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The Influence of COVID-19 Stress on Psychological Well-Being Among Vietnamese Adults: The Role of Self-Compassion and Gratitude

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COVID-19 has become an epidemic affecting all aspects of human life. Vietnam is now encountering the COVID-19 second wave, which puts the mental health of Vietnamese people at risk. Due to the adverse psychological effects of the COVID-19 global pandemic on human psychological well-being in these challenging times, the aims of this study are to examine the relationship between self-compassion and psychological well-being and the role of gratitude and COVID-19 stress as a multimediators model in a cross-sectional study. Participants include 509 Vietnamese adults ($M_{\text{age}} = 31.71$; $SD = 7.28$ years) recruited through an online survey. A 26-item Self-Compassion Scale was used to measure self-compassion, gratitude was measured by the 6-item Gratitude in the COVID-19, psychological well-being was measured by the World Health Organization Well-Being Index, and the COVID-19 Stress Scale was used to measure stress and fears symptoms caused by the pandemic. The results support 3 main findings: (a) self-compassion has a direct influence on the psychological well-being (effect = 0.50, $p < .001$, 95% confidence interval [CI; 0.43, 0.57]), (b) the mediating role of gratitude in this model was significant (effect = 0.07, 95% CI [0.04, 0.10]), and (c) the mediating role of COVID-19 stress and fears in this model was also significant (effect = 0.02, 95% CI [0.01, 0.04]). The study's results also show that increasing self-compassion and gratitude could help to improve psychological well-being and reduce the influence of COVID-19 stress and fears on the individuals' mental health.

Keywords: self-compassion, gratitude, COVID-19 stress, psychological well-being, COVID-19 Stress Scale

The coronavirus (COVID-19) disease began its outbreak around the world in Wuhan, Hubei Province, China, in December 2019. This virus has been considered the primary cause of serious respiratory illness that on January 31, 2020, promptly became an epidemic (Adhikari et al., 2020, p. 1). Tedros Adhanom Ghebreyesus, the Director-General of the World Health Organization (WHO), regarded the great impacts of this virus on humanity multidisciplinary that "COVID-19 is not just a public health crisis, it is a crisis that will touch every sector-so every sector and every individual must be involved in the fight" (WHO, 2020). Even though Vietnam is located very close to China geographically and has a high volume of trade with China, Vietnam is known as one of the most successful South-East Asian countries

in this epidemic. Vietnam has achieved successful containment with effective public health policies, such as immediate border closure with China on January 24, 2020, school temporary shutdown, launching of Vietnam health mobile apps on February, and nation-wide lockdown on March (Huynh, 2020; La et al., 2020). These are the measures that Vietnamese government took to contain the virus during its first wave with impressive successes. As of April 4, Vietnam had 239 infected cases in which 90 patients recovered, and 149 were treated with no deaths recorded (La et al., 2020, p. 3).

However, the second wave has just come globally, and sadly, Vietnam now has more COVID-19 confirmed cases and deaths. From January 24 to August 10, 2020, there have been 841 infected cases with 13 deaths in Vietnam (WHO, 2020). Vietnam is still bravely fighting against this global crisis, taking effective measures to halt the virus and support people's lives with economical sustainability. When we conducted our research using the online survey method to explore the association between COVID-19 stress and Vietnamese psychological well-being, Vietnam underwent the virus second wave with the reportedly increasing cases.

The COVID-19 pandemic indeed is now perceived as the global crisis that has posed not only physical health concerns but also mental health considerations to those who either contract directly or indirectly the disease. Pfefferbaum and North (2020) claimed that COVID-19 has resulted in "widespread emotional distress and increased risk for psychiatric illness" (p. 510). As this virus continues to spread globally and might be lingering among humans

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with intensive physical and mental effects for years, extensive research in public mental health has shown that emotional distress could happen to everyone (Pfefferbaum & North, 2020). Researchers have expressed a concern that posttraumatic stress disorder is arising from exposure to trauma as a consequence of this crisis.

According to Pfefferbaum and North (2020), people with direct contact with the disease, such as health care providers, are vulnerable to emotional distress in the pandemic due to their risk of exposure to the virus, worries about getting their loved ones infected, and concerns about self-protection during stressful and long-haul work shifts. Other vulnerable groups, including the elderly and people with underlying medical, psychiatric, or substance use issues, are also at high risk for adverse psychological problems. Brooks et al. (2020) did a study on psychological sequelae demonstrating that quarantined people and health care providers face many emotional issues: stress, depression, irritability, insomnia, xenophobia, confusion, anger, frustration, boredom, and stigma associated with self-isolation. Brooks et al.'s (2020) research indicates that these outcomes have persisted even after the lockdown was lifted. Therefore, it is essential to further investigate the potential mental health problems caused by this global crisis across the world, including Vietnam where the status quo of virus containment has evolved with more reported cases of COVID-19 and the presence of deaths.

Our research presents a sense of urgency for more attention to the current status quo of Vietnam dealing with the second wave of COVID-19 as Vietnam is reopening with great caution by continuing international travel restrictions and widespread contact-tracing and nationwide testing approaches (Jha, 2020). The government also works closely with scientists and researchers to contain the virus effectively while the social activities, such as restaurants, bars, malls, cafes, and schools, are slowly resuming (Jha, 2020). However, recently there has been a virus outbreak in Da Nang, the central beach resort city of Vietnam when it started to resume some international flights in July. After 3 months with no cases, Vietnam is at risk of widespread coronavirus infection with 30 reported cases (BBC News, 2020). This event warns of the new spreads of coronavirus across the country, which certainly causes massive anxiety among Vietnamese people about the possible nationwide lockdown to happen.

Self-Compassion and Psychological Well-Being

Self-compassion was defined by Neff (2003b) as an ability to understand deeply and mindfully the self when "suffering occurs through no fault of one's own" and "when the external circumstances of life are simply hard to bear" (Neff, 2011, p. 4). Self-compassion helps people learn about suffering that originates from their personal mistakes, failures, and inadequacies. According to Neff (2003b), there are three fundamental components of self-compassion: self-kindness, feelings of common humanity, and mindfulness. First, self-kindness implies the tendency to be caring and understanding about ourselves over being severely self-judgmental (Neff, 2011). The second is the sense of common humanity that engages individuals with realizing that everyone fails and constantly makes mistakes, which is normally inevitable. It indicates a sense of self-acceptance and that we are imperfect and being or feeling inadequate should be tolerated (Neff, 2011). Third, mindfulness illustrates an awareness of every present mo-

ment in a contemplative manner, and thus we with mindfulness will be able to critically ruminate on undesired aspects of ourselves and our lives (Neff, 2011).

According to Neff (2003a), the mindfulness component of self-compassion refers to the capacity to have mental balance while people are facing stressful circumstances. In the practice of mindfulness, "awareness and attention to the present moment are accompanied by a compassionate and kind attitude towards the objects of experience" (Voci et al., 2019, p. 340). Furthermore, mindfulness can cause lesser degrees of overidentification, avoidance strategies, and judgmental attitudes. These psychological processes are part of a self-compassionate attitude (Voci et al., 2019). Hollis-Walker and Colosimo (2011) believed that mindfulness is key to promote self-compassion and, thus, self-compassion should be one of the potential mechanisms through which mindfulness is connected to well-being. Hollis-Walker and Colosimo's (2011) research demonstrates that self-compassion mediates the connection between dispositional mindfulness and total scores of psychological well-being. Self-compassion also has a great contribution to the effect of meditation practice on psychological well-being.

There are extensive research studies on self-compassion that demonstrate incredible benefits of this competency for psychological health, encompassing significantly positive association with life satisfaction, emotional intelligence, social connectedness, learning objectives, wisdom, happiness, optimism, less depression, anxiety, xenophobia, and perfectionism (Neff, 2009). Importantly, Gilbert (1989) and Neff (2011) claimed that self-compassion helps deactivate the threat system, which is associated with feelings of insecurity, defensiveness, and the limbic system. Instead, it supports the self-soothing system that is connected to feelings of secure attachment, safeness, and the oxytocin-opiate system (Neff, 2011). Hence, self-compassion contributes positively to psychological well-being, as it supports people's sense of safeness and security and reduces negative feelings, including stress, anxiety, and depression.

A study by Allen et al. (2012) indicates that high self-compassionate people adopted a compassionate mindset, which allowed them to cope with challenges and stressors by treating themselves with care and kindness. They learned that their situations were part of the greater human experience, and, therefore, they did not allow themselves to be carried away by strong and negative emotions (Allen et al., 2012). From the aforementioned theoretical inferences and empirical pieces of evidence, we can see that there has been a correlation between self-compassion and the individuals' psychological well-being.

The Multimediator Roles of Gratitude and COVID-19 Stress

First, gratitude was conceptualized by Lazarus and Lazarus (1994) as an "empathic emotion" that is associated with feelings of appreciation for supportive and constructive benefits or presents (p. 34). Breen et al. (2010) and McCullough et al. (2002) did important research on gratitude as a dispositional characteristic that could be connected to subjective well-being effect and had a positive correlation with life satisfaction, optimism, hopefulness, and vitality. According to Breen et al. (2010), gratitude shows negative association with anxiety, stress, and depression. Breen et

al. (2010) indicated that this trait has correlated with prosocial characteristics and behaviors: empathic concern and perspective-taking.

In Wood et al.'s (2009) study, grateful people felt more positive about their living environments by coping better with stress and anxiety as they slept better and felt thankful for their living conditions and their possessions. Gratitude is believed to be integral to psychological well-being, as it helps prevent people from the hedonic treadmill by focusing them extensively on a daily appreciation of positive events in their lives. It, therefore, demonstrates a life orientation toward long-term gains in happiness, such as life satisfaction, "counting your blessings," and the desire for paying it forward (Emmons & McCullough, 2003, p. 379).

To explain the relationship between gratitude and well-being, a study of Wood et al. (2010) proposes the "positive affect hypothesis." Based on this hypothesis, experiencing positive emotions helps protect us from mental disorders, and gratitude is a valuable positive emotion and is strongly related to the habitual experience of positive emotions (Wood et al., 2010). Emotional gratitude brings comfort to individuals when experiencing it (Gallup, 1999) and helps to balance positive and negative affect, leading to greater life satisfaction (Wood et al., 2010). Finally, empirical studies have found that, by means of the aforementioned mechanisms, gratitude helps to increase individuals' well-being (Rash et al., 2011).

Another important thing that needs to be taken into consideration is whether gratitude plays a mediation role in the relationship between self-compassion and psychological well-being. The study by Lurdes and Latipun (2019) suggests that self-compassion and gratitude have a positive correlation. In this study, researchers found that participants who reported high scores on the Self-Compassion Scale (SCS-26) also scored high on the Gratitude scale (GQ-6). A recent study by Nguyen et al. (2020) also shows that self-compassion has helped to improve individuals' gratitude, and self-compassion interventions increased positive psychological characteristics, including gratitude (Bluth & Eisenlohr-Moul, 2017). From the aforementioned arguments and evidence, we assume that gratitude can play a mediation role in the relationship between self-compassion and psychological well-being during the time of the COVID-19 pandemic.

Second, we consider the effect of COVID-19 pandemic stress on the individuals' mental health. There has been extensive research revealing that COVID-19 stress could be associated with people's psychological well-being. For example, Lopez et al. (2020) found that the elderly were vulnerable to COVID-19 stress affecting significantly their psychological wellness, encompassing personal growth and purpose in life. Their study assessed the strong correlation between age and psychological well-being in the harsh context of the global public health crisis created by COVID-19. Among the general population in China, Wang et al. (2020) found there have been high levels of psychological impact, including anxiety, depression, and stress on Chinese mental health. By surveying online 1,210 respondents across 194 cities in China, they learned that "more than half of respondents rated psychological impact as moderate-to-severe, and about one-third reported moderate-to-severe anxiety" (Wang et al., 2020, p. 17).

Varalakshmi and Swetha (2020) stated that in India, when the virus started outbreak and the government launched nationwide lockdown enforcement, people became anxious and panicked with

stress responses, such as rush in buying essential commodities without social distancing that might lead to drastic virus spread. Park and Park (2020) indicated from their study that in Korea, the demand for mental health care during the virus outbreak has been bolstered, as 528 and then 173 Koreans escaping from Wuhan after the virus began expansion in this province were put in quarantine. According to Park and Park (2020), COVID-19 patients often experience the xenophobia of infection, including death and severe physical disability. The "xenophobia of infection" situation took place in many parts of the world during the days of the COVID-19 pandemic. In Bangladesh, a man committed suicide when he was told by villagers that he had been infected with COVID-19 based on symptoms such as fever, cold symptoms, and weight loss, although later autopsy revealed he was not infected by the virus (Somoy News, 2020).

Arguably, the villagers' behavior toward this man was "xenophobic"; it was an act of worrying about a strange element—especially when it could potentially compromise their safety, and the result was the man's suicide behavior for being unable to tolerate mental pains (Mamun & Griffiths, 2020). In addition, xenophobia has taken place below the community level, during the COVID-19 pandemic, in the United States and Europe; Asians suffered severely, even there have been xenophobic attacks against people of Asian descent (White, 2020). Boredom, loneliness, anger, and other anxiety symptoms and distress are also worse consequences of quarantine and adverse effects of the treatment (Park & Park, 2020). These results have shown that stress and anxiety caused by the COVID-19 pandemic have affected individuals' mental health.

Finally, to complete the hypothesis of the mediating role of the pandemic stress COVID-19 in the relationship between self-compassion and an individuals' well-being, we need to understand the mechanism by which self-compassion has affected COVID-19 stress. Previous studies have provided supportive evidence that self-compassion has a negative correlation with stress and anxiety (Soyas & Wilcomb, 2015; Stutts et al., 2018). In the study by Chishima et al. (2018), the authors found that self-compassion exhibited a positive protective role in individuals when they faced stressful situations. The "Common Humanity" factor that helps people with high self-compassion was less likely to be negatively affected by stressful events because they realized that this was a common human problem, instead of isolating themselves (Chishima et al., 2018).

Moreover, based on Neff's research (Neff, 2003b), mindfulness, one of the constituent factors of self-compassion also helps individuals to see the problem from an objective point of view, nonjudgmental, without trying to suppress or deny them. At the same time, mindfulness also prevents them from being "overidentified" with thoughts and feelings so that they do not get caught up in negative reactions (Neff, 2003b). A recent study by González-Sanguino et al. (2020) shows that the COVID-19 patients and quarantined people have often reported discrimination and loneliness that could strongly affect their psychological wellness during the contemporary pandemic. At the same time, this study also supports that the sense of belonging and self-compassion are protective components of psychological well-being to these vulnerable people, and help to reduce the negative effect of COVID-19 pandemic stress on mental health (González-Sanguino et al., 2020).

Hence, it is crucial to understand that building foundation of self-compassion does benefit to increase people's psychological well-being, as it supports people to cope with COVID-19 stress. From the aforementioned arguments and pieces of evidence, we assume that COVID-19 stress and gratitude can play the multimediators role in the relationship between self-compassion and psychological well-being in the time of the pandemic.

COVID-19 Stress, Psychological Well-Being in the Vietnam Context, and the Present Study

First, looking at COVID-19 stress and mental health concerns in the context of Vietnam, we have seen little attention to research on the impacts of the COVID-19 pandemic on Vietnamese psychological well-being. It demonstrates a call for further psychological studies on this global health crisis in diverse contexts. Among a very few studies contemporarily done on the influence of the COVID-19 epidemic upon Vietnamese mental health, Nguyen and Vu (2020) researched Vietnamese lottery ticket sellers and foreign language teachers' psychological responses to this pandemic when the national lockdown happened. Specifically, language teachers in Vietnam have become much nervous because they have experienced financial burden due to school closure and the lottery suspension across the country has caused massive panic and anxiety among people who are living on daily lottery ticket sales (Nguyen & Vu, 2020).

The Vietnam's Health Ministry Portal (2020) drew researchers' attention to Vietnamese people's mental health impacted by the COVID-19 pandemic. Recent studies done by the Chinese Psychological Association and groups of Taiwanese and Vietnamese researchers have shown that 18,000 people were diagnosed with COVID-19 stress and 5,000 people experienced posttraumatic stress disorder, and 64.3% of 3,947 people in cities of Thai Nguyen, Thua Thien Hue, and Ho Chi Minh went through depression, as they were potentially exposed to the virus (The Vietnam's Health Ministry Portal, 2020).

It appears obvious to us that these studies on COVID-19 impacts on Vietnamese mental health or the general health system have been valid in the context of the virus's unpredictable evolution, especially in the second wave of this virus in Vietnam. However, it is still essential to draw more attention to research on the specific impacts of COVID-19 stress on Vietnamese people's psychological well-being and the potential measures to this virus distress.

Second, based on the theoretical model, the COVID-19 Stress Scales (CSS) scale was developed and validated on a sample of U.S. and Canadian participants (Taylor et al., 2020). The original version of this scale included 36 items and was categorized into five subscales, including COVID Danger and Contamination, COVID Socioeconomic Consequences, COVID Xenophobia, COVID Traumatic Stress Symptoms, and COVID Compulsive Checking. However, recent studies have found that, unlike the original English version of the CSS scale, in the Spanish and Filipino versions, the CSS was converted to six subscales (Montano & Acebes, 2020; Pulido, 2020). Furthermore, CSS has never been translated and used in studies in Vietnam before in the context of the COVID-19 pandemic. Therefore, part of the purpose of this study includes the translation and validation of the CSS to be able to measure the stress level of Vietnamese people affected by the COVID-19 pandemic.

In the current study, the first step, we used exploratory factor analysis to explore the factor structure of 36 CSS items of the Vietnamese version in a sample of adults from the general community. Next, confirmatory factor analysis was conducted in Step 2 to confirm the adequacy of the CSS's factor structure in other Vietnamese adults group. Reliability and convergent validity were also investigated. Therefore, we would like to propose the application of Taylor et al. (2020)'s COVID-19 Stress Scales to investigate the Vietnamese responses to this virus outbreak. Furthermore, we aim to measure the correlations between COVID-19 stress and self-compassion and gratitude in connection with psychological well-being. Based on the literature review of these factors, the present study proposes the following hypotheses and research models (see Figure 1):

Hypothesis 1: COVID-19 stress would be negatively correlated with psychological well-being.

Hypothesis 2: Self-compassion would be negatively correlated with COVID-19 stress.

Hypothesis 3: Self-compassion and gratitude would be positively correlated with psychological well-being.

Hypothesis 4: COVID-19 stress and gratitude will play a multimediators role in the relationship between self-compassion and psychological well-being.

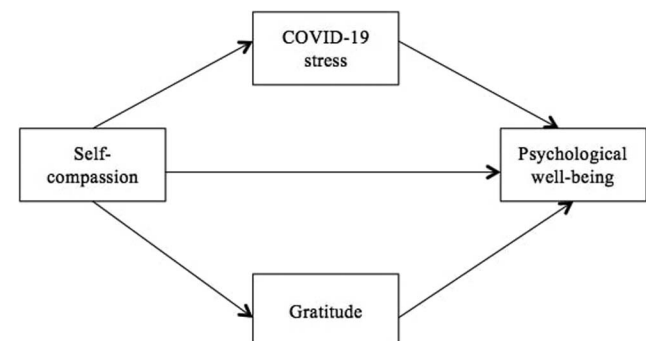
Methodology

Participants and Procedure

This study was designed based on a cross-sectional study model, through an online survey form sent to Vietnamese adults during August of 2020. This research was in line with the American Psychological Association's ethical principles and was also approved by the ethics committee for psychological research at the authors' university. Participants were invited to participate in a study of mental health in the COVID-19 pandemic. To be included in the study, participants must be at least 18 years old. Questionnaires were distributed online through a data collection website Google Form (<https://www.google.com/forms/about/>).

Figure 1

Conceptual Model: The Influence of Self-Compassion on Psychological Well-Being: a Multi-Mediation Model of Covid-19 Stress and Gratitude



The online survey first consisted of an introduction of the study, a description of the study objectives, the inclusion criteria, and a short discussion of issues regarding research ethics. Participants were informed that this study was anonymous, and they were voluntary and no monetary or other compensation would be given. Only those who agreed to the study condition would complete the questionnaires including a series of demographic questions (e.g., age, home location, education level, gender) and the related scales. A total of 509 participated in the present study. Participants' age ranged from 18 years to 60 years ($M_{age} = 31.71$ years, $SD = 7.28$ years). Demographic characteristics of participants are presented in Table 1.

Measurements

Psychological Problems in the COVID-19 Pandemic

For our study on COVID-19 stress in a pandemic, we used the CSS initiated and developed by Taylor and colleagues to examine people's psychological responses toward the COVID-19 epidemic (Taylor et al., 2020). The CSS was created using representative samples from Canada ($n = 3,479$) and the United States ($n = 3,375$) to help health care providers understand and evaluate their patients' psychological perceptions of the virus during the pandemic (Taylor et al., 2020). The CSS was proven to be valid and reliable, as it was tested on the Canadian population sample by using parallel analysis and exploratory factor analysis. It was then replicated with the American sample using confirmatory factor analysis (Pakpour et al., 2020).

The original of the CSS consists of 36 items, measuring five factors: COVID Danger and Contamination (e.g., "I am worried about catching the virus"), COVID Socioeconomic Consequences (e.g., "I am worried about grocery stores running out of food"), COVID Xenophobia (e.g., "I am worried that foreigners are spreading the virus in my country"), COVID Traumatic Stress Symptoms (e.g., "I had trouble sleeping because I worried about the virus"), and COVID Compulsive Checking (e.g., "Checked social media posts concerning COVID-19").

Items were rated on a 5-point scale ranging from 0 (*not at all*) to 4 (*extremely*). The COVID Compulsive Checking and the Traumatic Stress items were rated on a 5-point scale ranging from 0 (*never*) to 4 (*almost always*; Taylor et al., 2020). The overall score

of CSS was calculated by summing the scores of all items together. In Taylor et al.'s (2020) study the Cronbach's α for each factor was 0.91, 0.91, 0.93, 0.93, and 0.89, respectively. The Cronbach's α of the total scale score was 0.96 in the previous study (Asmundson et al., 2020).

Self-Compassion

Self-compassion was measured using the Self-Compassion Scale (SCS-26) developed by Neff (2003a) and translated and validated in the Vietnam context by Tran and Tran (2017). This scale consists of 26 items measuring six factors: Self-Kindness (e.g., "I'm kind to myself when I'm experiencing suffering"), Self-Judgment (e.g., "When times are really difficult, I tend to be tough on myself"), Common Humanity (e.g., "When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am"), Isolation (e.g., "When I'm feeling down, I tend to feel like most other people are probably happier than I am"), Mindfulness (e.g., "When something painful happens I try to take a balanced view of the situation"), and Overidentified (e.g., "When I fail at something important to me I become consumed by feelings of inadequacy").

The Self-Compassion Scale employed a 5-point Likert scale ranging from 1 (*almost never*) to 5 (*almost always*). The overall score of self-compassion is the average score of all 26 items. In this study, Cronbach's α was 0.92 for the overall scale. In previous study, the confirmatory factor analysis (CFA) showed that the measurement model yielded an adequate fit at: $\chi^2/df = 3.07$ ($p < .001$), a comparative fit index (CFI) = 0.89, a Tucker-Lewis index (TLI) = 0.87, standardized root-mean-square residual (SRMR) = 0.06, root mean square error of approximation (RMSEA) = 0.06, and 90% confidence interval [CI: 0.06, 0.07], indicating acceptable construct validity for the Vietnamese version (Nguyen et al., 2020). In the present study, the CFA showed that the measurement model yielded an adequate fit at: $\chi^2/df = 4.05$ ($p < .001$), a CFI = 0.89, a TLI = 0.87, SRMR = 0.07, RMSEA = 0.08, and 90% CI [0.07, 0.08], indicating acceptable construct validity.

Psychological Well-Being

Psychological well-being was measured using the WHO-5 Well-Being Index (WHO-5-T; Topp et al., 2015). The original scale consists of five items (e.g., "I have felt cheerful and in good spirits"). Instructions for the WHO-5-T were as follows "Please indicate for each of the five statements which are closest to how you have been feeling over the last two weeks". The WHO-5 employed a 6-point Likert scale ranging from 0 (*at no time*) to 5 (*all of the time*). The overall score of this scale was calculated by summing the scores of all items together.

In this study, the WHO-5-T was translated by one Vietnamese researcher, who was fluent in English. The back-translation was done by an independent translator with the same characteristics. A pilot test with 10 participants, Vietnamese adults recruited among the Vietnamese community, was conducted to test the preliminary version of the Vietnamese scale. The participants were asked to provide individual feedback on both the content and the language of the items. In the current study, the Cronbach's α was 0.95 for the overall scale. The validity of this questionnaire was also confirmed. In the present study, the CFA showed that the measurement model yielded an adequate fit at: $\chi^2/df = 4.3$ ($p = .005$),

Table 1
Participants' Distribution in Terms of Their Socio-Demographic Characteristics

Variables	Groups	Frequency (%)
Gender	Male	92 (18.1)
	Female	417 (81.9)
Education	High school	17 (3.3)
	Professional technical secondary school	8 (1.6)
	College	21 (4.1)
	Bachelor	326 (64)
	Master and above	137 (26.9)
Home location	Rural	13 (2.6)
	Small town	10 (2)
	Big town	11 (2.2)
	Suburb	70 (13.8)
	Urban	405 (79.6)

CFI = 0.99, a TLI = 0.99, SRMR = 0.01, RMSEA = 0.07, and 90% CI [0.04, 0.13], indicating good construct validity.

Gratitude in the COVID-19 Pandemic

Gratitude was measured using the Gratitude Scale in COVID-19 pandemic (GCS) developed in Vietnamese by the authors for this study based on reference from the GQ-6 scale (McCullough et al., 2002). The original scale consists of six items (e.g., “I feel grateful that COVID-19 has given me the opportunity to see so many good things in this life, which I have never noticed before”). Instructions for the GCS were as follows “Please indicate for each of the six statements which are closest to your emotional state in COVID-19 pandemic situation”. Each item of the GCS is scored on a scale of 7 (*strongly agree*) back to 1 (*strongly disagree*). The overall score of this scale was calculated by summing the scores of all items together.

A pilot test with 10 participants, who were Vietnamese adults, was conducted to test the preliminary version of the GCS scale. The participants were asked to provide individual feedback on both the content and the language of the items. In the current study, Cronbach’s α was 0.93 for the overall scale. The validity of this questionnaire was also confirmed. In the present study, the CFA showed that the measurement model yielded an adequate fit at: $\chi^2/df = 2.7$ ($p = .004$), a CFI = 0.99, a TLI = 0.99, SRMR = 0.01, RMSEA = 0.07, and 90% CI [0.03, 0.1], indicating good construct validity.

Data Analysis

The Statistical Package for Social Sciences (SPSS) 21.0 software was used for data management, descriptive statistics, and correlation analysis. At the same time, the Jamovi software was used for Confirmatory factor analysis of the COVID-19 Stress Scale. This research used SPSS—PROCESS 3.0 plugin as compiled by Hayes (2017) to analyze the effect of self-compassion on psychological well-being, with COVID-19 stress and gratitude as the mediator variables. This study was designed based on the mediation model number 4 referred by Hayes (2017). First, we used linear regression to examine the total effect of self-compassion on psychological well-being. Second, we expected that COVID-19 stress and gratitude will play the multimediators role between self-compassion and psychological well-being. We used the approach suggested by Muller et al. (2005) to test the multimediators model of COVID-19 stress and gratitude.

Results

Validity and Reliability of the COVID Stress Scales

The CSS was translated by one Vietnamese researcher, who was fluent in English. The back-translation was done by an independent translator with the same characteristics. A pilot test with 10 participants, Vietnamese adults recruited among the Vietnamese community, was conducted to test the preliminary Vietnamese version of this scale. The participants were asked to provide individual feedback on both the content and the language of the items. Most of the suggested changes in the pilot study were concerned about inappropriate or ambiguous wording to the Vietnamese context and Vietnamese participants (e.g., the sentence “our healthcare system” in

Items 11, and 13 have been changed into the “Vietnam’s healthcare system”).

Exploratory Factor Analysis

In this section, we used a sample of 254 participants ($M_{\text{age}} = 30.8$; $SD = 8.3$), of which 207 (81.5%) female and 47 (18.5%) male, to do the exploratory factor analysis. The 36-item COVID-19 Stress Scale in Vietnamese was given to the participants to measure five factors of the CSS like the original scale in Taylor et al.’s (2020) study. Parallel analysis indicated a seven-factor solution, rather than a five-factor solution in which each factor corresponded to each of the seven subscales of the CSS. There were seven eigenvalues larger than 1; however, in the solution with seven factors, the last subscale has been loaded only on a single item (Item 1). Therefore, a six-factor solution was preferred. That is, the subscale “COVID Danger and Contamination” has been loaded into two subscales, including “COVID Danger” and “COVID Contamination Fear” (see below). The six eigenvalues were as follows: 8.71, 4.82, 3.34, 2.89, 2.13, and 2.00 (Kaiser–Meyer–Olkin measure of sampling adequacy = 0.86; Bartlett’s test of sphericity, $p < .001$). The total variance explained was 66.33%.

Factor loadings are shown in Table 2. Items 1 and 7 have been excluded from the Vietnamese CSS version due to the factor loading that was less than 0.3. Finally, the Vietnamese version of CSS consists of 34 items, measuring six factors corresponding to (a) COVID Contamination Fears, (b) COVID Traumatic Stress Symptoms, (c) COVID Fears About Economic Consequences, (d) COVID Xenophobia, (e) COVID Danger, and (f) COVID Compulsive Checking and Reassurance-Seeking. The six-factor solution had a good simple structure; that is, each item had a salient loading on only one factor.

Confirmatory Factor Analysis and Testing the Goodness-of-Fit of the COVID Stress Scales

The final version of the Vietnamese 34-item COVID-19 Stress Scale was given to the other sample group to measure six factors of the CSS. A total of 255 participated in this part of the current study ($M_{\text{age}} = 32.6$; $SD = 6.0$), of which, 207 (82.4%) were female and 47 (17.6%) were male. The researcher used the Jamovi software to analyze the CFA of the CSS. The relevance of the model was accepted at: $\chi^2/df = 1.97$ ($p < .001$), CFI = 0.91, TLI = 0.90, SRMR = 0.07, RMSEA = 0.06, and 90% CI [0.06, 0.07]. In the current study, the CFI and TLI were higher than 0.9 and indicates an acceptable fit (Natasha & Shenyang, 2011).

Internal Consistency

Internal consistency based on 34 items was good ($\alpha = .92$). Internal consistencies for the separate subscales were $\alpha = .91$ for COVID Contamination Fears; $\alpha = .90$ for COVID Traumatic Stress Symptoms; $\alpha = .90$ for COVID Fears About Economic Consequences; $\alpha = .89$ for COVID Xenophobia; $\alpha = .84$ for COVID Danger; $\alpha = .81$ for COVID Compulsive Checking and Reassurance-Seeking. Table 3 presents the correlations among the scales. Here, it can be seen that all the scales of the CSS were intercorrelated. This suggests, for people with high scores, that symptoms assessed in the CSS form a coherent COVID Stress Syndrome (Taylor et al., 2020).

Table 2
Exploratory Factor Analysis (Vietnamese Sample): Factor Loadings

Items	Original subscale	1 C	2 T	3 SE	4 X	5 D	6 CH
D2. I am worried that basic hygiene (e.g., handwashing) is not enough to keep me safe from the virus	1					0.65	
D3. I am worried that the Vietnams' healthcare system is unable to keep me safe from the virus	1					0.77	
D4. I am worried that I can't keep my family safe from the virus	1					0.71	
D5. I am worried that the Vietnams' healthcare system won't be able to protect my loved ones	1					0.84	
D6. I am worried that social distancing is not enough to keep me safe from the virus	1					0.73	
C2. I am worried that if I touched something in a public space (e.g., handrail, door handle), I would catch the virus	1	0.81					
C3. I am worried that if someone coughed or sneezed near me, I would catch the virus	1	0.68					
C4. I am worried that I might catch the virus from handling money or using a debit machine	1	0.91					
C5. I am worried about taking change in cash transactions	1	0.90					
C6. I am worried that my mail has been contaminated by mail handlers	1	0.78					
SE1. I am worried about grocery stores running out of food	2			0.81			
SE2. I am worried about grocery stores running out of cold or flu remedies	2			0.80			
SE3. I am worried about pharmacies running out of prescription medicines	2			0.75			
SE4. I am worried about grocery stores running out of water	2			0.82			
SE5. I am worried about grocery stores running out of cleaning or disinfectant supplies	2			0.75			
SE6. I am worried that grocery stores will close down	2			0.74			
X1. I am worried that foreigners are spreading the virus in my country	3					0.67	
X2. If I met a person from a foreign country, I'd be worried that they might have the virus	3					0.85	
X3. I am worried about coming into contact with foreigners because they might have the virus	3					0.86	
X4. I am worried that foreigners are spreading the virus because they're not as clean as we are	3					0.71	
X5. If I went to a restaurant that specialized in foreign foods, I'd be worried about catching the virus	3					0.71	
X6. If I was in an elevator with a group of foreigners, I'd be worried that they're infected with the virus	3					0.83	
T1. I had trouble sleeping because I worried about the virus	4		0.65				
T2. I had bad dreams about the virus	4		0.81				
T3. I thought about the virus when I didn't mean to	4		0.76				
T4. Disturbing mental images about the virus popped into my mind against my will	4		0.88				
T5. I had trouble concentrating because I kept thinking about the virus	4		0.87				
T6. Reminders of the virus caused me to have physical reactions, such as sweating or a pounding heart	4		0.73				
CH1. Checked social media posts concerning COVID	5						0.71
CH2. Checked YouTube videos about COVID	5						0.73
CH3. Sought reassurance from friends or family about COVID	5						0.60
CH4. Checked your own body for signs of infection (e.g., taking your temperature)	5						0.69
CH5. Asked health professionals (e.g., doctors or pharmacists) for advice about COVID	5						0.71
CH6. Searched the Internet for treatments for COVID	5						0.73

Note. Bold = salient (>.30) loading. D = danger; SE = socio-economic consequences; X = xenophobia; C = contamination; T = traumatic stress; CH = compulsive checking.

The Correlations Between COVID-19 Stress and Gratitude, Self-Compassion, and Psychological Well-Being

Means, standard deviations, and correlations between COVID-19 stress, gratitude, self-compassion, and psychological well-being

are reported in Table 4. The data analysis showed that the COVID-19 stress was negatively correlated with self-compassion ($p < .01$) and psychological well-being ($p < .01$), whereas no correlation between COVID-19 stress and gratitude has been found ($p > .05$). On the other hand, the correlation between self-compassion and gratitude was significantly positive ($p < .01$).

Table 3
Correlations Among the COVID Stress Scales

Variables	1	2	3	4	5	6
1. COVID Contamination Fears	—					
2. COVID Traumatic Stress Symptoms	0.31	—				
3. COVID Fears About Economic Consequences	0.38	0.34	—			
4. COVID Xenophobia	0.32	0.24	0.43	—		
5. COVID Danger	0.34	0.22	0.36	0.43	—	
6. COVID Compulsive Checking and Reassurance-Seeking	0.23	0.36	0.21	0.35	0.25	—
7. Total score of the CSS	0.65	0.61	0.69	0.73	0.65	0.62

Note. All $p < .01$. CSS = COVID Stress Scale.

Table 4
Means, Standard Deviations, and Correlations Between COVID-19 Stress, Gratitude, Self-Compassion, and Psychological Well-Being

Variables	<i>M</i>	<i>SD</i>	1	2	3
1. CSS total score	49.11	19.33	—		
2. Gratitude	28.95	10.05	0.07	—	
3. Self-compassion	3.38	0.64	-0.16**	0.29**	—
4. Psychological well-being	15.21	6.00	-0.18**	0.38**	0.59**

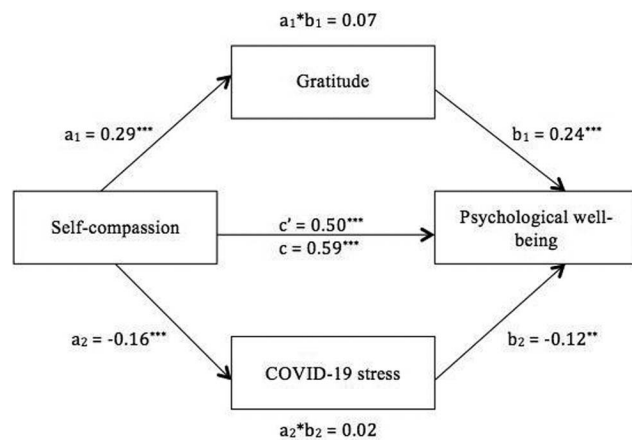
Note. CSS = COVID Stress Scale.
** $p < .01$.

Finally, psychological well-being was positively correlated with both self-compassion and gratitude ($p < .01$).

Testing for the Multimediator Model of COVID-19 Stress and Gratitude

First, the total effect of self-compassion on psychological well-being was as follows: $R = 0.59$, $R^2 = 0.35$, $F_{(1)} = 271.63$, $\beta = 0.59$, $t = 16.48$, $p < .001$. Second, when gratitude and COVID-19 stress were included in the model as a multimediator variable, the direct effect of self-compassion on psychological well-being was significant, (c') = 0.50, $SE = 0.04$, 95% CI [0.43, 0.57]. Third, the Bootstrap confidence interval of 95% (sampling 1,000 times) was used to test the multimediator effect of gratitude and COVID-19 stress in the relationship between self-compassion and psychological well-being. The results in Figure 2 showed that the mediator effect of gratitude in this model was significant ($a_1*b_1 = 0.07$, $SE = 0.01$, 95% CI [0.04, 0.10]). At the same time, the mediator effect of COVID-19 stress was also significant ($a_2*b_2 = 0.02$, $SE = 0.01$, 95% CI [0.01, 0.04]). We also tested the common method bias by used Harman's single factor test. The result has shown that the total variance for a single factor was 36.2%, and less than 50%, it suggested that common method bias did not affect the data in this current study.

Figure 2
Testing the Multi-Mediation Model of Covid-19 Stress and Gratitude



** $p < .01$ *** $p < .001$

Discussion

The Validity and Reliability of COVID-19 Stress Scale in the Vietnamese Context

The study results show that the CSS translated into Vietnamese assures good validity for measuring COVID-19 stress symptoms. The six subscales of the 34-item CSS Vietnamese version are different from the original five subscales structure in the English version (Taylor et al., 2020). In the current study, with the Vietnamese version of the CSS, it was possible to differentiate fears of COVID danger and COVID contamination fears as different factors. In the study of Taylor et al. (2020), both domains were organized in the same factor, but, under the results obtained in the current study, there is evidence of a six-factor structure in the Vietnamese version of CSS. The present study's results have been consistent with previous studies by Pulido (2020) and Montano and Acebes (2020) and validated the Spanish and Filipino versions of CSS and discovered that in this version, CSS no longer remained the original five subscales structure, but evolved to six subscales. The reliability of the Vietnamese version of the CSS is also very good, with the Cronbach's α indicator of the total scale is 0.92, and the Cronbach's α for subscales ranging from 0.81 to 0.91. In summary, the COVID-19 Stress Scale (Taylor et al., 2020) translated into Vietnamese could be used to measure the stress syndrome caused by the COVID-19 pandemic in the Vietnam cultural context.

Self-Compassion and Psychological Well-Being

The results of this study indicated that there is a positive correlation between self-compassion and psychological well-being. The positive correlation between these two variables means that a higher self-compassion score leads to increased psychological well-being among Vietnamese participants in this research. This result is consistent with the findings of the previous studies supporting that self-compassion has a positive correlation with human psychological well-being (Hall et al., 2013; Homan, 2016). A meta-analysis by Zessin et al. (2015) found that self-compassion has not only a correlation but also a causal relationship to psychological well-being. The results from the study of Zessin et al. (2015) discovered that self-compassion was positively correlated with both cognitive well-being, positive affective well-being, psychological well-being, and other types of well-being. Scholar Neff, who has introduced the concept of self-compassion into the field of psychology, suggested that "self-compassion is related to well-

being because it helps people feel safe and secure” (Neff, 2011, p. 7).

The Multimediators Model of Gratitude and COVID-19 Stress

Our research findings show that self-compassion, gratitude, and psychological well-being are positively correlated. Besides, the results support the hypothesis that gratitude plays a mediation role in the relationship between self-compassion and psychological well-being in the age of COVID-19 pandemic. This mediating effect means that a higher level of self-compassion will lead to greater gratitude and accordingly improve participants’ psychological well-being. Previous studies have found that self-compassion and gratitude were significantly positively correlated, and people with a higher level of self-compassion would show a higher level of gratitude also (Breen et al., 2010; Lurdes & Latipun 2019).

Self-compassion in Neff’s (2003b) conceptual framework includes three main dimensions: self-kindness, common humanity, and mindfulness. People with higher of self-kindness and mindfulness may have the advantage that they can find positive coping strategies during difficult, and uncertainty times (e.g., the age of the COVID-19 pandemic) because they can embrace reality as it is and come up with strategies that redefine how they perceive challenges related to reality and implement inappropriate problem-solving strategies, instead of thinking unrealistic or self-blaming.

Self-kindness also can help people to appreciate every moment that they are living, and are aware of life as a gift they are given, acknowledge this life with gratitude, that we still have a chance to live (Nguyen et al., 2020). Mindfulness, one of the three factors of self-compassion, helps people to be aware of and accept negative emotions and pain without being overly assimilated or dependent on those emotions (Nguyen et al., 2020). This will help them to realize and be aware that life still has many other beautiful things apart from suffering (Nguyen et al., 2020). According to Wood et al. (2010), the three factors that help to constitute gratitude are (a) awareness that life still has many beautiful things, (b) focusing on what we are having with a grateful, and (c) focusing on positivity in the present moment.

Gratitude is conceptualized as a “positive emotion” (Algoe & Zhaoyang, 2015); it has a positive effect on an individual’s psychological health, regardless of the culture that they came from (Corona et al., 2020). The evidence from the meta-analytic research of 404 effect sizes from 158 independent samples shows that dispositional the correlation between gratitude and well-being is moderate to strongly (Portocarrero et al., 2020). The mechanism for how gratitude affects the individual’s psychological well-being can be explained by the broaden-and-build theory of positive emotions (Fredrickson, 2004a). Given this conceptualization framework, gratitude helps to build and expand each individual’s thinking and perception of reality, helping them to see more fully about the “dark” and “light” aspects of daily life, thereby helping them avoid negative biases, especially during the uncertainty time. At the same time, the habit of experiencing positive emotions of grateful individuals will facilitate them to combat mental disorders and stressors in general, thereby helping to improve their psychological well-being (Fredrickson, 2004b).

A recent qualitative study by Sun et al. (2020) found that nurses, who frequently contacted and cared for COVID-19-infected pa-

tients reported an increase in gratitude in addition to other negative emotions. The nurses in this study reported the following gratitude, such as (a) grateful to people who cared for and supported to them, (b) grateful to this “experience made me feel that life is precious and family is important,” (c) grateful for “the sky is blue and everything is beautiful, after work,” and (d) they felt that working in the time of COVID-19 pandemic was special work experience. It was a gift, and they cherished it (Sun et al., 2020, p. 596). Also, in the medical research contexts, Shen and Sosa (2020) presented a study on their experience in seeking to identify new ways to promote positive and uplifting surgeons. The outcomes included the introduction of a new Grand Rounds format: “Gratitude and Good Results,” through which the surgeons have used gratitude as an exercise to help lift their morale during the COVID pandemic days (Shen & Sosa, 2020). They expressed their gratitude to their colleagues, nurses, and doctors in other departments and also thanked the day-to-day experiences that made them better, and finally, through the prefilmed videos, they received the gratitude from their patients (Shen & Sosa, 2020). These exercises of gratitude have helped the surgeons to thrive healthily (Shen & Sosa, 2020). Another example of recent research on the contemporary epidemic is a short-term longitudinal study at a university exploring that gratitude helped increase subjective well-being for students, during the age of COVID-19 pandemic (Bono et al., 2020). These studies have supported our research hypothesis that gratitude has played a mediation role in the pathway from self-compassion to psychological well-being in the age of the COVID pandemic.

Second, the current study also found that self-compassion, COVID-19 stress, and psychological well-being were negatively correlated. Also, COVID-19 stress plays a mediation role in the pathway from self-compassion to psychological well-being. A higher level of self-compassion will lead to reducing COVID-19 stress and accordingly helps to limit the negative influences of COVID-19 stress on the individual’s psychological well-being. The findings from this current study are consistent with results from previous studies found that self-compassion was negatively correlated with depression, anxiety, and posttraumatic stress disorder, COVID-19 threat and death anxiety caused by the COVID-19 pandemic (González-Sanguino et al., 2020; Kavakli et al., 2020). A study by Cheli et al. (2020) used self-compassion in an online intervention for participants during a lockdown due to the COVID-19 pandemic. The results of this study reveal that the compassion-focused crisis intervention helped to reduce the symptoms of depression, anxiety, and stress (Cheli et al., 2020).

In the days of the COVID-19 pandemic, self-compassion could act as a protective factor for individual mental health because of the contributions of three factors, including self-kindness, common humanity, and mindfulness. Given the definition of Neff (2003b), self-kindness is treating yourself with kindness, empathy, patience, and tolerance, especially when you experience the risk situations, face mistakes, and experience pain. In the age of the COVID-19 pandemic, individuals with high self-kindness may have shown self-care actions, appreciating and enjoying every opportunity in life. They are also showing compassion and forgiveness with themselves, instead of blaming themselves for suffering and anxiety in life, especially in days when social connectivity is impaired due to social distancing measures to fight with the spread of the virus.

Furthermore, common humanity also helps individuals realize that the COVID-19 pandemic is happening on a global scale, all people—in all cultures, and all countries are together going through these heavy days. Even in some other countries, the number of people infected and dying from the COVID-19 virus is much higher than where they live. When we recognize our common humanity, we feel connected with others in our life experiences rather than feeling isolated and alienated by our suffering, and then things become more bearable (Hofmeyer et al., 2020). These characteristics also help individuals feel more secure, to be grateful that they are still healthy, and to appreciate the present moment—while they are still alive.

Finally, mindfulness helps each individual to see reality as it is instead of overidentification, or excessive worry. Mindfulness also helps us to focus on reality with a holistic, objective, and undistorted perspective (Hofmeyer et al., 2020). A person with high mindfulness will be able to recognize the pain in ourselves without overexaggerating, and when we really recognize our pains and difficulties, we will have the opportunity to cope and regulate them. Taken together, the above characteristics of self-compassion helped to reduce the level of stress symptoms caused by the COVID-19 pandemic for participants in this study.

Previous studies have found that stress and fears have a negative effect on people's psychological well-being (Keech et al., 2020; Strizhitskaya et al., 2019). Stressful and fearful thoughts can impair emotional stability by increasing negative physiological, behavioral, and cognitive responses (Keech et al., 2020; Strizhitskaya et al., 2019). A recent study by Zacher and Rudolph (2020) found that the COVID-19 pandemic had negative effects on the psychological well-being of individuals: reductions of life satisfaction and positive emotional experiences along with the development of the individual negative emotional experiences (Zacher & Rudolph, 2020).

During the COVID-19 pandemic, people will experience a variety of symptoms of anxiety and fear, such as fear of infection, fear of death, concerns related to losing jobs, financial burdens, and shortage of essential supplies. The crisis has led many countries to enforce multiple virus containment measures: social distancing, closure of recreational activities, and self-quarantine. They limit the social interaction between humans, and finally reduce human mental health, including psychological well-being (López-Carral et al., 2020). These perceptions of stress and anxiety are likely to upset people's lives, cause them to lose emotional balance, increase negative emotions and behaviors, and thereby reduce their psychological well-being and quality of life. These above theoretical arguments and evidence have supported our research hypothesis that COVID-19 stress has played a mediation role in the pathway from self-compassion to psychological well-being.

Contributions and Limitations

This study shows that self-compassion may have an influence on psychological well-being through two paths: (a) directly and (b) indirectly through gratitude and COVID-19 stress. The investigation is the first study translating and validating the COVID-19 Stress Scale to measure stress and fears symptoms caused by the COVID-19 pandemic in the context of Vietnam social culture,

which helps us to have a better understanding of this concept and suggests similar studies in the future.

Based on the findings, we recommend that first the Vietnamese policymakers should pay more attention to the mental health issues of individuals during the COVID-19 pandemic. Second, to improve the human psychological well-being and reduce the stress and fears in the age of COVID-19 pandemic, we can practice self-compassion and gratitude interventions. In addition, psychologists and counselors can incorporate these concepts and practices into discussions and training courses to improve the psychological well-being of Vietnamese people in the context of the ongoing COVID-19 pandemic, especially for those groups severely affected by this pandemic, such as nurses, doctors, infected people, and their families, as well as those in the epidemic zone.

There are some limitations that should be addressed in future research. First, because this study was designed following a cross-sectional research model, even though the relationship between investigated variables can be explained, the causal relationship cannot be strongly confirmed. Future studies may consider conducting a longitudinal or empirical research model to shed light on this relationship. Second, we adopted the participant's self-report by the online survey method, so it is likely that the common method bias has a certain effect on the results we obtained. Future researchers may use a wider variety of data collection methods (e.g., experiment, other forms of reports) to reduce the effect of the common method bias and increase the validity of research results.

Third, given the limited resources available and the time-sensitivity of the COVID-19 outbreak, we have used the Convenience sampling method to collect data by sending a link to all the contacts on social media (e.g., Facebook, Instagram). In this study, the useful results can be obtained, but the results are prone to significant bias, because those who volunteer to take part may be different from those who choose not to (volunteer bias), and the sample may not be representative of other characteristics, such as educational level, age, and gender. Fourth, although the Vietnamese version of CSS in this study has shown good reliability and validity, there is no evidence of convergent validity or discriminant here. Future studies need to identify evidence of a relationship of scores obtained by CSS with the other stress and fears measures associated with the COVID-19, for example with The Fear of COVID-19 Scale (Ahorsu et al., 2020). Next, due to the temporal sensitivity of the second wave COVID-19 outbreak in Vietnam, the Gratitude in COVID pandemic Scale was used without evidence of convergent validity or discriminant here, although this scale has shown good reliability and validity. Future studies need to identify evidence of a relationship of scores obtained by GCS with the other gratitude measures, for example, with the GQ-6 scale (McCullough et al., 2002). Finally, as our study is only conducted on Vietnamese samples with distinct cultural characteristics, future studies can select participants from other cultures for comparison.

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