Factors Determining Commitment to Health-Promoting Behavior During COVID-19

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Abstract

Forming new behaviors during the COVID-19 pandemic required individual commitment. Based on Pender's health promotion model (HPM), factors affecting commitment to new behaviors include benefit perception, barriers, self-efficacy, related activities, as well as interpersonal and situational influences. This study aims to determine the determinant factors that affected commitment to health-promoting behavior and habits during the COVID-19 pandemic. This study randomly assigned online questionnaires to 186 people in Palembang. The instruments used in this study were developed by the author based on Pender's HPM. Path analysis with the SEM-PLS approach was used to analyze determinant factors of community commitment. The results of the analysis showed that the following influenced commitment: benefit variables (β = 0.192; p = 0.011), previous activities (β = 0.134; p = 0.031), interpersonal influence (β = 0.214; p = 0.005) and situational influence (β = 0.326; p = 0.000), barriers (β = -0.068; p = 0.247), and self-efficacy (β = 0.079; p = 0.256). All the predictors contributed to a commitment value of 40.6%. It can be concluded that enhancing perceived benefits and focusing on previously completed activities, and external factors, interpersonal and situational influence, may strengthen commitment to developing healthy behavior. Moreover, good self-efficacy based on previous practice can lower perceived barriers, which hinder commitment. Therefore, nurses need to focus on identifying individual internal and external factors to bolster commitment while lowering barriers.

Keywords: commitment behavior, health promotion, health promotion model, new normal

Abstrak

Faktor-faktor Penentu Komitmen terhadap Perilaku Promosi Kesehatan selama COVID-19. *Membentuk perilaku baru di masa pandemi COVID-19 memerlukan komitmen individu. Berdasarkan* Pender's health promotion model (HPM), *faktor-faktor yang mempengaruhi komitmen terhadap perilaku baru meliputi persepsi manfaat, hambatan, efikasi diri, aktivitas terkait, serta pengaruh interpersonal dan situasional. Penelitian ini bertujuan untuk mengetahui faktor-faktor penentu yang mempengaruhi komitmen terhadap perilaku dan kebiasaan promosi kesehatan selama pandemi COVID-19. Penelitian ini menyebarkan kuesioner* online *secara acak kepada 186 orang di Palembang. Instrumen yang digunakan dalam penelitian ini dikembangkan penulis berdasarkan* Pender's HPM. Path analysis *dengan pendekatan SEM-PLS digunakan untuk menganalisis faktor-faktor penentu komitmen masyarakat. Hasil analisis menunjukkan bahwa komitmen dipengaruhi oleh hal-hal berikut: variabel manfaat (β = 0,192; p = 0,011), aktivitas sebelumnya (β = 0,134; p = 0,031), pengaruh interpersonal (β = 0,214; p = 0,005) dan pengaruh situasional (β = 0,326; p = 0,000), hambatan (β = -0,068; p = 0,247), dan efikasi diri (β = 0,079; p = 0,256). Seluruh prediktor menyumbang nilai komitmen sebesar 40,6% sehingga dapat disimpulkan bahwa meningkatkan manfaat yang dirasakan dan fokus pada aktivitas yang telah diselesaikan sebelumnya, dan faktor eksternal, pengaruh interpersonal dan situasional, dapat memperkuat komitmen untuk mengembangkan perilaku sehat. Selain itu, efikasi diri yang baik berdasarkan praktik sebelumnya dapat menurunkan hambatan yang dirasakan, yang menghambat komitmen. Oleh karena itu, perawat perlu fokus dalam mengidentifikasi faktor internal dan eksternal individu untuk meningkatkan komitmen sekaligus menurunkan hambatan.*

Kata Kunci: *model promosi kesehatan,* new normal*, perilaku komitmen, promosi kesehatan*

Introduction

COVID-19 first emerged in Wuhan in December 2019 and then spread throughout the world; the first case in Indonesia was recorded at the end of February 2020. The Indonesian government declared a pandemic in early March. By December 2020, the development of cases nationwide increased and the country had a prevalence rate of 56 out of 100 people. In South Sumatra, between November 15 and 16, the number of cases jumped from 44 to 46 (Satuan Tugas [Satgas] Penanganan COVID-19, 2020). Meanwhile, in Palembang, the Plaju subdistrict became the area with the highest number of people under monitoring, and the Ilir Barat Dua subdistrict became the area with the most patients under surveillance (Hallo Palembang, 2020).

The virus was initially identified as airborne, spreading through droplets of fluid produced when an infected individual coughs, sneezes, or speaks. However, it was later discovered that the virus can also bind to angiotensin-converting enzyme 2 (ACE-2) receptors in the walls of blood vessels (endothelial), allowing it to enter the body and made other organs besides lungs vulnerable through blood (Kumar et al., 2020; Li et al., 2003; Zou et al., 2020). After the virus enters the lower respiration tract, it can induce inflammation in the lungs. The virus has the potential to change the characteristics of the lungs, especially in the alveolus, which can lead to parenchymal pulmonary. This can cause damage to the alveolus membrane, disrupt the oxygen-carbon dioxide exchange process, and lead to respiratory failure because of decreasing oxygen levels in the blood. Based on the autopsies of several COVID-19 patients, pathologic findings were found that alveolar capillary micro thromboses were also associated as the cause of (Kommoss et al., 2020).

During the pandemic, efforts of health promotions through various media outlets in order to promote strategies to stay healthy, especially in terms of adopting new habits. Health promotion in the form of counseling and health education is an example of information dissemination (Lumbanrau, 2020). However, people often did not follow health protocols during the pandemic. Such non-compliance could have been caused by misinformation or lack of information as well as existing obstacles. Soleimanvan-diAzar et al. (2021) found several factors explaining why people did not follow health protocols during the COVID-19 pandemic. There were individual factors, which included personality traits, lack of self-efficacy, little knowledge of the disease, and misconceptions about health. There were also structural factors, which included difficulty accessing health supplies, weak laws and supervision, and poor performance of national media. Other factors were economic factors (e.g., high costs of living and lack of government support) and sociocultural factors (e.g., cultural beliefs and social customs).

The Central Bureau of Statistics (Badan Pusat Statistik [BPS]) obtained data on the reasons why people did not comply with health protocols. These included the necessity to work and no sanctions for violating individuals (Safitri, 2020). Another study found that 4 factors significantly ($p < 0.001$) correlated with following health protocols: people's intentions, attitudes, perceived behavior, and subjective norms (Noorrizki et al., 2021).

Exploring people's understanding and experience in following health protocols can be examined from healthy behaviors conducted daily during the pandemic. Therefore, this study explores health-promotion behavior in the pandemic through Pender's health promotion model (HPM) because it can explain how individuals behave to prevent a disease from spreading based on the concept of self-efficacy as a motivating factor (Pakpahan et al., 2020). HPM broadly explains that the variables of external factor affecting health behaviors are determined by how individuals understand and feel about certain health behaviors advocated by others. The understanding and feelings of individuals process-

ed through self-efficacy can influence how they perceive the benefits and constraints of implementing healthy behavior. Few studies have examined what factors determine the individual commitment to carry out the behavior as well as those factors hindering it. Therefore, this study aims to uncover the determinant factors that result in committing to health-promoting behavior.

Methods

This study applied a cross-sectional design. IT collected data through online questionnaires, which were randomly distributed during April-May 2021 to all people who lived Palembang. The sample criteria included people aged 13 to >60 years and able to or have family members who can use Google Forms. This study included 186 participants; it was approved by DRCS University of Catholic Musi Charitas, with approval number 11.2/II/B1-PN10.01/2/21. The data were then analyzed using a structural equation model (SEM) with a partial least square (PLS) approach using SmartPLS v.3.2.9 (Ringle et al., 2015). SEM-PLS analyzed the data through two approaches: a measurement model to ensure the validity and reliability of the instrument construct and a structural model to test the hypotheses (Ghozali & Latan, 2020; Klemelä, 2018; Ringle et al., 2020; Wong, 2013).

The questionnaire was developed by the author from Pender's HPM framework (Alligood,

2014), which includes behavior-specific cognition and affect (BSCA) as the direct variable affecting commitment and individual characteristics and experiences as the indirect variables. As in the framework, the BSCA consists of two cluster variables: internal factors (e.g., perceived benefits of action, perceived barriers to action, perceived self-efficacy, and activity-related affect) and external factors (e.g., interpersonal influences and situational influences). The validity and reliability of the instruments explained in this study are part of SEM analysis.

Results

Table 1 shows that participants were aged between 17 and 63, with a middle score of 22 years. Most were female and most had the equivalent level of high school education (90 [48.4%]) and were student (96 [51.6%]) during data collection. In addition, the middle value and score range for the independent variables are as follows: benefit 13 (5–15), barrier 7 (3–12), self-efficacy 9 (5–10), previous activities performed during the pandemic 11 (3–15), interpersonal influence 17 (6–20), and situational influence 10 (5–10). Meanwhile, the commitment dependent variable is 10 (7–10).

The data were then processed in SEM-PLS through two stages: the measurement model to assess the validity and reliability of the construct and the structural model for hypotheses

Table 1. Descriptive of Participants' Characteristics

	Variables	f	%	Variables	Median	Min-Max
Gender	Male	38	20.4	Age	22	17 – 63
	Female	148	79.6	Perceived benefit	13	5 – 15
Education	High school	90	48.4	Perceived barrier	7	3 – 12
	Bachelor	57	30.6	Self-efficacy	9	5 – 10
	Master	38	20.4	Activity-related	11	3 – 15
	Doctoral	1	0.5	Interpersonal influence	17	6 – 20
Occupation	Unemployed	8	4.3	Situational influence	10	5 – 10
	Housewife	5	2.7	Commitment	10	7 – 10
	Student	96	51.6			
	Government employee	7	3.8			
	Private employee	67	36			
	Entrepreneur	3	1.6			

Table 2. Variable Validity and Reliability

Variables	Composite Reliability	Average Variance Extracted (AVE)
Perceived benefit	0.793	0.666
Perceived barrier	0.771	0.628
Self-efficacy	0.843	0.729
Activity-related	0.820	0.605
Interpersonal influence	0.748	0.503
Situational influence	0.755	0.622
Commitment	0.786	0.649

Table 3. Cross Loading Fornell-Larcker

Variables	Perceived benefit	Perceived barrier	Self-efficacy	Activity-related	Interpersonal influence	Situational influence	Commitment
Perceived benefit	**0.816**						
Perceived barrier	-0.145	**0.792**					
Self-efficacy	0.183	-0.162	**0.854**				
Activity-related	0.293	-0.122	0.209	**0.778**			
Interpersonal influence	0.292	-0.180	0.157	0.277	**0.709**		
Situational influence	0.252	-0.224	0.144	0.147	0.312	**0.789**	
Commitment	0.400	-0.236	0.234	0.322	0.433	0.488	**0.806**

testing. The fit model was reviewed based on the validity, composite reliability, and average variance extracted (AVE) values (Table 2), as well as the Fornel-Larker cross-loading value (Table 3), to analyze correlations between variables (Ghozali & Latan, 2020; Haryono, 2017; Mustafa & Wijaya, 2012).

Convergent validity analysis of this study's instrument shows good validity for all AVE values of the variable construct, which are above 0.5 Based on the Fornell-Larcker criterion, each variable has the highest correlation value to themselves other than to another construct. Statistically, the instrument well represents the underlying construct and has established its distinctiveness. The results show that the instrument also has good composite reliability, with a value above 0.6. Overall, the instrument well represents the underlying construct and has established its distinctiveness. This model has good measurement model parameters and can be analyzed forward to structural model.

The structural model is presented in the form of a diagram (Figure 1), showing the value of the coefficient of effect (β), significance (p-value) and contribution of effect (R^2). Even though this study includes participant characteristics, they are not analyzed in a multivariate test because they are not direct variables to commitment, as mentioned in the research methodology section. The SEM result (Figure 1) shows several things, namely the contribution of all independent variables to dependent variable in this study by 40.6%, while the rest of covariance value (100% - 40.6% = 59.4%) were influenced by other factors not examined in this research. In addition, the most dominant determinant of an individual's commitment is situational influence (i.e., the arrow with the thickest line in the figure) (β = 0.326; p < 0.001), followed by interpersonal influence (β = 0.214; p = 0.005), perceived benefits (β = 0.192; p = 0.011), and previous activities (β = 0.134; p = 0.031). However, barrier (β = -0.068; p = 0.247) and self-efficacy (β = 0.079; p = 0.256) have an insignificant influence on individual commitment.

The coefficient of negative influence on the barrier to individual commitment indicates that
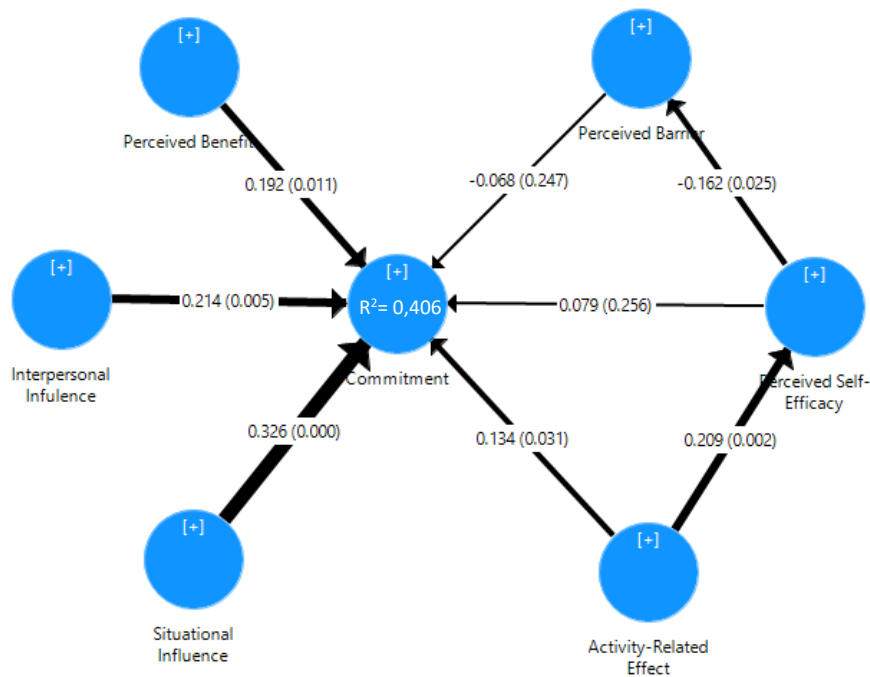
Figure 1. SEM Diagram for Determinant Factors of Health-Promoting Behavior Commitment

the greater the barrier or perceived constraints experienced by individuals will reduce the commitment to implement health promotion behavior. In addition, previous activities had a significant influence on individual self-efficacy (β = 0.209; p = 0.002); individual efficacy had a significant negative influence on barriers (β = -0.162; p = 0.025). Based on the negative values in the coefficient of self-efficacy against barriers, it can be concluded that the more self-efficacy an individual has will decrease the perception of the perceived barrier or experience that individual had.

Discussion

Health-related positive activity during the pandemic was affected by participant characteristics. Most of the participants were adults, had finished high school, and were university students or employees. These factors imply that the participants could gather information about the importance of reducing the spread of infection. This study's results follow those of Pratiwi et al. (2020) study in Bali, whose participants' ages were 20.72±6.25 (13–56), women (52.5%),

high school (49%) to higher education (50%), and students (72.5%), as similar as Riyadi and Larasaty (2020).

This study showed that most of the participants displayed a good activity-related to health behavior. The median score was 11 of 15 which indicate high score. The items in the instrument show that participants practiced healthy behavior such as consuming health food or beverages remedy (42%), exercising (40%), and getting enough sleep (36%). Junias and Toy (2021) found that most of the participants fol-lowed the health protocols. Individuals were able to create healthy living conditions for themselves. They had the capacity for self-reflection, including examining their competen-ce or potencies to establish a good health behav-ior. Additionally, they attempt to strike balance between change and stability while regulating their behavior.

Participants in this study perceived a mild barrier to commitment (median score 7 to maximum 12) and not giving significant negative effect to commitment. Moreover, they seldom re-

moved their mask because they felt suffocated (44%) and third of them never felt bothered washing their hands (28%). Afro et al. (2020) found that 19% of their participants had to at times remove their masks due to difficulties breathing, also they showed barrier perception affected the variable of compliance with health protocols by 10.2% (p = 0.001). Silvano et al. (2021) showed that 39.3% of participants did not use their masks when exercising.

World Health Organization (WHO) (2022) advised people to wash their hands and use their masks to reduce the risk of COVID-19 infection. However, the low motivation of people in implementing these health protocols can be affected by others' behavior, the absence of law enforcement, and an unsupportive environment (Saehana et al., 2021).

More than 47% of participants in this study felt they easily got through the pandemic, and 69% felt they endured the pandemic, as the overall median score is high. Another study showed that 95.3% of the participants had positive efficacy in dealing with the pandemic (Afro et al., 2020). Their pre-existing behaviors and characteristics enabled them to have good knowledge and helped them to form health-promoting behaviors (Kamran et al., 2015). There is a need and a desire for an enhanced health promotion practice, as it can act as an important driving force for change (Johansson et al., 2010). Personally, an individual has to find ways to reorient themselves to focus more on possibilities than on existing barriers. One possible way is to think about health promotion as an empowering, holistic, and individualized approach applicable to any interaction instead of a new added-on task (Johansson et al., 2010). Individuals' confidence in their own abilities can determine how they behave, think, and react to any situation that befalls them, which shows that self-efficacy shows positive results.

In this study, the perception of the benefit of the majority of respondents is positive. Almost all of the individuals were aware of the benefits they would gain if they implemented health protocols, such as washing hands (58%) and keeping their mask on while communicating with others (46%). Benefit perception induced the level of compliance, as it helps carry out health protocol adherence. The other research found the same results (p = 0.03) and people with low compliance have low perceived benefits (Fikriana et al., 2021), which means that perceived benefits have a positive correlation with compliance. If the perceived benefits of a preventive measure against a disease are low, then the chances of measures to be taken for prevention will be lower. Recognizing the benefit of action is useful for suppressing the spread of the virus (Saehana et al., 2021). Enhancing the activities that can be done and still maintain the activity-related health should be the most frequently performed activity (Ashgar, 2021).

More than half of the participants chose to feel uncomfortable breathing with a mask rather than removing it and risking COVID-19 infection (70%) or infecting others (79%). Still, some respondents in other studies admitted that sometimes they found it difficult to keep their distance and follow other health protocols due to their housing situation (Kuntardjo & Sebong, 2020). In Supriyati et al. (2021), research respondents said that during their work in the market, it was difficult to interact with buyers or customers. The respondents also mentioned having a lack of reliable information about COVID-19 and experiencing many economic-related problems.

The participants in our study experienced a range of organizational and working conditions that negatively influenced their efforts to practice health promotion. The perceived gap between the desire to work more with health promotion and prevention and the perceived possibilities resulted in a sense of frustration and resignation accompanied by a feeling of disempowerment within the system (Johansson et al., 2010).

This study found that the interpersonal influence aspects significantly affected commitment, as some respondents still needed to remind by family and friends, 36% and 65% respectively. Therefore, they kept enough pandemic-related materials around the home (e.g., masks, hand sanitizers, hand soap, and disinfectant) (77%). Another study found that social norms and social models significantly affect commitment (p < 0.001) (Sanaeinasab et al., 2012). Sari and Fawzi (2021)'s study in Indonesia about adherence to health protocols showed that knowledge was significantly related to people adherence (p = 0.000). Also, the community felt the support of good community leaders (64.2%) (Wiranti et al., 2020). Corpuz (2021) rightly pointed out the involvement of a supportive government, a creative church and an adaptive public can help a community in adapting to the 'new normal', so an adaptive public can help a community to adapt to a crisis.

In this study, 79% of the participants committed to obeying protocols during the pandemic, and 84% followed regulations not only to prevent getting infected but also to protect their families; the median scores for commitment were high Some factors inhibited commitment, such as ignorance toward health protocols, and other factors supported it, such as those people who followed them. Dehdari et al. (2014) and Khodaveisi et al. (2017) indicated that health education seems to improve commitment to action significantly by enhancing perceived benefits and self-efficacy. Health education also decreases perceived barriers in the experimental group when compared to the control group. Adapting to new ways and habits provides an opportunity to move freely (Akbar et al., 2021) without increasing the risk of exposure to COVID-19.

Biopsychosocial complexity of a person interact with the environment and progressively transform the environment and are transformed by the environment over time. The health profession forms a part of an individual's interpersonal environment that influences their lives.

Self-initiative to reconfigure individual-environmental interactions is essential to change behavior. The greater the commitment to specific action planning, the easier it will be for healthy behavior to be maintained. Committing to planned action is less likely to be successful when an individual has more attractive competing demands. Individuals can change their thinking, behavior, and interpersonal and physical environments to help promote healthy behavior.

Conclusion

This study concludes that perceived benefits and previous health activities, as internal factors, and interpersonal and situational influences, as external factors, can positively affect commitment to promoting healthy behavior. A perceived barrier negatively affects commitment; it can minimize self-efficacy. It is recommended that nurses emphasize benefit perception and previous healthy behavior to enhance health commitment and to encourage others (such as family members, significant others, peers, and health workers) to establish a support system promoting healthy behavior. Meanwhile, other variables related to health behavior need further research.

Acknowledgements

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