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Validation of a Social Anxiety Questionnaire: Empirical Evidence from Korean Undergraduate Students

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Social anxiety disorder (SAD) is defined as severe fear or anxiety in one or more social situations. Although knowing the specifiers of SAD could further improve our understanding of heterogeneity in the disorder, currently available psychometric instruments are insufficient to assess situationally defined social anxiety dimensions individually. Given this situation, the Social Anxiety Questionnaire (SAQ) has been developed to measure five anxiety-provoking situations for adults. The aim of this study was to examine the reliability and validity of the Korean version of the SAQ. A total of 564 undergraduate students participated in this study. A total of 302 samples were used for exploratory factor analysis, and a total of 262 samples were used for confirmatory factor analysis. The mean age of the participants was 20.33 years, and measures of anxiety, fear of negative evaluation, and depression were analyzed. Exploratory factor analysis yielded five factors: (1) interactions with strangers, (2) speaking in public/talking with people in authority, (3) interactions with the opposite sex, (4) criticism and embarrassment, and (5) assertive expression of annoyance, disgust, or displeasure. Confirmatory factor analysis also supported the construct validity of the questionnaire. The Korean version of the SAQ showed good internal consistency, test-retest reliability, criterion validity, and convergent validity. To futher accurately understand social anxiety disorder, it is necessary to determine how the level of anxiety of each individual differs in various circumstances. In this respect, the Korean version of the SAQ is expected to be utilized as a useful tool for clinical research.

Keywords: anxiety scales, Social Anxiety Questionnaire, situationally defined social anxiety dimensions, social anxiety, social phobia

A person with social anxiety will feel nervous in various social situations. When such fear becomes excessive, it can cause impairment in functioning. This is called social anxiety disorder(SAD) or social phobia(Morrison & Heimberg, 2013). Lifetime prevalence of SAD is 12.1%, the highest rate aside from major depressive disorder, alcohol dependence, and specific phobia(Kessler et al., 2005). Experiencing social situations such as school, work, and intimate relationships is unavoidable. One who suffers from SAD might experience severe distress(Quilty, Van Ameringen, Mancini, Oakman, & Farvolden, 2003; Wittchen, Fuetsch, Sonntag, Muller, & Liebowitz, 2000). Moreover, SAD could predict suicidal idea and suicidal attempt(Bentley et al., 2016). Thus, a great attention has been directed to understand this disorder. Part of changes in DSM-5 is about the specifier of SAD(American Psychiatric Association, 2013). DSM-5(American Psychiatric Association, 2013) has proposed a 'performance-only' specifier based on contextual variables that are relatively stable in SAD(Heimberg et al., 2014). This change in diagnostic criteria suggests that considering situational variables to understand the heterogeneity of social anxiety disorder is clinically important. Studies focusing on the contextual variables of SAD have been attempted in Korea as well. Park (2003) has divided social anxiety largely into 'social interaction situations' and 'performance situations' based on social anxiety provoking situations. In addition, Shin(2012) also divided social anxiety based on the context variables; pervasive social anxiety and dominant public speaking anxiety. Not only the diagnostic

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criteria for social anxiety disorder in DSM-5 has changed but also several researchers have emphasized the importance of social anxiety provoking situation in order to systematically understand social anxiety. Social anxiety measurement tools that can objectively evaluate various social anxiety inducing situations are limited in Korea and thus, we felt the necessity of developing a scale that measures the social anxiety inducing situation which can better reflect the cultural characteristics of Koreans. The social phobia in the oriental region is strongly influenced by the Confucian culture and the upward mobility consciousness(as stated in Lee, Shin, & Oh, 1994), and Koreans have a tendency to emphasize what is called 'Chemyon(social face)' and tend to worry about other's evaluation(Oh, Huh, & Lee, 1999). As such, it is more difficult to express complaints directly toward others in societies where harmonizing in the group is valued(Song & Park, 2009). Further, social anxiety questionnaires that can classify these characteristics into dimensions are also quite limited.

Frequently used social anxiety measures such as Social Phobia Scale(SPS; Mattick & Clarke, 1998), Social Interactive Anxiety Scale(SIAS; Mattick & Clarke, 1998), and Liebowitz Social Anxiety Scale(LSAS; Liebowitz, 1987) have advantages in that they can measure social anxiety considering various social situations. However, several questions have arisen related to selecting items from existing various self-report measures for assessing social anxiety disorder, selection method, and content validity(Haynes, Richard, & Kubany, 1995). For example, in case of developing SPS and SIAS, researchers have subjectively collected and selected items to measure fear and social anxiety(Mattick & Clarke, 1998). In addition, most items in LSAS already exist in other social anxiety measurements and there was no detailed explanation for the validity of the scale when the scale was developed(Caballo, Salazar, Irurtia, Arias, & Hofmann, 2010). Furthermore, the number of factors and contents of factors in LSAS have been reported differently, ranging from three factors(Romm et al., 2011) to eight factors(Heeren et al., 2012). This indicates poor construct validity.

Caballo, Arias, Salazar, Irurtia, and Hofmann(2015) have developed a new social anxiety scale(Social Anxiety Questionnaire, SAQ) to improve and complement problems of previous measures of social anxiety. SAQ was developed from over 10,000 data collecting social anxiety provoking situations for over six years. Validation of a total of 18,467 clinical and non-clinical groups in 18 countries reflected characteristics of social anxiety provoking situation in various cultures. The study of Caballo et al.(2015) yielded five factors: (1) Interactions with strangers, (2) Speaking in public/talking with people in authority, (3) Interactions with opposite sex, (4) Criticism and embarrassment, and (5) Assertive expression of annoyance, disgust, or displeasure. The internal consistency(Cronbach's α) of SAQ was high for total scores in both samples. Guttman split-halves reliability of SAQ was .931 for non-clinical sample and .900 for clinical sample(Caballo et al., 2015). Caballo et al.(2015) suggested that it would be vital to use the cut-off score corresponding to the five anxiety-provoking situations as well as the SAQ total score for selecting the clinical groups. The development of such new measure will be useful for detailed clinical study of social anxiety disorder.

Therefore, the primary aim of the present study was to translate the SAQ, which systematically classifies the social anxiety inducing situations through extensive data collection, into Korean version and examine the reliability and validity by using two independent undergraduate student samples. The study was addressed in three ways. First, with 302 undergraduate students, we conducted exploratory factor analysis. Second, with 262 undergraduate students, we conducted confirmatory factor analysis. Third, we examined the internal consistency of SAQ and relationships between the scale and other measures including LSAS measure.

Methods

Participants

Undergraduate students from four different universities in South Korea(Seoul) completed the questionnaires. A total of 564 undergraduate students completed this study. According to the rule of thumb, 10 participants for each scale item is recommended(Nunnally, 1978) and over 300 participants can be graded as a good sample size(Comrey & Lee, 1992; as quoted by Boateng, Neilands, Frongillo, Melgar-Quiñonez, & Young, 2018). Therefore, with SAQ consisting 30 items, a sample size of 302 were collect for EFA while we considered 262 samples to be acceptable since it was five

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times larger than measurement variables for CFA. Hence, A total of 302 samples were used for exploratory factor analysis while a total of 262 samples were used for confirmatory factor analysis. Of these participants, 252(44.7%) were males and 312(55.3%) were females. The mean age of these participants was 20.33 years(*SD*: 2.52, range: 17–36 years).

Procedures and measures

All participants provided informed consent and the questionnaires were completed anonymously. Participants accessed an online research participation system called Qualtrics and completed measures below. Institutional Review Board(IRB) approval was obtained from the Seoul National University(IRB No. E1603/001-004).

SAQ

SAQ is a 30-item scale designed to assess the level of unease, stress, or nervousness in response to each social situation(Caballo et al., 2015). Each item of the SAQ was answered in a 5-point Likert scale from 1(not at all or very slight) to 5(very high or extremely high), with higher scores indicating higher levels of social anxiety. SAQ had an alpha coefficient of .92 for nonclinical samples(N= 9,066) and .87 for clinical samples(N= 334)(Caballo et al., 2015). With permission from the original author(January 11, 2016), we reviewed and revised the Korean version of SAQ and made sure it correctly reflects the contents of the original text. Bilingual college student who had no prior knowledge of the concept then made a reverse translation. After reviewing and editing the reverse translation, final Korean version of SAQ items was confirmed(Appendix 1).

Liebowitz Social Anxiety Scale: Self-Report Version (LSAS-SR)

LSAS is a 24-item scale measuring social phobia by asking participants to imagine ''what if you were faced with the situation''(Liebowitz, 1987). It was used to assess the degree of fear/anxiety (LSAS-Anxiety subscale) and avoidance(LSAS-Avoidance subscale) in a 4-point Likert scale(from 0 'never' to 3 'usually'). We administered a Korean version of LSAS-SR. Adequate reliability and validity of LSAS-SR have been demonstrated previously(Park, 2003). In the present study, Cronbach's α for anxiety subscale was .91 and .89 for avoidance subscale.

Brief version of Fear of Negative Evaluation Scale(BFNE)

FNE was originally developed as a 30-item scale to assess problematic fear of negative evaluation(Watson & Friend, 1969). A BFNE was then developed, containing 12-item evaluated with a 5-point scale ranging from 1(not at all characteristic of me) to 5(extremely characteristic of me)(Leary, 1983). BFNE has shown high internal consistency(α=.90–.91) and 4-week test–retest reliability(α=.75) in undergraduate samples(Leary, 1983; Miller, 1995). We used the Korean version of BFNE with sound psychometric properties(Lee & Choi, 1997). In the present study, Cronbach's α value for BFNE was .90.

State-Trait Anxiety Inventory(STAI)

STAI was developed to assess and evaluate the level of anxiety of an individual(Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983). It consists of 20 items of State Anxiety Scale to measure the current state of anxiety. It also has 20 items of Trait Anxiety Scale to evaluate anxiety tendency. In this study, only the Trait Anxiety Scale was used. It was used to ask respondents to indicate how they generally felt based on a 4-point Likert scale ranging from 1(not at all) to 4(very much so). We used the Trait Anxiety subscale of Korean version(Kim & Shin, 1978). For the present sample, the Cronbach's α for BFNE was .90.

Center for Epidemiological Studies-Depression Scale (CES-D)

CES-D was developed to measure current depressive symptoms in the general population(Radloff, 1977). It assesses the degree of depression on a 4-point scale to indicate the degree to which they experienced the symptom in the previous week. The scale had an internal consistency with reported alpha value of .84 for the general population. Split-half reliability coefficients ranged from .77 to .92(Corcoran & Fisher, 1987). A Korean version of CES-D has demonstrated good reliability and validity(Chon, Choi, & Yang, 2001). The present study found Cronbach's α of .92 for CES-D.

Results

Exploratory factor analysis

To investigate factor structure of the Korean version of SAQ, exploratory factor analysis was conducted using SPSS 22.0 Statistics Program. First, fit index of Kaiser-Meyer-Olkin(KMO) was calculated to be .88(Kaiser, 1974). Barlett's test result indicated that it was appropriate to carry out factor analysis(χ^2[435, n = 302] = 3,873.42, p < .000).

To determine the appropriate number of factors, all factors with an Eigen value of 1.0 or greater were extracted by principal axis factoring. As a result, the number of factors was 7. Extracted factors had the following Eigen values: factor 1(8.919), factor 2(2.660), factor 3(1.733), factor 4(1.536), factor 5(1.431), factor 6(1.198), and factor 7(1.073). Considering additional Scree plot, five to six factors were considered appropriate.

Based on these results, factor analysis was conducted by assigning five and six factors. By assigning the number of factors as six

Table 1. *Exploratory Factor Analysis for the Korean Version of SAQ (N = 302)*

Item number	Contents	Factor loading				
Factor 1. Interactions with strangers						
13.	Maintaining a conversation with someone I've just met	.11	-.05	.00	.04	.73
15.	Greeting each person at a social meeting when I don't know most of them	.13	.06	-.01	-.00	.56
10.	Making new friends	-.02	.08	-.03	.19	.55
19.	Looking into the eyes of someone I have just met while we are talking	.00	.06	.01	.28	.47
17.	Talking to people I don't know at a party or a meeting	.35	.02	-.03	.09	.41
22.	Attending a social event where I know only one person	.07	.01	-.16	.05	.41
Factor 2. Speaking in public/Talking with people in authority						
3.	Speaking in public	.76	-.08	.05	.18	-.06
18.	Being asked a question in class by the teacher or by a superior in a meeting	.72	-.08	-.14	-.08	.07
12.	Having to speak in class, at work, or in a meeting	.61	.04	-.04	.20	-.01
25.	While having dinner with colleagues, classmates or workmates, being asked to speak on behalf of the entire group	.53	.14	-.09	.06	.04
29.	Talking to a superior or a person in authority	.51	.14	-.00	-.09	.13
7.	Participating in a meeting with people in authority	.41	.06	.02	-.02	.18
Factor 3. Interactions with the opposite sex						
30.	Telling someone I am attracted to that I would like to get to know them better	.00	-.04	-.02	.69	.12
20.	Being asked out by a person I am attracted to	-.00	-.03	.07	.61	.04
23.	Starting a conversation with someone of the opposite sex that I like	.00	.07	-.00	.58	.16
4.	Asking someone attractive of the opposite sex for a date	.08	.11	-.03	.57	-.02
27.	Asking someone I find attractive to dance	-.03	.09	-.15	.55	.04
6.	Feeling watched by people of the opposite sex	.21	-.03	-.07	.44	-.01
Factor 4. Criticism and embarrassment						
28.	Being criticized	-.01	.06	-.80	-.05	-.02
24.	Being reprimanded about something I have done wrong	.01	.07	-.78	-.00	-.04
16.	Being teased in public	-.01	-.11	-.70	.04	.05
21.	Making a mistake in front of other people	.02	.02	-.69	.02	-.00
8.	Talking to someone who isn't paying attention to what I am saying	.05	.16	-.23	-.03	.05
1.	Greeting someone and being ignored	.05	.12	-.20	.18	.02
Factor 5. Assertive expression of annoyance, disgust or displeasure						
26.	Telling someone that their behavior bothers me and asking them to stop	-.00	.74	-.12	.06	-.06
14.	Expressing my annoyance to someone that is picking on me	-.07	.69	.03	-.02	.13
11.	Telling someone that they have hurt my feelings	-.04	.63	-.04	-.02	.07
2.	Having to ask a neighbor to stop making noise	.13	.58	.03	.20	-.21
9.	Refusing when asked to do something I don't like doing	.05	.57	-.01	-.06	.05
5.	Complaining to the waiter about my food	.14	.38	-.14	.09	-.06

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Table 2. *Descriptive Statistics for the Korean Version of SAQ (N = 302)*

Factor	*M*	*SD*	Skew	Kurtosis
1. Interactions with strangers	13.25	4.14	.74	.60
2. Speaking in public/Talking with people in authority	14.79	4.55	.64	.05
3. Interactions with the opposite sex	13.04	4.26	.46	-.22
4. Criticism and embarrassment	18.64	4.37	.29	-.69
5. Assertive expression of annoyance, disgust or displeasure	15.87	4.60	.56	.05

Table 3. *Factor Correlations for Korean Version of SAQ (N = 302)*

	1	2	3	4
1. Interactions with strangers	-			
2. Speaking in public/Talking with people in authority	.59	-		
3. Interactions with the opposite sex	.55	.54	-	
4. Criticism and embarrassment	.37	.43	.37	-
5. Assertive expression of annoyance, disgust or displeasure	.35	.42	.39	.50

using direct oblimin method, the number of items corresponding to one factor was extremely small(less than 2) while the number of items overlapped in more than two factors. Considering these results and theoretical interpretability, the optimal number of factors was found to be five. After conducting factor analysis by designating five factors, all items except two showed high factor loadings of over .30 for each factor. Results of exploratory factor analysis for a total of 30 items of Korean version of SAQ are shown in Table 1. Also, the summary of descriptive statistics for each factor are presented in Table 2.

The correlation coefficient between factors ranged from $r = .35$ to $r = .59$(Table 3). Factors that showed the highest correlation were: (1) Interactions with strangers, and (2) Speaking in public/Talking with people in authority($r = .59$).

Confirmatory factor analysis

Confirmatory factor analysis was conducted using AMOS 22.0 Statistics Program. To determine the number of factors extracted by exploratory factor analysis and interpretability of each factor, confirmatory factor analysis should be done to confirm the fit of the identified factor model(Thompson, 2004). In order to confirm the validity of extracted factor and item structure through exploratory factor analysis, additional confirmatory factor analysis was performed and fitness was identified.

First, to determine the fitness of the model, χ^2 test was conducted. It rejected the null hypothesis of the model($\chi^2 = 828.93$, $df = 395$). However, χ^2 test is very sensitive to sample size. When null hypotheses are very strict, test has limitation in that the probability to reject the hypothesis is increased with increasing sample size(Cudeck & Henly, 1991; Hong, 2000). Therefore, we evaluated TLI, CFI, and RMSEA fitness index which considered model errors and principle of parsimony. As a result, the fitness index of the model was .06 for RMSEA, .85 for CFI, and .84 for TLI. Although the CFI and TLI value was slightly lower than .90 suggested index as a good fit(Bollen, 1989; Hoyle, 1995), RMSEA indicated as a fair fit(Browne & Cudeck, 1993; Hong, 2000). And Raykov and Widaman's work(as stated in Kanter, Rusch, Busch, & Sedivy, 2009) states that CFI and TLI can vary upon sample size. In conclusion, our results show that the Korean version of SAQ consisting five factors(same as the original scale) is a valid assessment tool.

Factor structures of the Korean version of SAQ and standardized coefficient estimates of the model are presented below(Figure 1). Latent variables' standardized coefficient estimates by measurement variables ranged from .28 to .82 with statistically significant difference. Correlation between latent variables was appropriate, with *r* ranging from .39 to .68. This confirmed the appropriateness of 30-item SAQ with five sub-factors.

Reliability

Cronbach's α for the Korean version of SAQ was 0.91, showing excellent internal consistency. Cronbach's α for the five factors were identified as Factor 1(.82), Factor 2(.83), Factor 3(.81), Factor 4(.79), and Factor 5(.81)(Table 4). Correlation coefficient between items of SAQ and total score ranged from .37 to .67, with items 8($r = .37$, $p < .01$) and item 20($r = .40$, $p < .01$) having relatively low correlations.

Additionally, test-retest reliability was evaluated with a sample of 57 out of 302 participants at two-week intervals. Test-retest reliability for the Korean version of SAQ was found to be .87 over a 2-week period. These results suggest that SAQ is a relatively stable scale to measure social anxiety level in Korea.

Correlations between SAQ and other measures

Correlations between SAQ and other measures are presented in

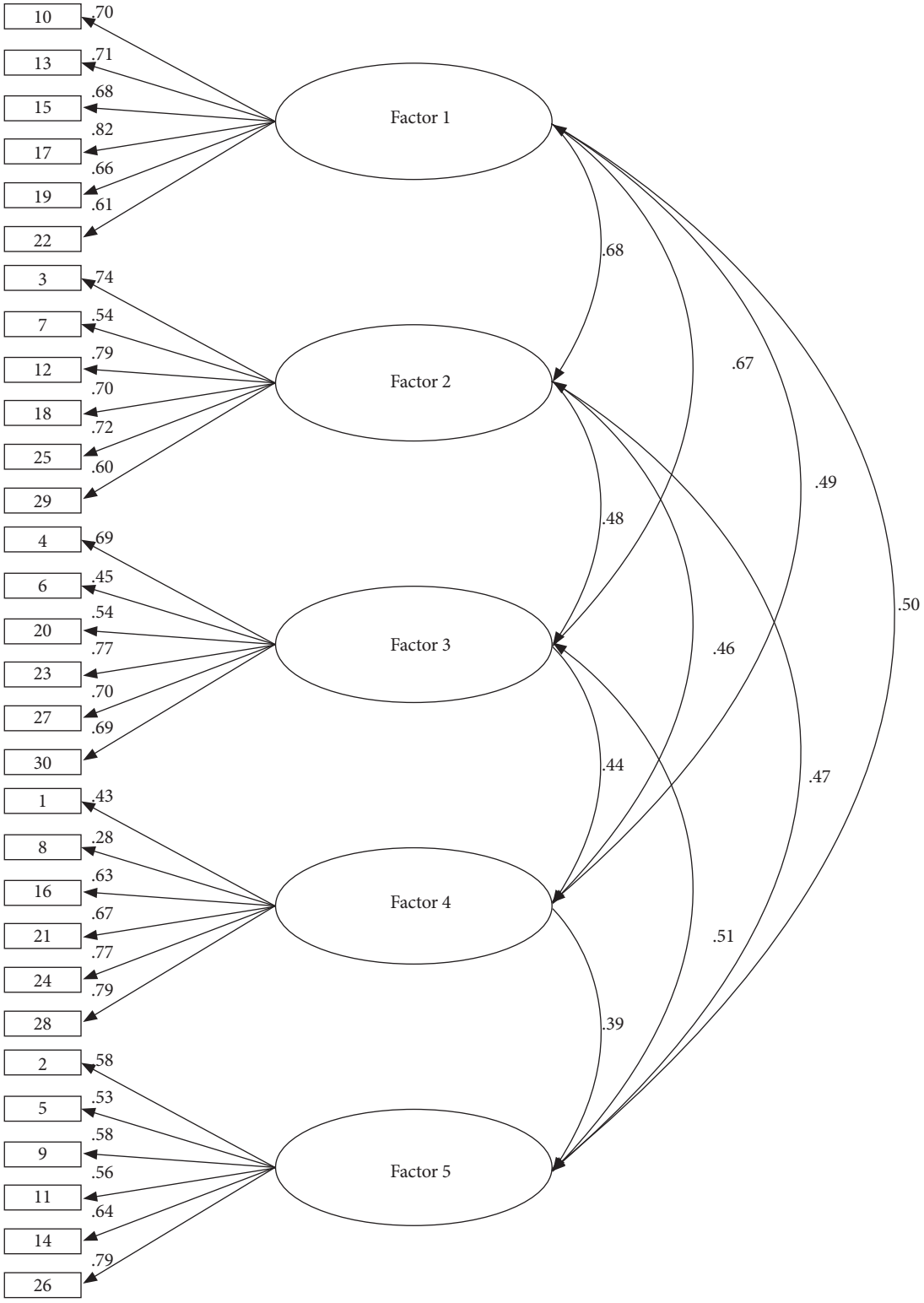

Figure 1. *Confirmatory factor structures of the Korean version of SAQ.*
Note. For ease of presentation, error terms for items are omitted. Factor 1 = Interactions with strangers; Factor 2 = Speaking in public/Talking with people in authority; Factor 3 = Interactions with the opposite sex; Factor 4 = Criticism and embarrassment; Factor 5 = Assertive expression of annoyance, disgust or displeasure.

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Table 4. *Internal Consistency for the Five Factors*

Factor	Items	Cronbach's α
1. Interactions with strangers	10, 13, 15, 17, 19, 22	.82
2. Speaking in public/Talking with people in authority	3, 7, 12, 18, 25, 29	.83
3. Interactions with the opposite sex	4, 6, 20, 23, 27, 30	.81
4. Criticism and embarrassment	1, 8, 16, 21, 24, 28	.79
5. Assertive expression of annoyance, disgust or displeasure	2, 5, 9, 11, 14, 26	.81
Total		.91

Table 5. *Correlations between the Korean Version of SAQ and Related Measures (N = 302)*

	1	2	3	4	5	6	7
1. SAQ	-						
2. LSAS	.65**	-					
3. LSAS-Anx	.64**	.94**	-				
4. LSAS-Av	.59**	.94**	.78**	-			
5. STAI-T	.41**	.43**	.40**	.42**	-		
6. BFNE	.49**	.34**	.38**	.27**	.49**	-	
7. CES-D	.32**	.35**	.34**	.33**	.79**	.31**	-

Note. SAQ = Social Anxiety Questionnaire (Caballo et al., 2015); LSAS = Liebowitz Social Anxiety Scale; LSAS-Anx = LSAS-Anxiety subscale; LSAS-Av = LSAS-Avoidance subscale; STAI-T = State-Trait Anxiety Inventory; BFNE = Brief version of Fear of Negative Evaluation Scale; CES-D = Center for Epidemiology Studies Depression Scale.
**$p < .01$.

Table 5. The Korean version of SAQ showed statistically significant correlation with LSAS($r = 65$, $p < .01$), anxiety subscale($r = 64$, $p < .01$), and avoidance subscale($r = 59$, $p < .05$). Likewise, state-trait anxiety inventory(STAI-T) measuring trait anxiety had statistically significant correlation with the Korean version of SAQ($r = 41$, $p < .01$). BFNE also showed significant correlation($r = 49$, $p < .01$) with the Korean version of SAQ. Moreover, depression scale(CES-D) showed significant correlation($r = 32$, $p < .01$) with the Korean version of SAQ.

Discussion

Social interaction is unavoidable in our daily lives. One who suffers from social anxiety may experience great distress and pain (Quilty et al., 2003; Wittchen et al., 2000). In recent years, DSM-5(APA, 2013) has proposed a subtype based on situational variables that are relatively stable in social anxiety disorder(Heimberg et al., 2014). These changes suggest that considering situational variables is clinically important to understand the heterogeneity of social anxiety disorder. Accordingly, we decided to develop and validate a Korean version of SAQ which was thoroughly established based on data collected from actual social anxiety inducing situations with five situational dimensions. Results of exploratory factor analysis revealed that factor structure of the Korean version of SAQ was consistent with factor structure of the original questionnaire. Results of confirmatory factor analysis confirmed that the Korean version of SAQ was a valid scale consisting five factors. Furthermore, there were good internal consistency and test-retest reliability. It also showed significant correlations with fear of negative evaluation and anxiety. In addition, as we recognize the need for social anxiety scale which can be attributed to Koreans' characteristics such as 'Chemyon(social face)', upward mobility consciousness, the result showed that factor (4) Criticism and embarrassment and factor (5) Assertive expression of annoyance, disgust or displeasure had the highest mean score in order. This implies that the Korean version of SAQ is a social anxiety scale that can be well applied in Korean contexts.

While general results supported the applicability of the Korean version of SAQ, there were some interesting results for discussion. Results of exploratory factor analysis revealed that item 8(Talking to someone who isn't paying attention to what I am saying) and item 1(Greeting someone and being ignored) had relatively low factor loadings. One possible explanation might be due to the number of samples and characteristics of samples used in this study. We additionally conducted exploratory factor analysis using the same method with a larger number of college students($N = 476$). As a result, both of these two items had factor loadings higher than .30(item 8 = .38, item 1 = .34). Thus, we did not exclude those two items. However, future research is needed to further test this with other independent samples.

The Korean version of SAQ also showed moderate correlations with the Korean version of LSAS. These results are in line with the study conducted by Caballo and colleagues(2015). They have also found that correlations between total score of the original version of SAQ and LSAS-SR Anxiety subscale and LSAS-SR total score were moderate in both patients(.56 and .55, respectively) and non-patient samples(.65 and .67, respectively). Although both LSAS and SAQ are social anxiety measures, their moderate correlations

showed that these two measures may assess somewhat different aspects of social anxiety. More specifically, while LSAS mainly measures social anxiety related to 'performance evaluation' situation, SAQ measures social anxiety related to various situations including 'performance evaluation' situation, 'interactions with opposite sex' situation and 'assertive expression of annoyance, disgust, or displeasure' situation. The Korean version of SAQ can measure such situations, thus allowing future social anxiety research to be enriched.

Although the present study provided information on cross-cultural applicability of the Korean version of SAQ, it has several limitations. First, our sample was made of students. Therefore, caution is needed when generalizing our results. Since this study was done with college students, their levels of social anxiety could be lower than those of clinical samples with social anxiety disorder. As characteristics of our sample do not reflect characteristics of social anxiety disorder group, future studies are needed to confirm whether results of this study could be repeatedly verified for participants diagnosed as SAD. Second, our study relied fully on self-report measures which could be subjective to social desirability and other limitations. To overcome this problem, future research is needed to investigate whether the Korean version of SAQ is also correlated with other external and more ecologically valid criteria. Lastly, this study did not assess discriminant validity. Further study is needed to examine discriminant validity in order to support the soundness of SAQ.

Conclusion

Distinguishing the situational dimensions that cause social anxiety is expected to capture the heterogeneity of disability, and this trend is in line with the change of DSM-5's subtype in social anxiety disorder. This study, validating the Korean version of SAQ, is expected to evaluate not only the general anxiety level but also for each dimensions' anxiety level, thus broadening the research field in SAD for researchers who need to identify the situationally defined social anxiety dimensions. Results of the study demonstrate that the Korean version of SAQ has good internal consistency, test-retest reliability, criterion validity, and construct validity. It is necessary to confirm the level of anxiety upon various circumstances as individuals could feel nervous depending on the situations. In this respect, the Korean version of SAQ is expected to be utilized as a useful tool for clinical research, for instance developing treatment programs related to specific social anxiety provoking situations.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Bentley, K. H., Franklin, J. C., Ribeiro, J. D., Kleiman, E. M., Fox, K. R., & Nock, M. K. (2016). Anxiety and its disorders as risk factors for suicidal thoughts and behaviors: A meta-analytic review. *Clinical Psychology Review, 43*, 30-46. doi.org/10.1016/j.cpr.2015.11.008

Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: A primer. *Frontiers in Public Health, 6*.

Bollen, K. A. (1989). *Structural equations with latent variables*. Oxford, UK: Wiley.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. *Sage Focus Editions, 154*, 136-136. doi.org/10.1177/0049124192021002005

Caballo, V. E., Arias, B., Salazar, I. C., Irurtia, M. J., & Hofmann, S. G. (2015). Psychometric properties of an innovative self-report measure: The Social Anxiety Questionnaire for adults. *Psychological Assessment, 27*, 997-1012. doi.org/10.1037/a0038828

Caballo, V. E., Salazar, I. C., Irurtia, M. J., Arias, B., & Hofmann, S. G. (2010). Measuring social anxiety in 11 countries. *European Journal of Psychological Assessment, 26*, 95-107. doi.org/10.1027/1015-5759/a000014

Chon, K. K., Choi, S. C., & Yang, B. C. (2001). Integrated adaptation of CES-D in Korea. *Korean Journal of Health Psychology, 6*, 59-76.

Corcoran, K., & Fisher, J. (1987). *Measures for clinical practice*. New York, NY: Free Press.

Cudeck, R., & Henly, S. J. (1991). Model selection in covariance structures analysis and the "problem" of sample size: A clarification. *Psychological Bulletin, 109*, 512-519. doi.org/10.1037//0033-2909.109.3.512

Haynes, S. N., Richard, D., & Kubany, E. S. (1995). Content validity in psychological assessment: A functional approach to concepts and methods. *Psychological Assessment, 7*, 238-247. doi.org/10.1037/1040-3590.7.3.238

Heeren, A., Maurage, P., Rossignol, M., Vanhaelen, M., Peschard, V., Eeckhout, C., & Philippot, P. (2012). Self-report version of the

https://doi.org/10.15842/kjcp.2019.38.2.008

Liebowitz Social Anxiety Scale: Psychometric properties of the French version. *Canadian Journal of Behavioural Science, 44*, 99-107. doi.org/10.1037/a0026249

Heimberg, R. G., Hofmann, S. G., Liebowitz, M. R., Schneier, F. R., Smits, J. A., Stein, M. B., . . . Craske, M. G. (2014). Social anxiety disorder in DSM-5. *Depression and Anxiety, 31*, 472-479. doi.org/10.1002/da.22231

Hong, S. H. (2000). The criteria for selecting appropriate fit indices in structural equation modeling and their rationales. *Korean Journal of Clinical Psychology, 19*, 161-177.

Hoyle, R. H. (1995). *Structural equation modeling: Concepts, issues, and applications*. Thousand Oaks, CA: Sage.

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika, 39*, 31-36. doi.org/10.1007/bf02291575

Kanter, J. W., Rusch, L. C., Busch, A. M., & Sedivy, S. K. (2009). Validation of the Behavioral Activation for Depression Scale (BADS) in a community sample with elevated depressive symptoms. *Journal of Psychopathology and Behavioral Assessment, 31*, 36-42. doi.org.ssl.openlink.ajou.ac.kr/10.1007/s10862-008-9088-y

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry, 62*, 593-602. doi.org/10.1001/archpsyc.62.6.593

Kim, J. T., & Shin, D. K. (1978). A study based on the standardization of the STAI for Korea. *New Med J, 21*, 69-75.

Leary, M. R. (1983). A brief version of the Fear of Negative Evaluation Scale. *Personality and Social Psychology Bulletin, 9*, 371-375. doi.org/10.1177/0146167283093007

Lee, J. Y., & Choi, J. H. (1997). A study of the reliability and the validity of the Korean versions of Social Phobia Scales (K-SAD, K-FNE). *Korean Journal of Clinical Psychology, 16*, 251-264.

Lee, S. H., Shin, Y. C., & Oh, K. S. (1994). A clinical study of social phobia for 10 years. *Journal of Korean Neuropsychiatric Association, 33*, 305-312.

Liebowitz, M. R. (1987). Social phobia. *Modern Problems in Pharmacopsychiatry, 22*, 141-173. doi.org/10.1159/000414022

Mattick, R. P., & Clarke, J. C. (1998). Development and validation of measures of social phobia scrutiny and social interaction anxiety. *Behaviour Research and Therapy, 36*, 455-470.

Miller, R. S. (1995). On the nature of embarrassability: Shyness, social evaluation, and social skill. *Journal of Personality, 63*, 315-339. doi.org/10.1111/j.1467-6494.1995.tb00812.x

Morrison, A. S., & Heimberg, R. G. (2013). Social anxiety and social anxiety disorder. *Annual Review of Clinical Psychology, 9*, 249-274. doi.org/10.1146/annurev-clinpsy-050212-185631

Nunnally, J. C. (1978). *Psychometric Theory*. New York, NY: McGraw-Hill.

Oh, K. S., Huh, M. Y., & Lee, S. H. (1999). Correlations of Social Anxiety and Socio-Cultural Factors. *Journal of Korean Neuropsychiatric Association, 38*, 64-76.

Park, S. Y. (2003). *The difference of social anxiety subtypes according to the characteristics of social anxiety-provoking situations* (Master's thesis). Seoul National University, Seoul, Korea.

Quilty, L. C., Van Ameringen, M., Mancini, C., Oakman, J., & Farvolden, P. (2003). Quality of life and the anxiety disorders. *Journal of Anxiety Disorders, 17*, 405-426. doi.org/10.1016/s0887-6185(02)00225-6

Radloff, L. S. (1977). The CES-D scale a self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-401.

Romm, K. L., Rossberg, J. I., Berg, A. O., Hansen, C. F., Andreassen, O. A., & Melle, I. (2011). Assessment of social anxiety in first episode psychosis using the Liebowitz Social Anxiety scale as a self-report measure. *European Psychiatry, 26*, 115-121. doi.org/10.1016/j.eurpsy.2010.08.014

Shin, H. L. (2012). *The differences of Anxiety Responses in Social Anxiety Subtypes Based on Feared Social Situations* (Doctoral dissertation). Yonsei University, Seoul, Korea.

Song, J. Y., & Park, K. H. (2009). The sociocultural variables influencing social anxiety with concern for offending others. *The Korean Journal of Health Psychology, 14*, 329-343.

Spielberger, C. D., Gorsuch, R. L., Lushene, R., Vagg, P. R., & Jacobs, G. A. (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.

Thompson, B. (2004). *Exploratory and confirmatory factor analysis: Understanding concepts and applications*. Washington, DC: American Psychological Association.

Watson, D., & Friend, R. (1969). Measurement of social-evaluative anxiety. *Journal of Consulting and Clinical Psychology, 33*, 448-457. doi.org/10.1037/h0027806

Wittchen, H. U., Fuetsch, M., Sonntag, H., Müller, N., & Liebowitz, M. (2000). Disability and quality of life in pure and comorbid social phobia. Findings from a controlled study. *European Psychiatry, 15*, 46-58. doi.org/10.1016/s0924-9338(00)00211-x

Appendix 1.

사회불안 척도(SAQ)

아래에는 당신에게 긴장감, 불편함 또는 스트레스를 유발할 수 있는 사회적 상황들이 제시되어 있습니다. **각각의 사회적 상황에 대해서 당신의 반응과 가장 잘 일치한다고 생각되는 숫자에 O표 해주십시오.** "1"은 긴장감, 불편함 또는 스트레스가 거의 없음을 의미하고 "5"는 긴장감, 불편함 혹은 스트레스가 매우 높음을 뜻합니다.

만약 제시된 상황을 한 번도 경험한 적이 없다면, 당신이 이러한 상황에 처했을 때 얼마나 긴장감, 불편감 또는 스트레스를 느낄 것인지 상상해 보세요. 그리고 당신이 어떻게 느낄지를 평가하여 적절한 숫자에 O표 해주십시오. 모든 문항들을 읽고 솔직하게 응답해 주시기 바랍니다. 정답에 있어 옳고 그름이 없는 문항들인 만큼 걱정하지 마시고 표시해 주십시오.

내용	전혀/거의 불편하지 않다	약간 불편하다	상당히 불편하다	많이 불편하다	매우/극히 불편하다
1. 누군가에게 인사했는데 무시당했을 때	1	2	3	4	5
2. 옆 사람에게 조용히 해달라고 요구해야 할 때	1	2	3	4	5
3. 많은 사람들 앞에서 말할 때	1	2	3	4	5
4. 호감 가는 사람에게 데이트를 요청할 때	1	2	3	4	5
5. 점원에게 음식에 대해 불만을 얘기할 때	1	2	3	4	5
6. 내가 호감을 느끼는 사람들이 날 쳐다보고 있다고 느낄 때	1	2	3	4	5
7. 지위가 높은 사람들을 만나는 모임에 참여할 때	1	2	3	4	5
8. 내 말에 주의를 집중하지 않는 사람에게 얘기할 때	1	2	3	4	5
9. 하기 싫은 일에 대한 부탁을 거절할 때	1	2	3	4	5
10. 새로운 친구들을 사귈 때	1	2	3	4	5
11. 누군가에게 그들 때문에 내 기분이 상했다는 사실을 얘기할 때	1	2	3	4	5
12. 수업, 업무 또는 회의 중에 발언해야 할 때	1	2	3	4	5
13. 방금 처음 만난 사람과 대화를 계속할 때	1	2	3	4	5
14. 귀찮게 구는 사람에게 내가 짜증났다는 것을 전달할 때	1	2	3	4	5
15. 내가 잘 모르는 사람들의 모임에서 한 명씩 인사를 나눌 때	1	2	3	4	5
16. 여러 사람들 앞에서 놀림을 당할 때	1	2	3	4	5
17. 파티나 회의에서 내가 모르는 사람들에게 얘기할 때	1	2	3	4	5
18. 수업시간에 선생님으로부터 혹은 미팅에서 상사로부터 질문을 받았을 때	1	2	3	4	5
19. 방금 처음 만난 사람과 대화하면서 그 사람의 눈을 쳐다볼 때	1	2	3	4	5
20. 호감 가는 사람으로부터 데이트 신청을 받을 때	1	2	3	4	5
21. 다른 사람들 앞에서 실수했을 때	1	2	3	4	5
22. 내가 아는 사람이 한 명밖에 없는 모임에 참석할 때	1	2	3	4	5
23. 호감을 느끼는 사람에게 말을 걸 때	1	2	3	4	5
24. 내가 잘못한 것에 대해서 질책받을 때	1	2	3	4	5
25. 동료나 학우들과 저녁을 먹으면서 전체 그룹을 대신하여 말을 하도록 요청받을 때	1	2	3	4	5
26. 신경에 거슬리는 행동을 하는 사람에게 그 행동을 그만해달라고 얘기할 때	1	2	3	4	5
27. 호감 가는 사람에게 같이 춤추자고 얘기할 때	1	2	3	4	5
28. 비판을 받을 때	1	2	3	4	5
29. 상급자나 높은 위치에 있는 사람에게 말할 때	1	2	3	4	5
30. 호감을 느끼는 사람에게 더 친해지고 싶다고 얘기할 때	1	2	3	4	5

Caballo, Salazar, Arias, Irurtia, Calderero, & CISO-A Research Team, (2010). Caballo, Salazar, Arias, Irurtia, Hofmann, & CISO-A Research Team, (2015).

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