health behavior (McEwen and Wills, 2019). Health professions form a part of an individual's interpersonal

environment that influences them throughout their lives. The self-initiative to reshape (reconfiguration) the individual-environment interaction is essential or fundamental in the behavior changes.

The perceived barrier variable in this study has a significant influence on reducing health promotion behavior ($\beta = -0.141$; $p = 0.039$), in line with the Afro et.al study which has a significance value of 0.001 with a contribution of influence to health protocols of 10.2% (Afro, 2021) with a tendency to perceive obstacles owned by the majority of the sample is quite high. The findings suggest that most people are aware of the barriers to implementing a health protocols. However, respondents who are positive for COVID-19 admit that sometimes they find it difficult to maintain distance and follow other health protocols due to living situations that make it impossible to implement them (Kuntardjo & Sebong, 2020). For example, when selling in the market, respondents admitted that their interactions with buyers or customers were difficult to implement safe distancing. In addition, people also find it difficult to implement protocols due to lack of awareness (48.6%) as the biggest factor, followed by lack of reliable information (39.4%), unfamiliarity in carrying out new adaptation protocols in daily life (29.8%), not experiencing COVID-19 (10.1%), regulations that are considered infirm (7.2%), and problems related to the economy (5.3%) (Supriyati et al., 2021).

Perceived benefits affect compliance in carrying out health protocols ($p = 0.005$) (Afro, Isfiya and Rochmah, 2020). This shows that almost all people are aware of the benefits of following health protocols (Afro, 2021). If the perceived benefits of a disease prevention measure are low, the possibility of actions to be taken for prevention will be lower. As shown in the results of this study that perceived benefits have a significant positive influence on health promotion behavior ($\beta = 0.331$; $p < 0.001$) and a significant negative

influence on perceived barrier ($\beta = -0.152$; $p = 0.046$). This provides evidence for nurses that by increasing the perception of usefulness of getting used to health protocols will decrease the perception of individual barriers while also increasing health promotion behavior.

An individual's confidence in their abilities can have a significant impact on their behavior, thoughts, and reactions in all situations. This is evident in the study, where self-efficacy is found to be a strong predictor of success, it indirectly influences health promotion behavior through perceived benefit ($\beta = 0.07$; $p = 0.026$). This confirms that individuals who are confident in their health protocols and who are prepared for the COVID-19 pandemic will be able to remain healthy, the benefits that will be recorded can be very much so as to increase health promotion behavior. Individuals who trust and believe government efforts and responses positively impact behavior to follow and adhere to social distancing and stay-at-home guidelines believe that others are complying with the guidelines as well. Health information systems were positively correlated with self-adherence ($p=0.003$), and social media with adherence of others in the United States ($p=0.04$), South Korea ($p=0.048$), and Kuwait ($p=0.008$). The effect of government persuasion in providing information, communication, and education to the public about the COVID-19 crisis is difficult and complicated because it is also related to the large amount of misinformation and unclear sources of information about the source and spread of the virus and vaccination (Al-Hasan, Yim, & Khuntia, 2020).

Barriers can hinder commitment to action, mediate behavior, and shape formed behavior. Self-efficacy of recommended behaviors can increase the desire to commit to action in displaying healthy behaviors. Increased self-efficacy is the result of fewer barriers to specific healthy behaviors. The perceived positive impact of behavior is the

result of greater self-efficacy, and will further increase the resulting positive impact (Fawcett, 2005; Peterson & Bredow, 2013). When positive emotions or positive impacts are associated with behavior, then the likelihood of committing and acting as behavior can increase.

On the one hand, there are inhibiting factors such as some who are not aware of the importance of maintaining health protocols, and on the other hand, there are factors that support that there are people who have been aware and compliant. Adaptation to new ways and habits provides opportunities to move freely (Akbar, Wilastiara, Noviyanti, Ardiani, & Sudinadji, 2021) without increasing the risk of exposure to COVID-19. The behavior of improving spiritual aspects can be one of the activities that can be done and still maintaining physical exercise is the most frequent activity (Ashgar, 2021).

CONCLUSION

Perceived benefits and perceived barriers are significant predictors of individual health promotion behavior. Meanwhile, self-efficacy does not have a significant effect. In addition, self-efficacy has a significant influence on perceived benefits and perceived barriers. Self-efficacy also has an indirect influence on health promotion behavior through perceived benefits as mediators.

SUGGESTIONS

In this study, it was found that beliefs and attitudes about health-promoting behaviors are important factors in determining whether or not people engage in them. It was also found that interventions that focus on increasing people's awareness of the benefits of engaging in health-promoting behaviors, while also addressing any perceived barriers that may prevent them from doing so, are most effective. Future research should focus on investigating other factors that influence health

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