Han, S.I. (2024). Validating the multidimensional scale of perceived social support for the South Korean adults in times of the COVID-19 pandemic. *International Online Journal of Education and Teaching (IOJET), 11*(2). 312-326.

Received : 18.12.2023
Revised version received : 01.03.2024
Accepted : 03.03.2024

VALIDATING THE MULTIDIMENSIONAL SCALE OF PERCEIVED SOCIAL SUPPORT FOR THE SOUTH KOREAN ADULTS IN TIMES OF THE COVID-19 PANDEMIC

Research article

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VALIDATING A MULTIDIMENSIONAL SCALE OF PERCEIVED SOCIAL SUPPORT FOR SOUTH KOREAN ADULTS DURING THE COVID-19 PANDEMIC

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Abstract

This study was motivated by interest in the validity of the Multidimensional Scale of Perceived Social Support (MSPSS) as a measure of social support in the context of the COVID-19 lockdown restrictions. To this end, a validation study of the MSPSS was undertaken in Korea in 2021 during the worst period of the COVID-19 pandemic and its related lockdown restrictions using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Specifically, a sample of 1,434 adults completed a self-administrated survey; among them, 741 were randomly selected for the EFA whereas the remaining samples were used for the CFA. Among the study results, ⓐ suitability tests of the sample data for factor analysis were performed, and the Kaiser–Meyer–Olkin statistic was found to be sound for sampling adequacy; moreover, the skewness and kurtosis indicated that all items had normal distributions, and the homogeneity of the scale was supported by the finding of strong positive correlations between each item and the total. Further, ⓑ EFA revealed satisfactory internal consistency and homogeneity, with significant positive correlations among the three factors (significant others, family, and friends); testing showed that the three-factor structure of the original 12-item MSPSS was still appropriate. The concurrent validity of the MSPSS was measured by examining its correlations with similar constructs such as stress, loneliness, and depression, and all correlations were found to be statistically significantly negative, thus implying that perceptions of social support are associated with better mental or emotional health. ⓒ CFA was conducted to validate the original MSPSS three-factor model structure in a different sample of subjects, and these results validated the three-factor model based on sound fit indices. The paper concludes by suggesting the implications of the obtained results.

Keywords: social support, MSPSS, COVID-19, CFA, EFA

1. Introduction

Following the rapid global proliferation of COVID-19, the respiratory disease that emerged in late 2019 and originally infected patients in Wuhan, China (Reiss & Bhakdi, 2020), the World Health Organization (WHO) declared COVID-19 a pandemic in March 2020 (WHO, 2021). The threat of COVID-19 in South Korea and all around the world led to challenges for not only physical but also mental health, thus increasing the chances of various disorders (Lee, Kim, & Lee, 2022). Following the WHO declaration of a pandemic, South Korea implemented a nationwide emergency room system that allowed all administrational and medical systems to respond 24 hours a day under the leadership of the government. However, in early May 2023,

the WHO lifted the international COVID-19 public health emergency, which had the effect of alleviating the fear and despair that had resulted from the severely restrictive lockdowns and isolation. In response to the lifting of the declaration, South Korea lifted most of its COVID-19 quarantine measures and declared the end of the COVID-19 pandemic.

In addition to the most obvious damage it has caused, as more than 6.9 million people worldwide had died from COVID-19 as of August 26, 2023 (Coronaboard, 2023), the disease has caused additional great harm around the world, primarily economic and social harm. First, the negative economic effects of businesses closing and people being unable to work threatened the survival of people worldwide. Reiss and Bhakdi (2020) predicted that hundreds of millions of people would fall into poverty due to the falling economic performance and rising unemployment caused by the predicted economic difficulties associated with the pandemic. Citing CNBC, the Korea International Trade Association reported that, in July 2020, during the early period of COVID-19, the global economy lost 3.8 trillion US dollars due to the impact of COVID-19, and 147 million people around the world lost their jobs (Global economy loses, 2023). Three years have since passed, and the current COVID-19-related global economic losses are unknown; the actual damage is likely incalculable.

In addition to severe economic losses, the other major area impacted by COVID-19 pandemic restrictions was social contact; people were forced to keep their distance even from loved ones to prevent the spread of the highly infectious airborne disease. One of the most important values of humanity is sharing our lives with others, and this loss of intimate interactions with others had a severe toll on mental health globally. Although the specific COVID-19 policies and regulations that were implemented varied from country to country, they generally took the form of lockdowns in which all persons were ordered to remain in their homes and to only make face-to-face contact with the other people in their homes, aside from emergency trips outdoors, where people were still expected to adhere to social distancing, in which people who did have reason to leave their homes and be in public spaces were requested to maintain distances of at least six feet/two meters from each other; both the lockdowns and social distancing measures increased feelings of isolation from others and of "disconnection from society" (The HK+Institute for Integrated Medical Humanities, 2020). In South Korea, as was the case almost everywhere else around the world, residents were ordered to stay home, to stay more than two meters away from others, and to avoid gatherings. In some cases, people who followed the social distancing practices began to show disgust toward people who were around others in enclosed spaces and did not wear masks (The HK+Institute, 2020). Indeed, the COVID-19 pandemic exposed deep conflicts worldwide.

In many parts of the world, distrust, anxiety, fear, pain, anger, and hatred appeared to spread faster than the disease; people engaged in antisocial behaviors such as hoarding, racism toward Asians wearing masks, distrust of people not wearing masks, and anger at infected people who were perceived to have acted irresponsibly. The ever-increasing numbers of daily deaths made people anxious, distressed, and angry (The HK+Institute, 2020). Overall, the lockdowns and social distancing restrictions caused substantial negative effects such as tremendous mental stress, loneliness, isolation, low quality of life, drug addiction, and suicide (Mercola & Cummins, 2021; Karani & Mary, 2022).

However, despite the severe restrictions on in-person contact, there were still invaluable sources of support and encouragement from others through various pathways such as SNS, phone calls, and online/virtual meetings; even without direct personal contact, people consoled and encouraged each other to overcome the substantial feelings of alienation and despair in the era of the COVID-19 pandemic. Perceived social support from others refers to people's beliefs that they belong to networks of care, love, respect, responsibility, and communication with

others (Zimet, Dahlem, Zime, and Farley, 1988); the existence of such supportive interactions with others protects against health deterioration caused by stress throughout life's changes and crises (Cobb, 1976). Social support also refers to a psychological sense of acceptance, belonging, and assistance that enhances an individual's ability to cope with stressful situations (Hasan, A., Ismail, A., & Noor, H., 2024). In terms of providers of social support, in the course of developing their Multidimensional Scale of Perceived Social Support (MSPSS), Zimet et al. (1988) determined that family members, friends, and significant others were the three most important groups. The MSPSS was originally developed with a sample of 275 university undergraduates, and the results of their confirmatory factor analysis identified three proposed subscales: 'family', 'friends' and 'significant others' (Cartwright et al., 2022). According to the authors of that study, this social support can reduce the negative effects of stress and induce positive emotional experiences to strengthen self-esteem (Zimet et al., 1988). In the area of learning specifically, El-Sayed, M. et al. (2024) revealed the existence of a positive association between academic motivation and support from friends, family, and significant others.

The MSPSS became one of the most widely used instruments for assessing social support (Park et al, 2021). It is easy to administer, can be completed quickly, and has been validated as reliable in various populations and languages (Shrestha, 2023; Stewart, Umar, Tomenson, & Creed, 2014; Tonsing, Zimet, & Tse, 2012). Park et al. (2021) reported that the MSPSS has been successfully adapted to different age sample groups (e.g., adolescents, university students, adults, and the elderly), various cultural backgrounds (e.g., Europe, Asia, Africa, and America), and both clinical and nonclinical settings (e.g., psychiatric patients, stroke patients, and career patients). A recent work conducted a validation study of MSPSS for a different age group, and the results validated the 3-factor model of MSPSS (Sun and Guo, 2024). Their sample subjects were Chinese children aged 8-14 years old. In terms of the classification of human background, Kler, Arora, and Le (2022) attempted to expand the study areas of MSPSS validation to a social group with more diverse characteristics; for their study, they selected people of color in the lesbian, gay, bisexual, transgender, queer, and plus community (LGBTQ+ POC), and their results verified the original three-factor solution of MSPSS based on the confirmatory factor analysis results and fittings. In another study, Fekih-Romdhane et al. (2023) pointed out that most research using MSPSS has emerged from the Western/Eastern world, and that validation studies of the MSPSS psychometric quality have mostly been performed by comparing these cultural backgrounds.

However, this leads to a question of whether the existing MSPSS is still a valid and reliable measure of social support for people, even in the face of sudden environmental changes, rather than choosing different regions or groups of subjects. To be more specific, the uniquely adverse conditions of the COVID-19 pandemic led us to wonder if the MSPSS would still be a useful tool for measuring social support during a time when social support could not happen in its typical manifestations: Would the MSPSS still be accurate when social interactions were at a bare minimum?

If the scale remained valid even under the extreme isolation conditions of COVID-19, during which little social support could be delivered and received in person, it would be validated for more diverse social situations. To address this question, the current study aimed to examine whether the existing factor structure of the MSPSS, a tool that can be used to measure social support, would be valid with a group of Korean adults experiencing COVID-19 pandemic social restrictions. Therefore, we first conducted an exploratory factor analysis (EFA) and then a confirmatory factor analysis (CFA) to reverify the reliability and validity of the MSPSS for extreme conditions such as those that existed during the COVID-19 pandemic lockdowns.

2. Methodology

2.1. Subjects

For this study, we followed the 2018 South Korea Population Census standards to obtain a sample that was evenly distributed according to gender, age, and residence area. Initially, 2,440 adults received the MSPSS, and 1,452 (59.5%) responded; we discarded 18 surveys with incomplete responses, ultimately leaving 1,434 adult subjects for the study. Table 1 presents the demographic characteristics of the study participants. For this study, we randomly selected 741 adults for the EFA portion and conducted the follow-up CFA with the remaining 693 adults.

Table 1. *Subjects' demographic information*

	Variable	EFA	CFA	Total
		n (%)	n (%)	n (%)
Gender	Male	377 (50.9%)	354 (51.1%)	731 (51.0)
	Female	364 (49.1%)	339 (48.9%)	703 (49.0)
Age	19–29	140 (18.9%)	135 (19.5%)	275 (19.2)
	30–39	141 (19.0%)	126 (18.2%)	267 (18.6)
	40–49	161 (21.7%)	156 (22.5%)	317 (22.1)
	50–59	158 (21.3%)	161 (23.2%)	319 (22.2)
	60–69	125 (16.9%)	94 (13.6%)	219 (15.3)
	Over 70	16 (2.2%)	21 (3.0%)	37 (2.6)
Financial Status	Above median	27 (3.6%)	29 (4.2%)	56 (3.9)
	Middle-class	318 (42.9%)	284 (41.0%)	602 (42.0)
	Below median	396 (53.4%)	380 (54.8%)	776 (54.1)
Type of Household	Single-person	117 (15.8%)	111 (16.0%)	228 (15.9)
	Multi-person	624 (84.2%)	582 (84.0%)	1206 (84.1)
Total		741	693	1,434 (100)

2.2. Procedures

We administered the survey online from February 19 to March 3, 2021, and subjects took 20 to 30 minutes to complete it. The survey period was during the worst spread of COVID-19, when social distancing was mandatory in the metropolitan areas of Korea and when private gatherings of more than five persons were discouraged. We conducted this survey only after obtaining approval from the institutional review board of our research university. Participants in this study were guaranteed that their survey results would be kept anonymous and used only for the purpose of the study.

2.3. Instruments for the Study

2.3.1. Multidimensional Scale of Perceived Social Support

The validation instrument used for this study was the MSPSS, which is a three-factor scale with 12 items that assess perceived social support from three different groups: family, friends, and significant others such as one's spouse or best friend (Zimet et al., 1988); each factor/group has four items. Items are scored on a 7-point Likert scale ranging from 1 for very strongly disagree to 7 for very strongly agree. In the original English version, Cronbach's α coefficients were .91, .87, and .85 for significant others, family, and friends, respectively, while it was .88 for the overall scale, thus indicating good internal consistency (Zimet et al., 1988). The Korean version of the MSPSS was developed by Park et al. (2021), who validated it with close to one

thousand South Korean high school students and with minor revisions. Cronbach's α coefficients were .93, .93, and .93 for family, friends, and significant others, respectively, and .95 for all items together, also indicating very good reliability (Park et al, 2021).

2.3.2. Perceived Stress Scale

We measured stress in this study using the Korean version of the Perceived Stress Scale (PSS), which was originally developed by Cohen, Kamarck, and Mermelstein (1983); Park and Seo (2010) modified the original 10 items to be suitable for the Korean context. The PSS asks people about their thoughts and feelings over the previous month with the aim of identifying how people respond to different situations (NH Employee Portal, 2023). Each question is rated on a five-point scale, where a higher score indicates greater perceived stress. Cronbach's α for the scale was .78 (Cohen et al.,1983).

2.3.3. UCLA Loneliness Scale

We also used the revised UCLA Loneliness Scale to measure individual loneliness (Russell et al., 1978). The scale has a total of 20 questions rated on 4-point scales (0 = not at all, 1 = rarely, 2 = sometimes, 3 = always), where a higher score indicates more loneliness. Cronbach's α for the scale was .92 (Russell, 1996).

2.3.4. The Center for Epidemiological Studies-10-Depression Scale

We measured depression for this study using a modified version of the 20-item Center for Epidemiological Studies-Depression (CES-D) self-report scale that was originally developed for the National Institutes of Health by Radloff (1977). Specifically, we used the 10-item short form (CES-10-D) validated by Kohout, Berkman, Evans, and Cornoni-Huntley (1993); this scale asks about depressive symptoms experienced over the past week (0 = no, 1 = yes). Cronbach's α for the validated Korean short form of the CES-10-D was .72 (Shin, 2011).

2.4. Statistical Analysis

We analyzed the data for this study using SPSS and AMOS. First, we performed EFA of the existing MSPSS to examine whether Korean adults' perceptions of social support in the era of the COVID-19 pandemic and its stringent restrictions were aligned with their perceived support in normal circumstances. Then, based on the EFA results, we performed CFA to check the fit of the model we proposed based on the EFA results, which we assessed using the comparative fit index (CFI), Tucker–Lewis index (TLI), standardized root mean square residual (SRMR), and root mean square error of approximation (RMSEA) (Byrne, 2001; Hu & Bentler, 1999).

3. Results

For this study, we examined whether the MSPSS was still an accurate measure of social support from family, friends, and significant others during the COVID-19 quarantine lockdowns, which placed severe restrictions on in-person social contact. To this end, we recruited a sample of 1,434 South Korean adults and conducted our EFA with a random sample of 741 of these participants to reverify the reliability and validity of the scale under extreme social restrictions. We then performed CFA with the remaining 693 participants to confirm the EFA-derived factor structure. We discuss the findings we obtained below.

3.1. EFA

3.1.1. Testing data suitability for factor analysis

As a first step, we calculated the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy to determine whether EFA was suitable for the data from this study sample, and KMO was .94, indicating that the study sampling was adequate. We also calculated item–total correlations to check whether the data were normally distributed; a skewness of 2 or more or a kurtosis of 7 or more indicates that the distribution is non-normal (Hong, Malik, & Lee, 2003; West, Finch, & Curran, 1995). As can be seen in Table 2, for all items, skewness was below 2 and kurtosis was below 4, indicating that all the items were normally distributed. To test the scale's homogeneity in measuring social support, we measured the correlations between each item, and it can be seen in Table 2 that the regression weights were between .757 and .841, all strongly positive.

Table 2. *Correlations between total scale and each item*

Item	M	SD	Skewness	Kurtosis	Correlation
1	4.841	1.515	−0.685	−0.007	.782
2	5.010	1.484	−0.783	0.281	.818
3	5.271	1.441	−0.798	0.281	.757
4	5.101	1.544	−0.749	0.103	.759
5	5.057	1.586	−0.757	0.037	.841
6	4.686	1.509	−0.583	−0.051	.827
7	4.459	1.635	−0.502	−0.364	.806
8	4.973	1.569	−0.669	−0.047	.788
9	4.713	1.583	−0.644	−0.114	.837
10	4.783	1.664	−0.617	−0.275	.825
11	5.115	1.533	−0.785	0.235	.803
12	4.729	1.580	−0.677	−0.035	.804

3.1.2. Construct validity

The EFA results presented in Table 3 indicate that the original three-factor structure of the 12-item MSPSS was still valid; the total variance of these three factors was found to be 85%. The factor with the highest explanatory value was significant others (e.g., "There is a special person with whom I can share my sorrows"), with a variance of 72%, followed by family (e.g., "I get the emotional help and support I need from my family"), with a variance of 8%, which was in turn followed by friends (e.g., "I have friends with whom I can share my joys and sorrows"), with a variance of 4%. The items for each factor revealed from the EFA were consistent with the ones of the original MSPSS factors. A weak point of the factor loading analysis was that, although the factor structure remained the same as that of the original MSPSS, the eigenvalue for friends was less than 1, thus indicating a weaker impact of friends compared to the impacts of the other two factors.

Table 3. *Factor analysis and MSPSS item–total correlations*

Item	Factor loading		
	Factor 1 Significant others	Factor 2 Family	Factor 3 Friends
1	0.781	−0.060	0.127
2	0.898	0.037	−0.048
5	0.702	0.207	0.003
10	0.702	0.014	0.171
3	−0.118	1.008	−0.014
4	−0.170	1.029	0.010
8	0.026	0.554	0.313
11	0.009	0.663	0.231
6	−0.009	0.065	0.847
7	−0.115	0.009	0.995
9	0.009	−0.007	0.915
12	0.008	−0.044	0.916
Total eigenvalues	8.665	1.011	0.484
% of variance	.772	.084	.040
Cumulative % of variance	.722	.806	.847

3.1.3. Concurrent validity

We measured the concurrent validity of the MSPSS by examining its correlations with similar constructs, specifically stress, loneliness, and depression using the Korean version of the PSS (Park & Seo, 2010), the UCLA Loneliness Scale (Russell et al., 1978), and the CES-10-D (Kohout et al., 1993), respectively; the results are presented in Table 4. We measured the internal consistency of the items within each individual MSPSS factor (significant others, family, friends), and the results are presented in Table 4. All correlations of MSPSS factors with the constructs of stress, loneliness, and depression were found to be negatively significant: Perceptions of social support were associated with less negative mindsets even during severe in-person contact restrictions. Our results corroborated concurrent validity.

Table 4. *Pearson's correlation coefficients of the MSPSS subscale scores with stress, loneliness, and depression*

Constructs	Significant others	Family	Friends
Stress	−.207***	−.256***	−.235***
Loneliness	−.651***	−.584***	−.672***
Depression	−.223***	−.277***	−.230***

*** $p < .01$

3.1.4. Reliability

Table 5 presents the item–total correlations for all 12 items that constituted the three MSPSS factors; as can be seen in the table, the positive correlations between factors were statistically significant, indicating high internal reliability and appropriate discrimination between the constituent concepts of the factors. Table 6 presents the Pearson's correlation coefficients of the three MSPSS factors with each other. The results listed in Tables 5 and 6 reflect the independence and multidimensionality of each factor.

Table 5. *Item–total correlations (internal consistency)*

Factor	Total Correlation
Significant others (4 items)	.925**
Family (4 items)	.926**
Friends (4 items)	.947**
Total (12 items)	.961**

*** p < .01

Table 6. Pearson's correlation coefficients of the three MSPSS factors

Factor	Significant others	Family	Friends
Significant others			
Family	.780**		
Friends	.805**	.707**	

*** p < .01

3.2. CFA

Based on our EFA findings for the MSPSS, we subsequently performed CFA to examine Zimet et al.'s (1988) original three-factor model structure in a different sample of subjects; based on the item regression weights, we confirmed the original three-factor model (Figure 1), which was consistent with the findings of many other studies on EFA (Alexe et al., 2021, Calderón et al., 2021; Canty-Mitchell & Zimet, 2000; Pushkarev et al., 2020; Wittenborn et al., 2020). The proposed model showed good fit statistics aside from RMSEA, which slightly exceeded the criterion for acceptable fit: CFI, 0.953; TLI, 0.939; SRMR, 0.029; and RMSEA, 0.111. For TLI and CFI, values above 0.9 indicate satisfactory fit, while for SRMR, a value below 0.08 indicates good model fit (Hong, 2000; Hu & Benter, 1999; Lee, Bae, & Woo, 2013). For RMSEA, a value above 0.1 indicates inadequate fit (Browne & Cudeck, 1993), and RMSEA in this study slightly exceeded that value.

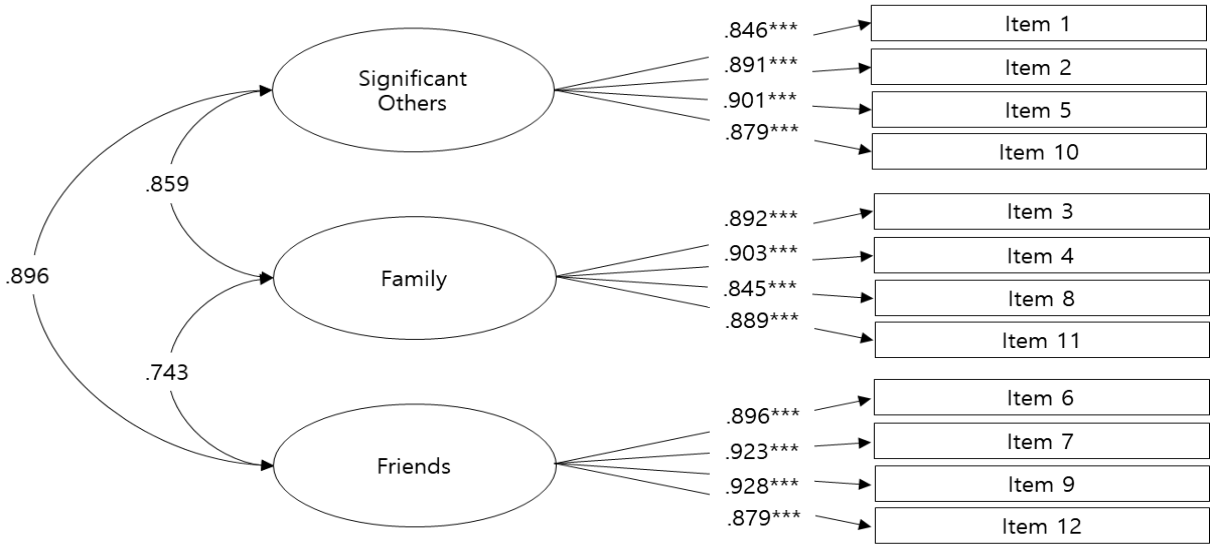

Figure 1. Confirmatory factor analysis of the three-factor MSPSS model.

4. Discussion

The goal of this study was to determine whether the MSPSS was still an accurate and valid measure of perceived social support even during the COVID-19 pandemic and its associated restrictions, which was a time when in-person social contact was severely constrained. This study was conducted in the winter of 2020, when the spread of the COVID-19 pandemic in Korea was the most severe, and when people were instructed to refrain from social contact as much as possible. Based on the results of an EFA with 741 South Korean adults and a CFA with 693 adults, the MSPSS was validated as an accurate measure of an individual's perceived social support.

The validation study used CFA to examine the extent to which the existing MSPSS that has been established fits with the data from the COVID-19 pandemic, and in the process, the model's fit was evaluated to confirm the validity of the MSPSS; the model was also analyzed to see whether it needed to be modified to improve the fit by EFA. The study was unique as it attempted to validate MSPSS under the condition of a special environmental situation called the COVID-19 pandemic, unlike the existing validation studies which have been conducted for a specific country or age group. The results of this study proved through EFA and CFA that the structure of the existing MSPSS is suitable even for this unique situation. The EFA results of factor analysis showed that the three-factor model is adequate. In the process, we calculated the KMO statistic to test the suitability of the data for factor analysis; we tested the normal distribution of all the items by calculating skewness and kurtosis; and we established the homogeneity (internal reliability) of the scale based on the strong positive correlations between each item and the total. CFA was subsequently conducted to validate Zimet et al.'s (1988) original three-factor MSPSS model structure in a different sample of subjects, and the results confirmed the original model based on the item regression weights and the fit statistics (CFI, TLI, and SRMR). Our findings were consistent with those from an examination of the psychometric properties of the MSPSS measured in a group of Arabic-speaking Lebanese adults from the general population (Merhi & Kazarian, 2012) and also confirmed the factor structure of the revised version of the MSPSS among nonclinical Lebanese adults with depressive disorders (Fekih-Romdhane et al., 2023).

It is noteworthy here that the COVID-19 pandemic period was a time when conditions for refraining from social relations were formed, but even in this situation, MSPSS—which represents the importance of social support—was validated. The results of the study show that social support is not only important to humans, regardless of region and age, but that it also remains an important value in moments of adversity or catastrophic environments. However, the question that remains in the study is how the mode of social support could be delivered in a form other than face-to-face contact. This is because the infection control implemented in response to the declaration of COVID-19 as a pandemic were essentially characterized by a requirement for everyone to stay home. This study did not reveal how we humans interact with others for social support at times when various interpersonal communication media are being invented at almost every moment. Therefore, it is necessary in this regard to adjust this MSPSS into a more inclusive measure of social support by applying the changes involved in the times.

We also calculated the concurrent validity of the MSPSS by examining its correlations with similar constructs, specifically stress, loneliness, and depression, and all three showed statistically significant negative correlations with the MSPSS score. That is, perceived social support was found to correlate negatively with stress, loneliness, and depression. Consistent with our findings, researchers examining a sample of undergraduate health science students found a statistically significant negative correlation between stress and MSPSS score (Aziz, Baharudin, & Alias, 2023). Moreover, Bokszczanin et al. (2023) measured the prevalence of

depression among university students in Poland, the UK, and India during the second wave of COVID-19, and they reported that higher levels of loneliness and depression symptoms were associated with lower levels of perceived social support.

Anxiety during the COVID-19 pandemic had negative effects on mental health conditions such as stress, fear, and helplessness (Arora et al, 2022), and many people who lacked social support experienced greater stress during the pandemic (Kiraly et al., 2020). According to Jang et al. (2022), stress results from the dynamic interaction between risk factors and protection factors, and social support from family and friends served as a protection factor for many against the stresses of COVID-19. Moreover, higher levels of quality of life exhibited significant positive associations with social support (Foroozanfar, Z., Hooshyar, D., & Joulaei, H., 2023). This study's findings indicate that the original MSPSS is still an accurate measure of perceived social support and its beneficial effects, even under extreme social difficulties.

5. Limitations

Although we validated the MSPSS in this study through EFA and CFA, more thorough research on certain matters would make our findings much more robust. First, although the EFA in this study validated the original three-factor structure of the MSPSS (important others, family, friends; Zimet et al., 1988), the eigenvalue of the friend factor was less than 1 (Chouhan et al., 2017). However, UCLA Advanced Research Computing (2023) has determined that an eigenvalue greater than zero accurately represents the total amount of variance that can be explained by a given principal component. Second, the proposed model showed good fit statistics aside from RMSEA, which slightly exceeded the acceptability criterion (>0.1; Browne & Cudeck, 1993).

6. Conclusions

Over the extended period of the COVID-19 pandemic, having to refrain from in-person contact led to mental health crises worldwide. Social support has already been established as a way to help individuals cope with mental health stress, and the MSPSS has been validated worldwide as an accurate measure of individuals' perceptions of their social support. To our knowledge, this study is the first to establish that the Korean version of the MSPSS was valid even under the restrictions of the COVID-19 pandemic, under which it was difficult or impossible to maintain in-person social contact. Exploratory and confirmatory factor analysis confirmed that the original three-factor structure of the MSPSS retained its reliability and validity under an exceptional condition. We consider that, based on our findings, the MSPSS is still an accurate measure of the real-world impacts of perceived social support even under extreme circumstances, such as severely limited in-person social contact.

The results of this study provide various directions for future research. First, it has been confirmed that social support was still recognized as an important value for people even in the situation of the COVID-19 pandemic, when face-to-face interpersonal relationships were restricted. The question here is how social support was provided in this situation. Following the MSPSS validation study, further research needs to explore how social support occurs in situations where face-to-face interactions are suppressed. Second, the friend factor of MSPSS had relatively low factor loading values in the EFA of MSPSS, so it is necessary to analyze the cause of this finding through a more specific research design. The statistical results of this study show us the directions we should go next, such as designing and implementing hypotheses on whether a two-factor MSPSS model excluding the friend factor is a more valid measurement tool or examining whether verifying the existing MSPSS is not a problem by conducting a re-verification study in other similar environmental conditions such as the COVID-19 pandemic.

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