OBSERVING COVID-19 PREVENTIVE BEHAVIOUR FROM THE SOCIAL COGNITIVE THEORY

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ABSTRACT

Background: Since the beginning of the COVID-19 pandemic, washing hands, wearing masks, and social distancing have become part of the new norm. It seems that such preventive behaviour is essential to "flattening the curve" of COVID-19.

Objective: observe the preventive behaviour during the COVID-19 pandemic in Indonesia based on social cognitive theory (SCT), namely self-efficacy, social influence, outcome expectation, and goals. The hypothesis is that these aspects predict COVID-19 preventive behaviour.

Methods: The study design included a cross-sectional questionnaire survey designed in the Sosci Survey, which was administered online to 1106 participants in Indonesia. The participants were asked to answer the questions regarding self-efficacy, social influence, outcome expectation, and goals of preventive behaviour. The Structural Equation Modelling (SEM) was conducted to test the hypotheses.

Results: Self-efficacy has a high positive impact on preventive behaviour. Most SCT aspects have a significant relationship with one another, such as self-efficacy as a predictor of social influence, outcome expectation, and goals. Additionally, self-efficacy and outcome expectation play an essential role in setting goals for a healthy lifestyle.

Conclusion: Recent evidence suggests that the social cognitive theory may account for the preventive behaviour of COVID-19 in Indonesia. Therefore, the findings may underscore the development of regulations aiming to improve the preventive behaviour of individuals during the pandemic.

Keywords: COVID-19, Indonesia, preventive behaviour, social cognitive theory

I. INTRODUCTION

COVID-19 is an abbreviation for Coronavirus Disease, which Coronavirus causes and was first discovered and reported in December 2019 (Coronavirus disease 2019; Rothan & Byrareddy, 2020). People infected by COVID-19 show common symptoms like suffering cold, fever, sore throat, tiredness, dry cough, or even severe symptoms such as difficulty breathing, chest pain, and multi-organ dysfunction (Singhal, 2020). If emergency action is not taken, COVID-19 can also cause death (Singhal, 2020). On 30th January 2020, there were 15,166 confirmed cases and 38 death cases (World Health Organization, 2020). The World Health Organization (WHO) declared a public health emergency of international concern on the same day. Since the first case on 31st December 2019 in Wuhan, China, the cases and deaths linked by COVID-19 have increased worldwide. On 11th March 2020, WHO declared that COVID-19 became a world pandemic (WHO, 2020). Since then, countries' governments have started to conduct the necessary actions to push and prevent the COVID-19 spread (Singhal, 2020).

Just before WHO launched its statement regarding COVID-19 as a global pandemic, Indonesia had confirmed the first death caused by COVID-19. The Indonesian government had also reacted to the WHO announcement by

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issuing emergency procedures for preventing the spread of COVID-19, for instance, providing the prevention information to the public. It included similar information provided by WHO (e.g. social distancing, using a mask in the crowd, appropriate hand washing; Ministry of Health Republic of Indonesia, 2020). Some studies revealed the prevention's effectiveness and not being exposed to COVID-19 (Singhal, 2020). Yet, the number of new cases and deaths has been still increasing. With conducting disease prevention behaviour such as in the COVID-19 pandemic situation, it is necessary to understand the whole mechanism of basic human behaviour. This study observed the circumstance related to the COVID-19 preventive behaviour in Indonesia from a broader perspective by replicating the Social Cognitive Theory (A. Bandura, 1983; Albert Bandura, 2004). Therefore, this study can contribute empirical evidence supporting public health stakeholders during the construction process of their COVID-19 prevention regulation in the future.

This study begins by laying out the theoretical dimensions of the research and looks at how the aspects of Social Cognitive Theory (SCT) affect human behaviour. Then, the researcher should explain the methodology used for this study in detail. Next, the findings of the research, focusing on how the aspects of SCT predict the COVID-19 prevention behaviour, will be described. In the final section, the results and the implications of these will be discussed by the authors

Theory

As explained previously, the authors will use the SCT of Albert Bandura to explain the relationship between several factors that influence human behaviour. According to Bandura (1994), four factors can predict behaviour: self-efficacy, social influence, outcome expectation, and goals.

SCT is the most influential theory of health behaviour, and it has been applied as the basis of interventions for dietary behaviour and smoking abeyance (Martín et al., 2014). Moreover, it has been used to explain human behaviour associated with health, such as physical exercise and preventing infectious diseases (Conner, 2015; Flammer, 2001; Schwarzer & Fuchs, 1996). Therefore, SCT will be applied in this present study to describe the preventive behaviour during the early stage of COVID-19 in Indonesia. All aspects of SCT and its evidence relating to human behaviour in dealing with COVID-19 will be explained in-depth in this part.

Self-efficacy

One of the critical concepts of SCT is the construct of self-efficacy (Zlatanovic, 2016). According to Bandura (1994), self-efficacy is defined as the mental state regarding the attitude toward an individual's ability to carry out an individual's plans or to perform a task successfully. Self-efficacy can be developed by four primary sources of influence: mastery experience, vicarious experience, verbal persuasion, and emotional state (Bandura, 1998).

The first way is through mastery experience. It happens when people try to do something new and complete it successfully (Li, 2020). People tend to believe that they can do something new if it is similar to something that they already accomplished in the past (Bandura, 2003). For instance, for personal fitness professionals, mastery experience is the most effective way to enhance client exercise self-efficacy. Starting with an easy training program that can be accomplished will build a mastery experience that can bring success to more challenging training programs (Jackson, 2010). In other words, self-efficacy can be strengthened through personal achievement, as long as success can be repeated (Luszczynska & Schwarzer, 2005). Bandura (2003) noted that mastering experience is the most effective way to have a strong sense of self-efficacy.

The second way is through vicarious experience provided by social competence models. Observing people similar to oneself successful achieving something will enhance the observer's beliefs that they can also reach it (Li, 2020). Conversely, seeing someone is unsuccessful in accomplishing something can threaten the observer's self-efficacy. The scope to which vicarious experience influences self-efficacy depends on how much like oneself the observer thinks the role model is (Bandura, 1994). For example, observing others choose healthy foods at the supermarket may increase self-efficacy to choose healthy foods (Li, 2020). Competent models' behaviour and thoughts can train the observers with powerful skills and strategies for environmental demands (Bandura, 1998).

Another source is verbal persuasion. When people are convinced verbally that they can accomplish a task, they are more likely to finish the job successfully (Luszczynska & Schwarzer, 2005). Self-efficacy beliefs can be increased through verbal persuasion by people with higher authority, like doctors, health educators, and trainers (Luszczynska & Schwarzer, 2005). For instance, a coach usually uses this strategy by telling the team that they will win the game and the competitor group is worse than them (Li, 2020).
The last source is an emotional state. According to Bandura (1998), people also rely partly on their emotions while judging their capabilities. For instance, when new clients at the gym know that others observe them, they become anxious. Consequently, it can threaten their self-efficacy (Li, 2020). This negative effect can be reduced by teaching them relaxation techniques to improve their self-efficacy (Jackson, 2010). In other words, when people do not have any doubt in a dangerous situation, they may feel experienced in dealing with this situation (Luszczynska & Schwarzer, 2005).

Further, self-efficacy plays an essential role in perceiving situations and behaving in response to different situations (Strecher et al., 1986). In the present case, self-efficacy will be used as a predictor of health behaviour change and maintenance. Conn (1998) has found that self-efficacy was the most vital determinant for health-oriented behaviour like daily exercise, dietary behaviour, and stress management.

Previous studies have established that self-efficacy strengthened understanding of how people adapt to healthy and unhealthy behaviour and change individual healthy behaviour (Bandura, 2003; Strecher et al., 1986; Zlatanovic, 2016). Lifestyle has a significant effect on human beings' physical and mental health (Flammer, 2001). In general, high self-efficacy people tend to believe that they have more control over their health and are more consistent with programs that attempt to increase their health, such as routine daily exercise and stop smoking (Flammer, 2001).

In addition, Isa et al. (2017) have proposed that self-efficacy is an essential psychosocial construct that may influence health behaviour to handle diseases. This research has shown a significant association between self-efficacy and health promotion interventions. Kasen et al. (1992) have shown that people with lower self-efficacy did not use condoms consistently during sexual intercourse. Bengel et al. (1996) support these findings, who found that high self-efficacy's belief in using condoms plays an influential role in sexual activities that pose an increased risk for transmission of AIDS.

Relating to the preventive behaviour of COVID-19, Lee and You (2020) found that self-efficacy belief plays an influential role in practising preventive behaviour in South Korea. In the previously mentioned study, people with self-efficacy's belief about precautionary behaviour are more likely to practice hand hygiene, such as using hand sanitisers and washing hands properly. Furthermore, people also tend to wear a facial mask when they are outside. Therefore, this evidence is relevant to be replicated for the preventive behaviour of COVID-19.

Social influence

Another aspect in SCT is social influence or as known as socio-structural variables. These socio-structural variables are considered to determine goal setting and affect self-efficacy (Conner, 2015). According to Bandura (2004), an individual has to overwhelm economic, social, and environmental barriers to achieve health-oriented behaviour. In addition, the study suggested that an individual might fail to have an active and healthy lifestyle due to the lack of physical activities in schools and communities.

In the context of COVID-19 preventive behaviour, there are social circumstances that ease autonomous motivation. For instance, people tend to follow friends or families applying the COVID-19 preventive strategies such as hand hygiene (Chan et al., 2020). Additionally, people also tend to maintain and keep physical distance from others that health institutions announce. Conversely, some social situations are negative to social cognition factors. For instance, instruction about the necessity of wearing face masks has been inconsistent in different ways that might depress individual autonomous motivations, such as questioning the effectiveness of wearing a face mask as a preventive behaviour of COVID-19 (Chan et al., 2020).

Outcome expectation

The outcome expectation explains beliefs related to a particular behaviour that lead to specific results (Shamizadeh et al., 2019). For instance, the idea is that when people quit smoking, it will reduce the risk of lung cancer (Schwarzer & Fuchs, 1996). Moreover, they have claimed that self-efficacy and outcome expectation has an essential role in adapting, maintaining healthy behaviour, and executing harmful habits.

First, people will adopt health-oriented behaviour and then apply a healthy lifestyle in their lives (Schwarzer & Fuchs, 1996). It has also shown that outcome expectation is a significant predictor of why people change their harmful lifestyle to a healthy one. Similarly, Stephens et al. (2015) surveyed how outcome expectancy in dietary behaviour varies among African Americans in Georgia and found that outcome expectations for eating fruits and vegetables were significant determinants.
A broader perspective has been adopted by Conn (1998), who conducted a study regarding the ability of self-efficacy and outcome expectancy to determine healthy behaviour amongst postmenopausal women. Conn (1998) found that outcome expectancy was not a significant predictor of physical exercise and dietary behaviour, but outcome expectancy significantly predicted stress management behaviour. In the context of preventive behaviour of infectious diseases, Wulfert and Wan (1995) have shown that outcome expectancy was a significant predictor of preventive lifestyle changes behaviour (condom use) among sexually active college students.

In the context of preventive COVID-19 behaviour, outcome expectancy assesses the worth and consequences of adopting new health behaviour (Lee & You, 2020). For instance, the media has brought attention to people who are not practising physical distance expressed fears of becoming stressed or isolated (Pakpour & Griffiths, 2020). Considering the consequences and benefits of practising/maintaining physical space, some people feel the emotional damage is a burden, and therefore, the new behaviour is not adopted (Pakpour & Griffiths, 2020).

**Goals**

According to Luszczynska and Schwarzer (2005), goals can be defined as plans and motives to behave. Before people start to change their behaviour, they tend to set personal goals. Goal setting is an effective way to change behaviour, and it can be considered a predictor of successful interventions (Epton et al., 2017).

People adopt goals because they have an intrinsic interest in changing their behaviour or have an outside interest in doing what they think others expect of them (Mann et al., 2013). A meta-analysis laboratory study conducted by Koestner et al. (2002) found that goal-directed behaviour occurs when people are intrinsically motivated to achieve their goals. Moreover, research with people at high risk for Coronary heart disease found that dietary behaviour changes occurred among those who were intrinsically motivated rather than extrinsically motivated (Pelletier et al., 2004). Koestner et al. (2002) can explain these views, which suggest that intrinsic motivation is a significant predictor of successful goal setting and behaviour change.

While goal setting requires determining what goal to reach and by what criteria people judge successful goal accomplishment, goal-striving is more about the process of planning and performing those behaviours to achieve those goals (Mann et al., 2013). To do so, people need to know what they can do to initiate the process to reach them. Mann et al. (2013) suggested more than one way and more than one opportunity to acquire it for any goal. It means that being aware of several ways supports people to be more resilient to difficulties that they may face. For instance, people want to lose weight, do regular physical exercises at the gym, walk once a week, and increase vegetable and fruit intake. This concept helps people achieve their goals in changing and maintaining health-oriented behaviour (Mann et al., 2013).

**COVID-19 preventive behaviour**

SCT has been widely applied in sports, education, and health (Flammer, 2001). This present study focuses on the implementation of SCT in the preventive behaviour of infectious diseases. For instance, proper handwashing hygiene (Rubin et al., 2009) and wearing a face mask when outside (Halloran et al., 2008) are the most often applied precautionary measures of infectious diseases.

Lee and You (2020) surveyed the early stage of COVID-19 in South Korea. They found that the importance of the psychological responses (e.g. self-efficacy's belief and outcome expectancy) is associated with behavioural responses. Furthermore, it also significantly affected the public's preparedness for COVID-19, such as wearing face masks, frequent handwashing with hand soap and hand sanitisers, reducing public transportation use, and cancelling the social events in the public domain. These findings have consequences not only for government pandemic strategies but also for understanding future infectious diseases.

The COVID-19 pandemic and its implications have highlighted the importance of understanding behavioural change. Observing others within a social network often affects whether people can adopt preventive behaviours like maintaining and keeping a physical distance (Chan et al., 2020). For instance, if people observe social media posts of their community practising physical space by using an alternative way of socialising, such as Skype, they tend to adopt the new behaviour (Chan et al., 2020).

In all the studies reviewed here, SCT is recognised as one of the most compelling theories to predict and explain human health-oriented behaviour. It can motivate people to adopt lifestyle changes that can be seen as preventive behaviour, mainly to prevent infectious diseases. Therefore, it is assumed that SCT can explain the behavioural phenomenon regarding COVID-19 prevention.
This study is designed to assess the following hypotheses that are described in Figure 1.

H1a: Self-efficacy affects the outcome expectation.

H1b: Self-efficacy affects goals.

H1c: Self-efficacy affects social influence.

H2: Outcome expectation affects goals.

H3: Social influence affects goals.

H4: Self-efficacy affects behaviour.

H5: Outcome expectation affects behaviour.

H6: Goals affect behaviour.

Figure 1.
The aspects of SCT and the hypotheses chart.

Research methods, including participants, study design, measurement, and procedure, will be explained in detail in the following sections.

II. METHOD

Participants

Identify the aspects of SCT (self-efficacy, social influence, outcome expectation, and goals) that affect the preventive behaviour of COVID-19 in Indonesia, and a questionnaire survey was conducted. This online questionnaire was created with the software Sosci Survey. Messaging service such as WhatsApp was used to distribute the questionnaire survey. In addition, the snowball sampling technique was used, in which existing participants invited prospective participants from their social circle.

A total of 1106 participants (439 men and 667 women, aged 17 to 70 years old) completed the questionnaire after signing informed consent, between 19th and 22nd May 2020. Data was collected from 29 out of 34 provinces in Indonesia (most participants lived in Jakarta, the capital city of Indonesia and the fewest participants lived in Southeast Sulawesi). Moreover, the information about the participants’ education level (0.5% elementary school, 0.2% junior high school, 22% senior high school, and 77.4% college degree) and job (26. 1% college students,
32.8% private-employees, 20.5% civil servants, 4.8% entrepreneurs, 0.8% soldiers and 14.9% others) were collected.

**Study design**

A cross-sectional research survey was used in this study. The questionnaire was designed to measure the following constructs: Self-efficacy, social influence, outcome expectation, and goals affect the COVID-19 preventive behaviour. The structured questionnaire consisted of questions that covered several areas: (1) consent form; (2) socio-demographic data; (3) known information about COVID-19; (4) attitude toward COVID-19; (5) Preventive behaviour against COVID-19; (6) Social influence; (7) Outcome expectation; (8) Goal; (9) Self-efficacy and (10) open questions that asked about the barriers in applying COVID-19 preventive behaviour.

**Measures**

**Self-efficacy**

The first question part was designed to find out how self-efficacy affects the COVID-19 preventive behaviour. Participants were asked to respond to 5 questions using a four-point Likert scale statement. For example, "I can always use a face mask, even if it is inconvenient for me". These five items' scale points were labelled, ranging from "strongly disagree" to "strongly agree". The Cronbach Alpha coefficient for the five items was 0.84, which indicates acceptable internal consistency reliability.

**Social influence**

The second question part was designed to identify how social influences such as peer and family affect the COVID-19 preventive behaviour. Participants responded to 3 items in this part on a four-point Likert scale from "strongly disagree" to "strongly agree". For example, "My family reminds me to follow the guidelines of COVID-19 prevention, especially during the COVID-19 outbreak". Items were reliable (Cronbach's alpha = .80).

**Outcome expectation**

The third question part was designed to ascertain the participants' outcome expectations in applying COVID-19 preventive behaviour. This part consists of 7 questions with a four-point Likert scale. All scale points were labelled, ranging from "strongly disagree" to "strongly agree". For example, "If I always wash my hands after going outside or before eating, I protect myself from COVID-19". The Cronbach Alpha coefficient for the seven items was 0.91, which indicates acceptable internal consistency reliability.

**Goals**

The questioning part was created to determine how goals affect the COVID-19 preventive behaviour. Participants responded on four items with a four-point Likert scale that were labelled ranging from "strongly disagree" to "strongly agree", such as, "If I always wash my hands after going outside or before eating, I protect myself from COVID-19". One item was postulated in a negative sentence. Things were reliable (Cronbach's alpha = .65).

**COVID-19 preventive behaviour**

This part was designed to identify participants' COVID-19 preventive behaviour. Participants responded to 6 questions with a four-point Likert scale. All scale points were labelled, ranging from "strongly disagree" to "strongly agree", for instance, "I always use a face mask when I leave my house". Items were reliable (Cronbach's alpha = .71). The initial questionnaire was pre-test with a convenience sample of 30 participants. Data for the pre-test were collected on 17th May 2020. There was no difference between the questionnaire during the pre-test and for the main study.

### III. STATISTICAL ANALYSIS

The independent variables were self-efficacy, social influence, outcome expectation, and goals. The dependent variables were the COVID-19 preventive behaviour. The statistical software R was used to analyse the data. Structural Equation Modelling (SEM) was conducted to test the hypotheses. Missing values are handled with complete information maximum likelihood (Enders & Bandalos, 2001). First, the multicollinearity of the data was proved by conducting the correlation analysis. The very high bivariate correlations and multicollinearity among the variables can lead to the obfuscation of the result due to the high redundancy of information (Weston & Gore, 2006). The Henze-Zirkler test was conducted to prove the multivariate normality in the data (Henze &
Zirkler, 1990). If the assumption of multivariate normality of the data was violated, the SEM was later run for maximum likelihood estimation with robust standard errors to estimate our model (Lai, 2018).

The five models were orientated to fit indices for evaluating the estimated results: Chi-Square Statistic ($X^2$), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (SMSEA), and Standardised Root Mean Square Residual (SRMR) (Backhaus et al., 2015). The COVID-19 preventive behaviour model remains fit well with the model of SCT if $X^2$ is not significant, CFI higher than .90, TLI higher than .90, RMSEA lower than .60, SRMR lower than .08 (Weston & Gore, 2006). The result of the $X^2$-test is additionally observed with an alternative paradigm by dividing $X^2$ by the degree of freedom.

IV. RESULTS

Preliminary statistical analysis

The product-moment correlation analysis showed significant moderate relationships between variables of the present study (Table 1). According to Weston and Gore (2006), the assumed multicollinearity can be rejected to carry out the SEM. However, the Henze-Zirkler test showed that the assumption of multivariate normality in the data could not be proven $H_Z = 31.756$, $p < .001$. The approximated model result was estimated with the maximum likelihood estimation with robust standard errors (Lai, 2018).

Table 1. Correlation, Variance, and Covariance between variables ($N = 1106$).

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<tr>
<td>1. Self-efficacy</td>
<td>3.51 (.46)</td>
<td>.20</td>
<td>.40**</td>
<td>.67**</td>
<td>.43**</td>
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<tr>
<td>2. Social support</td>
<td>3.43 (.62)</td>
<td>.11</td>
<td>.38</td>
<td>.38**</td>
<td>.19**</td>
</tr>
<tr>
<td>3. Outcome expectation</td>
<td>3.58 (.44)</td>
<td>.14</td>
<td>.10</td>
<td>.19</td>
<td>.44**</td>
</tr>
<tr>
<td>4. Goal</td>
<td>3.66 (.42)</td>
<td>.08</td>
<td>.05</td>
<td>.08</td>
<td>.18</td>
</tr>
<tr>
<td>5. CP Behaviour</td>
<td>3.43 (.46)</td>
<td>.12</td>
<td>.13</td>
<td>.10</td>
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Note. CP Behaviour: COVID-19 preventive behaviour. Numbers on the upper right of the diagonal show the correlation (** $p < .001$), lower left covariance, and diagonal variance, respectively.

The results showed that the measuring items for each variable have a sufficient commonality. It means that the variables in this study were reflected in the things that are being asked. In addition, through Cronbach's alpha, the variables of this study also had internal stability between .65 to .91.

Inference statistic

SEM results were also used to test the hypotheses and are illustrated in Figure 2. In the first step, SEM showed the significant effect of self-efficacy on outcome expectations, goals, and social influence. Moreover, the outcome expectation had a substantial impact on objectives. However, social power does not show a significant effect on goals.

In the next step, SEM also examined the effects of self-efficacy, outcome expectations, and goals on COVID-19 preventive behaviour. The results of SEM revealed that although outcome expectations and goals did not affect COVID-19 preventive behaviour, self-efficacy showed a significant effect on this behaviour.

The result of the fittest model was $X^2(267) = 1018.387$, $p < .001$; CFI = .920; TLI = .910; RMSEA = .058 and SRMR = .058. These indicators showed that the results of the empirical model analysis have conformity with the models compiled at the theoretical level, except for the Chi-Quadrat test. Therefore, hypotheses 1a-1c, 2, and 4 can be accepted. However, hypotheses 3, 5, and 6 were not supported by the results.
The current study aimed to explain the COVID-19 preventive behaviour in Indonesia. It is essential to observe behaviour and its predictive factor. With the concept of SCT, the researcher investigated whether the SCT aspects can explain preventive behaviour during the early stage of COVID-19 in Indonesia.

Interpretation

To test the hypotheses, the researchers used SEM to analyse the whole process of determining self-efficacy, outcome expectations, goals, and social influences on COVID-19 preventive behaviour. The results revealed that self-efficacy has a high impact on COVID-19 preventive behaviour. Previous studies reported that self-efficacy affects preventive behaviour such as increased use of contraceptives (Hamidi et al., 2018), smoking abstinence (Perkins et al., 2012), reduction of alcohol and tobacco use in adolescents (Zullig et al., 2014), and maintenance of fitness (Scioli-Salter et al., 2020). However, if this relationship is indirect, the authors cannot find any indication of the effect of self-efficacy on COVID-19 preventive behaviour through outcome expectations. Social influence indicates that other possible factors could explain the relationship between self-efficacy and COVID-19 preventive behaviour. Rovnak (2002) modified SCT and found that social support can influence physical activity through self-efficacy and self-regulation.

Thus, the ability of outcome expectations, goals, and social influence in predicting COVID-19 preventive behaviour should be investigated by researchers if the effect pathways of the predictors are modified. These modifications can also compare the fittest model to explain which factors can influence the preventive COVID-19 behaviour.

However, most of the factors assumed to predict COVID-19 preventive behaviour have significant relationships with one another, such as self-efficacy. It can predict outcome expectations, goals, and social influence. Moreover, self-efficacy and outcome expectations are core variables in predicting the plans for maintaining a healthy lifestyle. According to Luszczynska and Schwarzer (2005), if someone is defining their goals, self-efficacy, on the one hand, will provide a decision on how to execute the behaviour confidently by considering their past success in similar situations and projecting this experience to the future. On the other hand, the projection of success experience also assumes the likely consequences if they exhibit the behaviour.

Note. The Results of SEM (N = 1106) with the indication model fit $2(267) = 1018.387, p < .001; \text{CFI} = .920; \text{TLI} = .910; \text{RMSEA} = .058$ and $\text{SRMR} = .058$. The value in bold has a significant value $p < .001$. V. DISCUSSION

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processes meet and manifest into the goals set from decisions of previous considerations, like the results in this study.

Furthermore, self-efficacy can motivate individuals to set goals through the influence of social structures in their environment (Luszczynska and Schwarzer, 2005). In the self-efficacy adjustment process, there is a possibility if someone in the past has been carrying out healthy behaviour, they will receive support from their social environment. They will be convinced that in this COVID-19 situation, they will also positively influence their social environment. Meanwhile, if they get social support, they will be more convinced that the goal is in line with the expectations from the social experiments.

However, this study has found a slight difference with the concept mentioned above. When self-efficacy can significantly predict social influence, there is no significant relationship between social impact and goals. It can be interpreted that, in reality, participants may not get the support like the concept mentioned earlier. Therefore, the goals are more influenced by self-efficacy and outcome expectations which tend to be more individual and self-evaluative (Luszczynska and Schwarzer (2005).

In the context of the methods that were used in this study, the SEM has some advantages. Besides calculating the structure in testing the effect of independent variables on dependent variables, the SEM also estimates the system's quality, known as confirmatory factor analysis. As previously shown, the loading factor of each variable is adequately weighted. Therefore, the internal validity of the measurement instrument can be justified.

For reliability, variables with Cronbach's Alpha at this level can be categorised as variables with stability that are "questionable" to "excellent". However, Cronbach's alpha less than .7 is not a decisive factor to decide that the variable does not measure what it should measure (Schecker, 2014). The quality of Cronbach's alpha must consider the number of items and observe the similarity of the meanings of the items compiled from these variables. Therefore, the researcher did not change the results of the factor measurement analysis presented in parallel from SEM.

Limitations and Further Research

This study includes several limitations that need to be addressed in future research. First, this study was conducted using an online questionnaire. Hence, those without internet access could not have participated in the study. Second, this study only relies on the SCT model, even though previous studies have modified the model and can obtain more transparent and more plausible information on the relationship between predictors and COVID-19 preventive behaviour. Third, the assessment of study variables has critical internal validity, such as the goal aspect in the SCT. Therefore, it could be possible that the measurement instrument for the goal in this study measured other elements and did not precisely measure the goal in the SCT aspect. Furthermore, the data collection relied on participants' self-report, which may lead to limitations because of the lack of reflective ability.

Future research should analyse other factors that can impact the COVID-19 preventive behaviour by modifying the SCT model or integrating it with similar models. For instance, by including the aspect fear of COVID-19 that observes whether people see the COVID-19 as a severe threat. Moreover, further research should consider how individuals' medical histories and educational backgrounds may affect the COVID-19 preventive behaviour. In addition, future studies should observe how individuals use the online information sources concerning the COVID-19 (e.g. in the official website from the government and social media) and how it influences preventive behaviour. It would be useful to specify the preventive behaviour into hygiene care intentions and self-isolating intentions in future investigations. It would allow researchers to observe how self-efficacy affects these two aspects as COVID-19 prevention.

Implications

This current research contributes to the literature on understanding human preventive behaviour during pandemics such as COVID-19. With the concept of SCT, it was observed whether the SCT aspects could elucidate preventive behaviour during the early stage of COVID-19 in Indonesia. Our findings highlight the impact of self-efficacy on COVID-19 prevention. Moreover, it was found that SCT aspects such as self-efficacy, social influence, outcome expectation, and goal interact with each other. Self-efficacy and outcome expectations can be seen as essential predictors for setting the purpose of a healthy lifestyle.
The COVID-19 pandemic requires sustainable behaviour changes and long term strategies. To enhance the COVID-19 preventive behaviour, the government can increase the quality and quantity of information about how to practice and maintain the preventive behaviour. In addition, the requirements from the government during this long period are extreme, for instance, social distancing and wearing a face mask. It can cause severe implications for the freedoms and well-being of the community. Therefore, the government should appreciate the individuals who practice COVID-19 preventive behaviour correctly with positive feedback.

Furthermore, the results of this study can help in promoting preventive and healthy behaviour on social media. If the media does not promote the COVID-19 preventive behaviour, it will cause cognitive dissonance from actors in the media during this outbreak. It will interfere with the formation of self-efficacy, which is related to the COVID-19 prevention effectiveness.

VI. CONCLUSION

The current study provides new insight into the relationship between self-efficacy and the COVID-19 preventive behaviour. This study's findings clarify the relationship between self-efficacy, social influence, outcome expectations, goals, and COVID-19 preventive behaviour. The results of this study are congruent with the literature on human preventive behaviour towards infectious diseases. They suggest that the level of self-efficacy is associated with the COVID-19 preventive behaviour. Additionally, other aspects of SCT like social influence, outcome expectation, and goals interact. Finally, these findings provide a starting point and clear direction for the government to develop concrete public health strategies to encourage the COVID-19 preventive behaviour in Indonesia.

Acknowledgement

We would like to thank all participants who contributed to this study.

Disclosure statement

The authors reported no potential conflict of interest.

VII. REFERENCES


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