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Editorial Note: Human Behavior and COVID-19

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1. Introduction

It is with great honor to be appointed as the next Editor-in-Chief by Dr. Corina Riantoputra. In my first Editorial as Editor-in-Chief of Makara Human Behavior Studies in Asia, I will continue the tradition in our journal by commenting on my predecessor. She became the Editor-in-Chief in 2012 when the journal was largely a university journal in Bahasa Indonesia that publishes all types of articles from the social sciences and humanities. A significant number of manuscripts submissions back then were from authors from Universitas Indonesia. She led and the journal grew from a local university journal to a national journal, and now an international journal. The journal slowly gains recognition. She led and started to attract submissions outside the university to gaining national recognition. We were not very known outside Indonesia back in 2012 when she started leading the journal, but now Makara Human Behavior Studies in Asia regularly received articles from the Asia region.

I am grateful for her assistance in teaching me how to edit a multidisciplinary journal. Before taking a position as Editor, I have only been reviewers of this journal and other journals in my discipline, i.e. clinical psychology. She taught me from the ground-up, and in the past two years I have tried to learn as quickly as possible to be a good Editor. In the coming years I will continue her work to improve international recognition of the journal and increase the quality of manuscript submissions. Quality submissions with methodological and statistical rigor are the only guarantee for doing good science.

Beside stronger methodological and statistical rigor, we have to acknowledge that Asia is large and heterogeneous. Understanding the result of a human behavior research without knowing its socio-geographical context is difficult because human behavior can be very different depending on socio-geographical context. Coming from Indonesia I understand very well that generalizability in human behavior studies is an intricate issue. Indonesia has around 300 ethnic groups, 700 local languages, and only a minority of the populations is a native speaker of its official language, Bahasa Indonesia. To illustrate, I am going to use the help-seeking behavior of going to a psychologist as an example. I am a practicing clinical psychologist in a university clinic called *Lembaga Asesmen dan Intervensi Psikologi*, Faculty of Psychology, Universitas Indonesia, Depok, West Java. We have a long waiting list of potential clients/patients. Thus, research on waiting list is important. However, my other colleagues working in similar university clinic in other cities such as Universitas Sumatera Utara in Medan and Universitas Airlangga in Surabaya do not have a problem with waiting list, and thus, research on waiting list is entirely irrelevant. They are rather concerned about the stigma of going to a psychologist there and help-seeking behavior. Same country, similar university clinic setting, but entirely different behavior. Therefore, starting from the next issue in December 2020, we will ask authors to add a Research in Context box to help readers understand the local context in which the study is conducted, i.e. why the study is important locally and the implication of the findings locally.

2. Human Behavior Studies and COVID-19

As we all know humanity as a whole is now facing a pandemic from the COVID-19. Even though it is primarily a health rather than social crisis, findings from human behavior studies are incredibly relevant. The present strategies in managing the crisis have primarily focused on human behavior changes, specifically physical distancing policy. The policy advised people to self-quarantine by staying at home, working at home, and only go out for necessary items such as grocery shopping. However, there are particular challenges in persuading a mass of people from changing their behavior to isolate themselves for more than just one or two days.

Yet it is incredibly important that physical distancing behavior is conducted well. Explosion of cases of COVID-19 can be traced into particular cases. For example, in South Korea approximately 50% of COVID-19 cases can be tracked to one individual and one superspreading event (Shim et al., 2020). In Japan there is a reported case of a man who upon knowing his test result, he deliberately goes into public places to spread COVID-19 to as many people as possible and at least two people in contact with him have tested positive ("Infected man in Japan who wanted to 'spread virus' dies," 2020). In Indonesia there is a reported case of a woman with COVID-19 who escaped from isolation room in hospital helped by her family because she did not feel sick (asymptomatic) and is afraid that she will get sicker in the hospital (Pahrevi, 2020). These are examples of cases that went reported, we do not know how many people are infected due to such human behavior.

Therefore, as a journal focusing on studies of human behavior in Asia, I feel that the journal should contribute by summarizing relevant literature on the topic of human behavior related to the pandemic. Because my expertise is in the clinical psychology discipline, I have chosen to discuss the individual mental health impact of physical distancing policy and how to make self-quarantine a new habit. Both are aimed at doing sustainable physical distancing at the individual and policy maker level.

Hopefully, this would be helpful for policy makers in Asia.

3. Loneliness as the Mental Health Impact of Physical Distancing Policy

The most direct psychological impact of physical distancing policy is the experience of social isolation, or the feelings of loneliness. The most accepted definition of loneliness or perceived social isolation is the dissatisfaction with the discrepancy between desired and actual social relationships (Hawkley & Cacioppo, 2009; Peplau & Perlman, 1982). Loneliness is not synonymous with being alone. The emphasis is on the subjective feeling of discrepancy. For example, a person can be surrounded by people but if he is not connected, he will feel lonely. On the other hand, a person can stay alone in their room, but if he stays connected to others via telephone or other devices, he will not feel lonely.

The impact of loneliness on both mental and physical health is profound. A meta-analysis of 148 studies shows that the impact of loneliness on premature mortality is comparable to well-established risk factors of mortality such as obesity, substance abuse, and violence (Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015). The most direct impact of loneliness on mental health is depression (Heinrich & Gullone, 2006), which I also have found (Jaya et al., 2017). Depression itself has been shown to be a risk-factor of multitude of health outcomes. For example, depression has been shown to be a predictor of adverse health outcome in people with diabetes (Black, Markides, & Ray, 2003), heart attack in people with hypertension (Cohen, Madhavan, & Alderman, 2001), and lack of recovery following surgery (Shyu et al., 2008). A meta-analysis of up to 62 studies has shown that depression is associated with the elevation of proinflammatory cytokines, particularly interleukin-1 (IL-1), interleukin-6 (IL-6), and C-Reactive Protein (CRP) (Howren, Lamkin, & Suls, 2009). Furthermore, a meta-analysis of up to 62 studies has shown that depression is associated with the immune system, specifically there is an elevation of proinflammatory cytokines, such as IL-1, IL-6, and CRP (Howren et al., 2009). However, one most relevant study to be discussed during the COVID-19 pandemic is a study that examines both loneliness and depression and its relation to the immune system (Häfner et al., 2011). The study examines 1547 subjects consisting of depressed and non-depressed individuals from a population-based sample in Germany. They used standard questionnaires to classify participants into depressed and non-depressed groups, as well as socially isolated and socially integrated groups. In addition, they measured proinflammatory cytokines, including IL-6 and CRP. They found that male who are both depressed and socially isolated have significantly higher IL-6 and CRP than other subgroups. This finding is especially relevant during the pandemic because COVID-19 has been speculated to induce a cytokine storm syndrome causing hyperinflammation (Mehta et al., 2020). Furthermore, a non-peer-reviewed preprint article has shown that the severity of COVID-19 is associated with elevated IL-6 and CRP, as well as other inflammatory markers (Gong et al., 2020). Therefore, being watchful for signs of social isolation and depression during the physical distancing policy in the pandemic is relevant because of its relation to inflammatory markers.

There are plenty of ways to deal with social isolation. We can learn about strategies dealing with social isolation from studies on prisoners of war who faced severe social isolation and successfully survived into the old age. Segovia and colleagues examine a longitudinal data of almost 40 years following up American soldiers who were prisoners of war from the Vietnam war for predictors of positive physical and mental health (Segovia, Moore, Linnville, Hoyt, & Hain, 2012, Segovia, Moore, Linnville, & Hoyt, 2015). Positive physical health is measured comprehensively in their study from questionnaires regarding physical functions, biomarkers, lung function, walking speed, and telomeres. Positive mental health is defined in their study as not receiving any psychiatric diagnosis from time of repatriation (around 1973) until time of measurement (2010). Beside physical and mental health problems presenting before the time of repatriation, they found that age, sleep, and optimism are significant predictors of positive physical and mental health. The authors explained that optimism can be obtained by reducing three cognitive patterns: a) personalization (thoughts are changed from "it's all my fault" to less personalized ones, because rarely a negative event is 100% caused by one factor), b) permanence (thoughts are changed from "this pandemic going to last forever" to "this pandemic temporary" or "this pandemic will be over soon"), and c) pervasiveness (thoughts are changed from "this pandemic is going to ruin everything" into "this pandemic is going to ruin [name specific areas of life with geographic and time modifier]").

Therefore, it is important to follow the WHO guideline to keep in touch with people regularly via email, telephone, social media, or other communication devices. In addition, it is important to stay optimistic during this situation by paying attention to cognitive biases such as personalization, permanence, and pervasiveness.

4. Habitualizing Physical Distancing Behavior en Masse

Knowing cognitively to stay home and attempting to do physical distancing behavior are not enough. Habit rather than intention guides behavior (Verhoeven,

Adriaanse, Evers, & de Ridder, 2012). However, modifying people's habits en masse is never easy. One of the most researched areas in mass habit modification is on healthy behavior campaigns. Unfortunately, a review on this topic published in the journal Behavioral Science and Policy found that most interventions have had limited success on changing enduring behaviors en masse and had only limited short-term benefits (Wood & Neal, 2016). In their review they identified elements of intervention that worked to form new habits and break old habits based on past success and failures of health campaigns. They summarized that habit formation requires three principles: frequent repetition, recurring contexts and cues, and intermittent rewards. First, frequent repetition of behavior creates enduring habits, however there is no single formula for everyone. They found successful campaigns in repetition require between 18 to 200 days. Interventions can encourage repetition by showing advertisements of people doing repetition of the desired act of behavior. For example, to promote physical distancing policy, videos or images of famous people staying at home repeatedly for several days can be used. Second, recurring stable contexts and cues are required so that the new behavior can be associated with it. The new behavior can "piggyback" the old behavior. For example, create a campaign encouraging people to stay at home on the weekend because weekend is time for family. Third, intermittent rewards encourage people to repeat the new behaviors. The most effective rewards are those that reward very specific behaviors (e.g. staying at home for 3 days straight), worthy enough to do the new behavior (e.g. receiving coupons or discounts), and uncertain (e.g. no guarantee that staying at home for 3 days will lead to the reward).

In addition, breaking old habits requires three principles: cue disruption, environmental reengineering, and vigilant monitoring. First, cue disruption is a natural change of situation in which the old behavior is associated. In the context of COVID-19, this is not very relevant because the situation has changed for everyone. However, there can be interventions to encourage the creation of new habits (e.g. by texting everyone to stay at home because of COVID-19). Second, environmental reengineering consists of adding friction to unwanted behavior (e.g. intermittent and random closing of places of social gathering) and removing friction from wanted behavior (e.g. discounts on take-away food, discounts on buying two items at once in the supermarket (to stock, not to hoard)). Third, vigilant monitoring can be implemented by reminding individuals to control unwanted behaviors and stay with the new behavior (e.g. randomly texting people every couple of days to remind them to stay at home, ask places of social gathering place to put posters explaining why they should not be there (ie similar to warning signs on cigarette packages), ask media and celebrities to echo the message of staying at home every few days).

5. Conclusion on Sustainable Physical Distancing Behavior

Doing physical distancing behavior sustainably is imperative because of the nature of the disease in which one case can spread to others exponentially, and it is difficult to predict when the pandemic will end. However, loneliness is a risk-factor of physical distancing, which may lead to depression. Furthermore, as we learn from the healthy behavior campaign literature, it is not realistic to expect people to engage in physical distancing behavior sustainably with no breaks because it is new. Without making it a habit, people may just ignore and return to the old habit of not doing physical distancing. Therefore, it is important to advocate sustainable physical distancing behavior, which is by turning it into a habit and advocate people to do it sustainably by increase social contact via communication devices.

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