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Art therapists' fear of COVID-19, subjective well-being, and mindfulness

Juliet Jue^{a,*}, Jung Hee Ha^b

^a Department of Art Therapy, Hanyang Cyber University, South Korea

^b Graduate School of Counseling Psychology, Hanyang University, South Korea

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ABSTRACT

The COVID-19 pandemic has hit face-to-face service fields, including art therapy. The present study examined changes in Korean art therapists' subjective well-being between the pre- and during pandemic periods. We also investigated whether the fear of COVID-19 affected art therapists' subjective well-being and verified the mediating effect of mindfulness on the relationship between COVID-19 fear and subjective well-being. We used the existing data of 203 Korean art therapists' subjective well-being, and recruited 132 new participants. The participants were Korean art therapists and art therapy students who completed a subjective well-being questionnaire, a Fear of COVID-19 scale, and a mindfulness questionnaire. The results indicated lower levels of subjective well-being during the COVID-19 period than pre-pandemic. Furthermore, we confirmed that the fear of COVID-19 lowered subjective well-being, with mindfulness mediating the relationship. This study discusses core components of mindfulness, decentering, and embodiment as attributes shared with art therapy. Our results highlight the importance of dispositional mindfulness to foster subjective well-being during the pandemic.

COVID-19 is a novel coronavirus disease that originated in Wuhan, China, at the end of 2019, and rapidly spread worldwide. In March 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic. As of October 1, 2021, the WHO (2021) reported 233,503, 524 COVID-19 cases and 4,777,503 deaths. The news of deaths and sequelae due to COVID-19 caused most people to experience fear of the infection and severe stress (Lin, 2020). Although the outbreak of an infectious disease is not a new phenomenon, psychological stress caused by COVID-19 is increasing significantly as the period of the pandemic lengthens (Franza, Basta, Pellegrino, Solomita & Fasano, 2020; Huang, Han, Suo, Ren & Zhou, 2020; Liu, 2020; Park, 2020). According to the results of a study on psychological health, once the COVID-19 outbreak had lasted more than one year, 55.8% of Koreans felt anxious or depressed, and 8.3% of the population considered suicide due to economic difficulties, mental stress, or feelings of isolation (Lee & Kim, 2021).

Several studies tracking the effects of COVID-19 found that people suffer from a variety of psychological problems, including anxiety (Bark et al., 2020; Erdoğan, Koçoğlu, & Sevim, 2020; Huang et al., 2020; Lee et al., 2020), depression (Lee et al., 2020; Park, 2020), post-traumatic stress symptoms (Brooks et al., 2020), suicide risk (Bark et al., 2020), and fear and distress reactions (Shigemura, Ursano, Morganstein, Kurosawa & Benedek, 2020). Fear of COVID-19 refers to concerns and

anxiety relating to COVID-19, which includes psychological and physiological reactions to the COVID-19 news, personal thoughts, and the possibility of infections. In Korea, a survey taken from July to September 2020 found that 49.3% of art therapists were worried about getting infected with COVID-19 at work (Kim & Kwak, 2021). Another study found that Korean art therapists' fear of COVID-19 increased their helplessness (Jue, 2021). In addition, fear of infection resulted in the decrease of face-to-face service-based jobs. Although teletherapy has begun to be active as an alternative method (Ahn & Kim, 2021; Choudhry & Keane, 2020), many art therapists are experiencing changes at work and decreased incomes. When the American Art Therapy Association surveyed the influence of the COVID-19 pandemic on its members in May 2020, 14.7% of art therapists lost their jobs or were temporarily suspended, and another 10.7% had their incomes reduced (Choudhry & Keane, 2020). In Korea, 54.1% of art therapists had fewer work opportunities, 50.6% had reduced income during the pandemic (Jue, 2021).

The overall psychological states after the onset of the COVID-19 pandemic can be estimated through changes in the level of subjective well-being. Subjective well-being (SWB) is a psychological concept of happiness (Diener, 1984). It describes people's experiences of the quality of their lives, including positive emotions, negative emotions, and life satisfaction (Diener, 1984; Diener, Suh, Lucas & Smith, 1999). A

* Corresponding author.

E-mail address: juliet@hycu.ac.kr (J. Jue).

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number of studies comparing the levels of SWB before and after the onset of the COVID-19 pandemic reported that the SWB level was lower after the pandemic started (Bezzo, Silva, & van Ham, 2021; Giorgio, Riso, Mioni & Cellini, 2020; pp, 05, 2020, 2802; Rasskazova, Leontiev, & Lebedeva, 2020; Suzuki, Maeda, Hirado, Shirakawa & Urabe, 2020). These studies investigated SWB for the general public, but there is no study examining SWB changes that is limited to art therapists. Considering that art therapy is one of the professions that have been greatly affected by the pandemic, it might be necessary to examine art therapists' SWB changes. Furthermore, if COVID-19 affects the level of SWB, it would be worthwhile to verify the factors that mediate such impact.

Recently, mindfulness has been frequently mentioned as a psychological factor affecting SWB (Brown & Ryan, 2003; Jang, 2010; Kim & Son, 2012; Kim et al., 2013, 2018; Lee et al., 2012). Mindfulness is consciously paying attention to things that one would not usually pay attention to and focusing on moment-to-moment awareness (Brown & Ryan, 2003). Numerous studies reported that mindfulness reduces stress and effectively improves psychological well-being and overall mental health (Jang, 2010; Kim & Son, 2012; Kim et al., 2013, 2018; Lee et al., 2012). Specifically, mindfulness lowers the degree of depression (Bae & Chang, 2006; Teasdale et al., 2000), mitigates anxiety (Miller, Fletcher, & Kabat-Zinn, 1995), alleviates stress responses (Gu, Choi, & Cho, 2016), reduces suicidal thoughts and impulsivity (Kim & Son, 2010; Kim et al., 2018), and raises the level of happiness (Han, 2008; Jeon & Lee, 2010, 2015; Ryu & Yun & Hong, 2017).

As presented in Fig. 1, this study assumed mindfulness as a mediating factor in the relationship between COVID-19 fear and happiness. The rationale for establishing such a model is as follows. First, previous studies confirmed that fear of COVID-19 affects mindfulness. Belen (2021), who investigated the impact of fear of COVID-19 on 355 college students, reported that fear of COVID-19 lowered the level of mindfulness and, as a result, anxiety and depression increased. Saricali, Satici, Satici, Gocet-Tekin, and Griffiths (2020) also found that fear of COVID-19 lowers the level of mindfulness, which in turn leads to a higher sense of hopelessness. The reason why fear of COVID-19 affects mindfulness is due to the nature of the fear of COVID-19. The fear increases rumination and lowers tolerance for uncertainty (Satici, Saricali, Satici & Griffiths, 2020). Since mindfulness involves reducing rumination on the past or future and focusing attention on present experiences, mindfulness may decrease if rumination is activated by the fear of COVID-19 (Saricali et al., 2020).

Second, previous research demonstrated that mindfulness raises the level of SWB (Baer et al., 2008; Brown, Kasser, Ryan, Linley & Orzech, 2009; Falkenstrom, 2010; Han, 2008; Howell, Digdon, Buro & Sheptycki, 2008; Jeon & Lee, 2010, 2015; Ryu & Schutte & Malouff, 2011; Yun & Hong, 2017). Brown and Ryan (2003) explain that mindfulness contributes to well-being for two reasons: (1) Mindfulness liberates people from automatic thoughts, habits, and unhealthy behavior patterns, which facilitates self-regulation and the promotion of well-being. (2) Mindfulness contributes directly to well-being by making experiences clearer and more vivid.

Third, Satici et al. (2020) and Özmen, Özkan, Özer, and Yanardağ

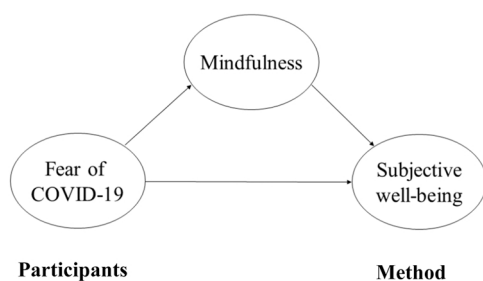


Fig. 1. The Relationship between Fear of COVID-19, Subjective Well-being, and Mindfulness.

(2021) reported that fear of COVID-19 lowered SWB: the former result was garnered using 971 adults and the latter, 3111. Rasskazova et al., (2020, pp. 2020280205) reported that anxiety about the pandemic showed a high correlation with negative emotions, and that SWB deteriorated after the COVID-19 surge. Other findings that the fear of COVID-19 increases hopelessness also indirectly support our assumption of this study; Saricali et al. (2020) reported that fear of Corona 19 increased hopelessness in 786 members of the general population, and Rossi, Marconi, Taccini, Verusio, and Mannarini (2021) found that Corona 19 fear is a cause of increase in hopelessness in oncology patients.

Based on previous studies, this study was composed of two parts. One is to compare the SWB of art therapists before and after COVID-19 onset. Another is to verify the relationship among fear of COVID-19, SWB, and mindfulness of art therapists. Our research questions are as follows:

1. Has the subjective well-being felt by art therapists changed before and after the COVID-19 pandemic?
2. Does art therapists' fear of COVID-19 affect subjective well-being?
3. Does art therapists' mindfulness mediate the relationship between fear of COVID-19 and subjective well-being?

Method

Participants

The survey data on SWB before the onset of the COVID-19 pandemic were acquired by us from September 15–30, 2018, and have never been published. At that time, it was collected as basic data in a pilot study to investigate the SWB of Korean art therapists. Based on the informed consent obtained at the time of data collection, we used the data in this study. Information about the participants is as follows: the 203 participants included 133 art therapists and 70 art therapy students. The average age of the participants was 40.66 years (*SD* = 8.75), and their sex ratio was 96.5% female and 3.5% male. This inequality ratio between females and males is similar to the sex ratio of Korean art therapists, 94.9% female, and 5.1% male, reported by Lee, Choi and Kim. (2017).

The survey data after the COVID-19's onset were obtained from newly recruited participants for this study. Information on this second group are as follows. Subjects (*n* = 132) included 88 art therapists and 44 art therapy students in Korea. Participants responded to a subjective well-being questionnaire, a Fear of COVID-19 scale, and a mindfulness questionnaire. Their sex distribution was 96.2% female and 3.8% male, similar to the first part's participants. The average age of the participants was 40.48 years (*SD* = 9.01). The participants' work experience is as follows (*note*: students responded with internship experience): 28.0% less than one year, 18.9% more than one year and less than three years, 22.7% more than three years to less than five years, 16.7% more than five years to less than ten years, and 13.6% for more than ten years.

In this paper, we used the term "art therapists" to refer to our study participants as a whole, considering that they are present and preliminary art therapists.

Procedure

The participants in the first part responded to an online survey between September 15–30, 2018. The participants in the second part completed an online survey between September 1–15, 2021. We used the same procedure in the first and the second data collection. We posted the survey link on art therapists' communities and social networking sites. We did not collect any personally identifiable information from this survey. Furthermore, we thoroughly guaranteed response confidentiality and anonymity. When participants accessed the online questionnaire, the questionnaire presented a brief introduction to the study,

an explanation of the guarantee of anonymity, and a box to confirm their consent to participate in the study. We excluded responses that did not include a checked consent form. We obtained research approval from the Hanyang Cyber University’s Institutional Review Board.

Measures

Concise measure of subjective well-being

To measure art therapists’ subjective well-being, we employed the Concise Measure of Subjective Well-Being (COMOSWB) originally developed in Korean and validated by [Suh and Koo \(2011\)](#) (see [Appendix A](#)). This scale comprises nine items, and each of the three items measures three sub-variables: life satisfaction, positive emotions, and negative emotions. We rated the items on a seven-point Likert scale ranging from 1 (*not at all likely*) to 7 (*extremely likely*). We calculated the final score by subtracting negative emotion scores from the sum of life satisfaction scores and positive emotion scores. In this study, the scale’s reliability coefficient was 0.87 for the first part participants and 0.81 for the second.

Fear of COVID-19 Scale

This study used the Korean version of Fear of COVID-19 Scale which was originally developed by [Ahorsu et al. \(2020\)](#) and translated and validated in the Korean population by [Hwang et al. \(2021\)](#) (see [Appendix B](#)). This scale has seven items rated on a five-point Likert scale. The final score is the sum of the scores for each item, and the higher the final score, the more severe the fear of COVID-19. [Saricali et al. \(2020\)](#) reported the scale’s Cronbach’s α as 0.86, and we found it to be 0.81.

Mindful attention awareness scales

To measure art therapists’ mindfulness, we used the Korean version of Mindful Attention Awareness Scales (MAAS), which was originally developed by [Brown and Ryan \(2003\)](#) and translated into Korean and validated by [Kwon and Kim \(2007\)](#) (see [Appendix C](#)). The scale consists of 15 items spanning two factors: (1) awareness and (2) attention. We rated all items on a six-point Likert scale. After scoring all items reversely, the higher the summed final score, the higher the level of mindfulness. The scale’s reliability coefficient was 0.82 in Brown and Ryan’s study and 0.90 in this study.

Analysis method

We used IBM SPSS Statistics 25.0 and the Process Macro ([Hayes, 2012](#)) to analyze the data. First, we calculated the Cronbach’s α to verify the reliability of the measurement tools. Next, we conducted frequency analysis and descriptive statistics to find the characteristics of participants and response distribution. We conducted a correlational analysis to investigate the relationship among variables. We then performed a hierarchical regression analysis to verify the mediating effect. Lastly, we ran bootstrapping through Process Macro to ascertain the significance of the mediating effect.

Results

Comparison of art therapists’ subjective well-being between pre and post COVID-19 onset

Table 1 shows the comparison of subjective well-being before and after COVID-19 onset. Overall subjective well-being was lower during the COVID-19 pandemic ($t = 2.04, p < .05$). The results of the sub-scale comparison showed that life satisfaction decreased during the pandemic ($t = 2.34, p < .05$). We saw a tendency for positive emotions to decrease and negative emotions to increase during the COVID-19 pandemic, but those differences between the two groups were not statistically significant.

Table 1
Comparison of Subjective Well-being Before and After COVID-19 Onset.

	Mean (S.D.)		t
	Prior to the pandemic (N = 203)	During the pandemic (N = 132)	
Life satisfaction	14.75 (3.22)	13.83 (3.74)	2.34 ^a
Positive emotions	13.35 (3.32)	12.67 (3.62)	1.74
Negative emotions	10.91 (3.86)	11.12 (3.97)	-0.48
Total subjective well-being	17.19 (7.99)	15.37 (7.96)	2.04 ^a

^a $p < .05$.

Descriptive statistics and correlational analysis of variables

We conducted a statistical analysis of data obtained from 132 art therapists after COVID-19 onset; **Table 2** presents the results. We found a significant correlation between all variables. Fear of COVID-19 correlated negatively with subjective well-being ($r = -0.38, p < .001$) and mindfulness ($r = -0.33, p < .001$). Mindfulness, however, correlated positively with subjective well-being ($r = 0.34, p < .001$).

Mediating effect verification

To verify the mediating effect of mindfulness, we conducted the hierarchical regression analysis proposed by [Baron and Kenny \(1986\)](#). We present our results in **Table 3**. In the first stage, we found that fear of COVID-19 significantly predicted mindfulness ($\beta = -0.33, p < .001$). In the second stage, fear of COVID-19 significantly predicted subjective well-being ($\beta = -0.38, p < .001$), which is a total effect. This finding means that the higher the fear of COVID-19, the lower the subjective well-being. In the third stage, we used fear of COVID-19 and mindfulness simultaneously as independent variables, and we confirmed that both variables significantly predicted subjective well-being ($\beta = -0.30, p < .001; \beta = 0.24, p < .01$). To verify the mediating effect, we compared the absolute value of the standardized coefficient (β) of fear of COVID-19 in the second stage with the value in the third stage. We found that the value in the second stage was bigger, which means mindfulness mediates the relationship between fear of COVID-19 and subjective well-being.

We performed bootstrapping using Process Macro to verify the statistical significance of the mediating effect. We re-extracted 5000 samples and found a mediating effect coefficient of -0.14 . As presented in **Table 4**, the confidence interval lower limit and upper limit values of the mediating effect coefficient were -0.26 and -0.05 , respectively. Thus, the confidence interval does not include zero ([Preacher & Hayes, 2004](#)), and we concluded a statistical significance of the mediating effect of mindfulness.

Discussion

We compared art therapists’ SWB before and after the onset of the COVID-19, and explored the influence of COVID-19 fear on art therapists’ SWB and mindfulness. Our study produced three significant findings, and their implications are as follows. First, we confirmed a

Table 2
Correlation Coefficients and Descriptive Statistics for Measurement Variables (N = 132).

	Fear of COVID-19	subjective well-being	mindfulness
Fear of COVID-19	1		
subjective well-being	-0.38 ^a	1	
mindfulness	-0.33 ^a	0.34 ^a	1
Mean	13.94	15.37	68.02
S.D.	4.65	7.96	12.23

^a $p < .001$

Table 3
Mediating Effect of Mindfulness on the Relationship between Fear of COVID-19 and Subjective Well-being.

Step	Independent Variable	Dependent Variable	b	SE	β	t
Step 1	Fear of COVID-19	Mindfulness	-0.86	0.22	-0.33	-3.97 ^a
Step 2	Fear of COVID-19	Subjective well-being	-0.65	0.14	-0.38	-4.71 ^a
Step 3	Fear of COVID-19 Mindfulness	Subjective well-being	-0.52 0.16	0.14 0.05	-0.30 0.24	-3.61 ^a 2.92 ^b

^a p < .001

^b p < .01,

Table 4
Bootstrapping Results for the Mediating Effect of Mindfulness.

Variable	Effect	SE	95% Confidence Interval	
			LL	UL
IV: fear of COVID-19 DV: Subjective well-being	-0.14	0.05	-0.26	-0.05

Note. IV: Independent variable, DV: dependent variable, SE: standard error, LL: Lower limit, UL: Upper limit.

lower level of art therapists' SWB after COVID-19's onset than before its onset. This finding is consistent with the results of previous studies on the general public that SWB lowered after the pandemic (Bezzo et al., 2021; Rasskazova et al., 2020; pp, 05, 2020, 2802; Suzuki et al., 2020). For example, Bezzo et al. (2021), using 9600 English citizens' longitudinal data, reported that the level of well-being has decreased after the COVID-19 pandemic and lockdown. In addition, adverse changes in SWB are related to previous research that reported worsening mood, decreased income, and reduced job opportunities (Bark et al., 2020; Hacimusalar, Kahve, Yasar & Aydin, 2020). Thus, our result is meaningful in that we checked the subjective well-being of art therapists, not of the general public.

One thing to make clear is that SWB comparisons were not made in a repeatable fashion using the same subjects. Because it was not possible to foresee a situation such as COVID-19, repeated measurements could not be planned in advance. No data collected personal information, so it was not known whether the same person participated twice in the pre- and post-coronavirus data. However, since both data collections were put together using Korean art therapists, the results of comparing the pre- and post-pandemic groups are still meaningful.

Second, we found that art therapists' fear of COVID-19 negatively affected their SWB. The negative correlation between the two and the significant total effect of hierarchical regression analysis supports this finding. Subjective well-being may have been affected by many factors other than fear of COVID-19, such as a decline in income or the impact on their health and family, etc. Not all such variables were considered in this study; however, as the results of the regression analysis showed that well-being is significantly affected by the fear of COVID-19, we might conclude that there is also an impact from fear of COVID-19. In other words, the more art therapists feared COVID-19, the lower their level of SWB. This result is in the same vein as previous studies that verified the effect on the general public (Özmen et al., 2021; Satici et al., 2020). Özmen et al. (2021), using the same Fear of COVID-19 Scale as used in this study, proved through regression analysis that well-being and life satisfaction are lowered due to fear of COVID-19 in 3111 Turkish adults. Satici et al. (2020) also used the Fear of COVID-19 Scale, and produced the same result that fear of COVID-19 lowered the level of SWB. Other research garnered similar results; COVID-19 had a significant negative impact on SWB (Giorgio et al., 2020; pp, 05, 2020, 2802; Rasskazova et al., 2020; Suzuki et al., 2020). However, one study did not find a significant relationship between fear of COVID-19 and SWB in Chinese

adolescents, although a correlation between fear of COVID-19 and depression was significant (Chen, 2020). The study divided the impact of COVID-19 into conformity to public health restrictions and fear of COVID-19; the former contributed positively to SWB, while the latter proved insignificant. Chen's study result could be explained by Long (2021)'s argument that people's well-being is positively affected by the degree to which people agree with the government's COVID-19 policy. Further follow-up studies are needed to determine whether these results differ from country to country.

Third, art therapists' mindfulness mediated the relationship between fear of COVID-19 and subjective well-being. Our hierarchical regression analysis results showed that the fear of COVID-19 either directly or indirectly lowers subjective well-being. A lower level of mindfulness worsens subjective well-being. In other words, individuals who are competent at mindfulness are less negatively affected by COVID-19 than individuals who are not. Previous research consistently reported that mindfulness has a positive effect on mental health. For example, Shapiro, Astin, Bishop, and Cordova (2005) reported that when people under high stress practice mindfulness, their compassion increases. Also, Gu et al. (2016) found that college students with lower levels of mindfulness had lower levels of overall mental health. In addition, mindfulness reduces the dysfunctional expression of anger (Jeun & Son, 2011), alleviates suicidal thoughts caused by hopelessness (Chesin & Jeglic, 2020), and even promotes happiness (Jung et al., 2021). In a similar vein, our results also support mindfulness as a protective factor in psychological health.

Before discussing the implications of our result, we would like to mention that two streams summarize the research on mindfulness according to its emphasis. One defines mindfulness as a "state" attainable through meditation (Kabat-Zinn, 1994, 2005), and the other describes it as a "disposition" stemming from naturally occurring characteristics, although it can be improved by discipline or inclination (Brown & Ryan, 2003). The former developed by proving the effectiveness of mindfulness through treatment programs such as Mindfulness-Based Stress Reduction (MBSR) and Acceptance and Commitment Therapy (ACT). The latter conducted studies quantitatively evaluating the degree of mindfulness and revealing the relationship with other important characteristics. Our study also belongs to the latter, and we examined the relationship between mindfulness and other variables. Then, can we make a suggestion for mindfulness discipline based on our result, while we used the concept of dispositional mindfulness?

We found an answer from Brown and Ryan (2003), who stated that mindfulness has both interpersonal differences and intrapersonal variations. It means that mindfulness has an inherent capacity to show individual differences, but it also varies within persons according to discipline and inclination. Therefore, we would like to suggest our study implications as follows: It could be worthwhile for art therapists to increase their level of mindfulness so that their SWB is not lowered due to COVID-19 fear. Although this study did not verify the effectiveness of a mindfulness discipline program, it provided evidence that mindfulness mediates the relationship between fear of COVID-19 and SWB. Thus, this study supports that practicing mindfulness would be beneficial for preventing some of the negative effects of COVID-19 fear.

We believe there is a commonality between the nature of mindfulness and the essence of art therapy. Mindfulness is a special kind of attention and awareness, and these attributes are shared by the art therapy training process. For instance, art therapists' training enables them to pay attention to the here and now in their education and experience introspective observations of their inner state. Their training allows them to choose behaviors matching their values, interests, and desires instead of making unconscious, habitual responses. They also learn the importance of open-minded and non-judgmental acceptance, no matter what theoretical approaches they follow. These experiences probably allow them to share mindfulness's essence, such as open or receptive awareness and attention.

In another study, the core components for reducing the stress

response and improving psychological healing through mindfulness are *decentering* and *embodiment* (Ahn, 2008). Centering is defined as focusing on one side of a situation, ignoring other aspects. On the other hand, decentering includes a multi-faceted view of a situation or an object, which is a departure from egocentrism (Synn et al., 2017). Decentering is one of the main strategies of MBSR, and Jeun and Son (2011) found that among the sub-factors of mindfulness, decentered attention was the critical factor in reducing dysfunctional anger expression. Interestingly, decentering is also an essential concept in art therapy, with or without emphasizing mindfulness. Knill, Levine, & Levind, (2005) underlined that decentering is the essence of expressive arts therapy. That is, while immersed in creative work, people experience freedom from thoughts and obligations weighing on them, and they immerse themselves in the creative work itself. In addition, Betensky (2001) stated that as clients distance themselves from their artwork after completing the work, the artwork becomes a phenomenon with its own existence. Now, appreciating one's artwork from a distance enables decentering one from their artworks.

Embodiment gives a tangible or visible form to an idea, feelings, or a spirit. In art therapy, people make their inner experiences into concrete objects others can see. This process is a kind of embodiment, as they express various feelings, thoughts, and experiences through visual images. After creation, people experience the feelings and sensations in the artwork in a new and vivid way. Westwood (2009) emphasized that doing art is an embodied work. Therefore, we can infer that decentering and embodiment, which are key therapeutic factors in mindfulness, are also important ingredients in art therapy. There may be individual differences in the degree of use of these factors, but art therapists generally utilize components of mindfulness overtly or covertly. Further research is needed to unveil to what extent the essences of art therapy and mindfulness are corresponding. If they are similar to each other, art therapists may be able to refine their dispositional mindfulness in the process of their training.

The significance of this study is as follows. First, by examining how Korean art therapists' SWB changed after the onset of the COVID-19, we can understand the impact of the pandemic more concretely. Second, this study revealed the protective factor by setting and verifying mindfulness as a mediating variable in the relationship between fear of COVID-19 and subjective well-being. For art therapists to maintain their psychological health, it might be worthwhile to increase mindfulness, focusing on awareness and attention.

This study's limitations and our suggestions for future research are as follows. First, we gathered data from art therapists and art therapy students in Korea. Since each country may show differences in the way it responds to COVID-19 or the level of feeling COVID-19 as a threat, the relationship among fear of COVID-19, SWB, and mindfulness may also vary. Therefore, one should take care not to over-generalize or expand the study results in interpretation and application. Second, this study is a cross-sectional study conducted at a specific point in time. We can infer a causal relationship through regression analysis, but the inference needs a more conservative interpretation than the causal relationship revealed in a longitudinal study. Future studies would benefit from conducting a longitudinal study for more precise verification of the causal relationship.

Author note

Department of Art Therapy, Hanyang Cyber University, Seoul 04763 Korea. Jung Hee Ha, Graduate School of Counseling Psychology, Hanyang University, Seoul 04763 Korea.

Declarations of interest

none.

Appendix A. Concise Measure of Subjective Well-Being (COMOSWB) (Suh & Koo, 2011)

The following are questions about your life satisfaction. Three important aspects of our life are the personal (achievements, personality, health, etc.), relational (how I get along with others), and collective (groups or organizations that I belong to – work, community, etc.) domains. Please think about each area, and rate how satisfied you are with each of the domains. Please select a number from 1 (“strongly disagree”) to 7 (“strongly agree”) that best reflects your thought.

- 1) I am satisfied with the **personal** aspects of my life. _____
- 2) I am satisfied with the **relational** aspects of my life. _____
- 3) I am satisfied with the **collective** aspects of my life. _____

The following are questions about your emotional experience. Please think about the events and thoughts you had in the past month, and rate how frequently you have experienced each of the following emotions during this period. Please select a number from 1 (“never”) to 7 (“always”) that best reflects your experience.

- 4) joyful _____
- 5) happy _____
- 6) peaceful _____
- 7) irritated _____
- 8) negative _____
- 9) helpless _____

Appendix B. Fear of COVID-19 Scale (Ahorsu et al., 2020)

Please respond to each item by ticking (✓) one of the five (5) responses that reflects how you feel, think or act toward COVID-19. (e.g. 1 (“strongly disagree”), 5 (“strongly agree”)).

1. I am most afraid of Corona
2. It makes me uncomfortable to think about Corona
3. My hands become clammy when I think about Corona
4. I am afraid of losing my life because of Corona
5. When I watch news and stories about Corona on social media, I become nervous or anxious.
6. I cannot sleep because I'm worrying about getting Corona.
7. My heart races or palpitates when I think about getting Corona.

Appendix C. Mindful Attention Awareness Scales (Brown & Ryan, 2003)

Below is a collection of statements about your everyday experience. Using the 1–6 scale, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

1. I could be experiencing some emotion and not be conscious of it until some time later.
2. I break or spill things because of carelessness, not paying attention, or thinking of something else.
3. I find it difficult to stay focused on what's happening in the present.
4. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.
5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.
6. I forget a person's name almost as soon as I've been told it for the first time.
7. It seems I am “running on automatic,” without much awareness of what I'm doing.
8. I rush through activities without being really attentive to them.

9. I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.
10. I do jobs or tasks automatically, without being aware of what I'm doing.
11. I find myself listening to someone with one ear, doing something else at the same time.
12. I drive places on 'automatic pilot' and then wonder why I went there.
13. I find myself preoccupied with the future or the past.
14. I find myself doing things without paying attention.
15. I snack without being aware that I'm eating.

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