The Japanese self-focused attention scale: Factor structure, internal consistency, convergent, and discriminant validity

Noda, S.; Okawa, S.; Shirotsuki, K.; Sasagawa, S.; Bögels, S.M.

DOI
10.1002/jclp.23133

Publication date
2021

Document Version
Final published version

Published in
Journal of clinical psychology

Received: 1 April 2020 | Revised: 20 January 2021 | Accepted: 3 March 2021

DOI: 10.1002/jclp.23133

BRIEF REPORTS

WILEY

The Japanese self-focused attention scale: Factor structure, internal consistency, convergent, and discriminant validity

Shota Noda MA[1,2] | Sho Okawa MA[3,4,5] | Kentaro Shirotsuki PhD[6] | Satoko Sasagawa PhD[7] | Susan M. Bögels PhD[8]

[1]Graduate School of Human and Social Sciences, Musashino University, Koutouku, Tokyo, Japan

[2]Tokyo Mindfulness Center, Minatoku, Tokyo, Japan

[3]United Graduate School of Child Development, Osaka University, Suita, Osaka, Japan

[4]Research Center of Child Mental Development, Chiba University, Chiba-shi, Chiba, Japan

[5]Department of Cognitive Behavioral Physiology, Chiba University, Chiba-shi, Chiba, Japan

[6]Faculty of Human Sciences, Musashino University, Koutouku, Tokyo, Japan

[7]Faculty of Human Sciences, Mejiro University, Shinjukuku, Tokyo, Japan

[8]Research Institute of Child Development and Education, University of Amsterdam, NG Amsterdam, The Netherlands

Correspondence

Shota Noda, Graduate School of Human and Social Sciences, Musashino University, 3-3-3 Ariake, Koutouku, Tokyo 135-8181, Japan.
Email: norashouta@outlook.jp

Abstract

Objective: Self-focused attention is a maintaining factor for social anxiety disorder. It was shown that self-focused attention correlates with trait mindfulness, but not with attention control. This study examined the reliability and validity of the Japanese version of the self-focused attention (J-SFA) scale.

Method: Students ($N = 502$) completed a set of questionnaires, measuring self-focused attention, social anxiety symptoms, trait mindfulness, and attention control.

Results: A confirmatory factor analysis indicated that the J-SFA scale has a bi-factor structure. The Cronbach's α coefficient was high. Correlation analysis showed that each factor of the J-SFA scale was significantly weakly to moderately correlated with social anxiety symptoms and trait mindfulness, and the J-SFA scale's factors were significantly or non-significantly very weakly correlated with attentional control functions.

Conclusion: The findings indicate that the J-SFA demonstrated satisfactory reliability and validity for our sample

Abbreviations: AIC, Akaike information criterion; CFA, confirmatory factor analysis; CFI, comparative fit index; CI, confidence interval; CITC, corrected item-total correlations; J-SFA scale, Japanese version of the self-focused attention scale; LSAS, Liebowitz social anxiety scale; MAAS, Mindful attention awareness scale; RMSEA, root mean square error of approximation; SAD, social anxiety disorder; SFA scale, Self-focused attention scale; SFNE, Short fear of negative evaluation scale; SRMR, standardized root mean squared residual; TLI, Tucker-Lewis index; VACS, Voluntary attention control scale.

Funding information
Grant-in-Aid for Scientific Research (C) KAKENHI, Grant/Award Number: 17K04463

and provide impetus for future research into the measure for clinical and nonclinical samples in Japan.

KEYWORDS
Japan, reliability, self-focused attention, social anxiety, validity

1 | INTRODUCTION

Social anxiety disorder (SAD) is a marked or intense fear or anxiety of social situations in which an individual may be scrutinized by others (American Psychiatric Association, 2013). The lifetime prevalence of SAD is reported to be 12.1% in the United States, 2.6%–7.8% in the Netherlands, 8.5% in Australia, 1.4% in Japan, 0.5% in Korea, and 1.2% in Spain (Bijl et al., 1998; Cho et al., 2015; Stein et al., 2017). Thus, individualistic countries, such as the United States, Australia, and the Netherlands have higher prevalence rates than collectivist countries, such as Japan, Korea, and Spain. In contrast to the much lower disorder prevalence of SAD in collectivist countries compared to individualistic countries, it has been shown that people in collectivist countries have significantly higher social anxiety symptoms, when measured on a continuum, than people in individualistic countries (Heinrichs et al., 2006). Heinrichs et al. (2006) also suggested that collectivistic countries are more accepting of withdrawn and introverted behaviors, whereas individualistic countries are more positively disposed toward extraverted and attention-seeking behaviors. Since socially reticent behaviors are accepted in collectivistic cultures, social anxiety symptoms have to be more extreme before they meet the criteria of "excessive" (C) and "interference" (E) of the Diagnostic and Statistical Manual of Mental Disorders-5 definition.

Recently, many studies have investigated the mechanisms underlying the maintenance and exacerbation of social anxiety symptoms and disorder. Cognitive behavioral models of social anxiety contain several mechanisms that explain the persistence of symptoms (Clark & Wells, 1995; Hofmann & Otto, 2008; Rapee & Heimberg, 1997). According to these models, self-focused attention is one core factor that maintains and exacerbates social anxiety. Self-focused attention is "an awareness of self-referent, internally generated information that stands in contrast to an awareness of externally generated information derived through sensory receptors" (Ingram, 1990, p. 156). This self-referent information includes internal information (e.g., body state, thoughts, feelings, and behaviors). When highly socially anxious individuals think they are in danger of negative evaluation by others, they shift their attention to detailed monitoring and observation of themselves (Clark & Wells, 1995). In Mansell et al. (2003) study, in the presence of social threat stimuli, individuals with high social anxiety were more sensitive to internal stimuli than those with low social anxiety. These findings suggest that those with high social anxiety tend to have self-focused attention in threatening social situations.

According to cognitive behavioral models, individuals have increased social anxiety due to forming negative self-images and perceptions based on information gained from their self-focused attention in social situations (Clark & Wells, 1995; Hofmann & Otto, 2008; Rapee & Heimberg, 1997). Self-focused attention during an interaction leads to biased judgments and recollections of the event, and this pattern is more pronounced among highly socially anxious than less socially anxious individuals (Melling & Alden, 2000). Lower self-focused attention helps to prevent and treat SAD (Vriends et al., 2017). Intervention studies targeting improvement in self-focused attention as a therapeutic strategy for social anxiety have been conducted, of which many have reported that such interventions decrease social anxiety and other symptoms (Bögels et al., 1997; Bögels, 2006; Mulkens et al., 2001). Overall, self-focused attention appears to be a core mechanism for maintaining social anxiety, and improving it reduces social anxiety.

The focus of attention questionnaire (FAQ) (Woody, 1996) and the self-focused attention (SFA) scale (Bögels et al., 1996) are available as measures of self-focused attention in social situations. The FAQ consists of a self-focus

scale and other-focus scale, and both scales have five items. The FAQ is designed to be used immediately after a social task, as a state measure (Woody, 1996). The SFA scale measures only self-focused attention and consists of a "arousal" and a "behavior" factor with six and five items, respectively. The arousal factor measures self-focused attention to the body state and feelings in social situations. The behavior factor assesses self-focused attention on one's own behaviors in social situations. The SFA scale is designed to measure self-focused attention in a wide range of social situations, as a trait measure. Only the arousal factor has been shown to influence fear of blushing (Bögels et al., 1996), suggesting that the effect on social anxiety symptoms may differ among factors. Based on these observations, the SFA scale can measure more generalized and multifaceted self-focused attention compared to the FAQ.

The SFA scale has high reliability, validity, and responsiveness (Bögels et al., 1996; Bögels et al., 2006; Bögels, 2006). Individuals with high social anxiety have a higher degree of self-focused attention, as measured by the SFA scale, than those with low social anxiety (Bögels et al., 1996; Voncken et al., 2010). It has been shown that self-focused attention, as measured by the SFA scale, predicts increased self-rated anxiety during conversations and maintains SAD (Vriends et al., 2017). It has also been confirmed that self-focused attention, as assessed by the SFA scale, is reduced and social anxiety is improved after interventions that aim to improve self-focused attention (Bögels et al., 2006; Bögels, 2006). Therefore, the SFA scale is considered a highly accurate and useful tool for measuring self-focused attention. However, in Japan, no highly accurate scale exists that can measure self-focused attention, particularly in social situations. While many SAD studies use the SFA scale, as mentioned above, a Japanese version of the SFA (J-SFA) scale has not yet been developed.

Therefore, this study aimed to develop the J-SFA scale, based on the original SFA scale of Bögels et al. (1996), and to examine its reliability and validity. Specifically, we examined internal consistency, factorial validity, convergent validity, and discriminant validity. This scale will make it possible to measure the degree of self-focused attention in social anxiety in Japan. Further, the J-SFA scale will contribute to the development of research on self-focused attention in Japan, and to the examination of the effects of interventions designed to modify self-focused attention.

1.1 | Hypotheses

1.1.1 | Hypotheses regarding factorial validity

After performing an exploratory factor analysis with Varimax rotation, Bögels et al. (1996) reported that the SFA scale consists of an arousal factor and a behavior factor. Meanwhile, a correlation analysis by Bögels et al. (1996) showed a significant moderate correlation between the arousal and behavior factors. This suggests that there may be an interfactor correlation between the arousal and behavior factors. Therefore, it is assumed that the model fit indices of a correlated two-factor model with two first-order latent factors (arousal and behavior) are higher than that of a one-factor model and non-correlated two-factor model. We compared the model fit indices of three models—the one-factor model, non-correlated two-factor model, and correlated two-factor model.

1.1.2 | Hypotheses regarding convergent validity

Bögels et al. (1996) showed moderate positive correlations between self-focused attention measured by the SFA scale and social anxiety symptoms measured by the social phobia and anxiety inventory (SPAI) ($r = 0.44–0.48$). In this study, we assumed that moderate positive correlation coefficients would be obtained between each factor of the J-SFA scale and the Japanese versions of the Liebowitz social anxiety scale (LSAS) (Asakura et al., 2002) and short fear of negative evaluation scale (SFNE) (Sasagawa et al., 2004), which measure social anxiety symptoms.

Furthermore, Úbeda-Gómez et al. (2015) found that trait mindfulness measured by the mindful attention awareness scale (MAAS) (Brown & Ryan, 2003) was negatively and moderately correlated with self-focused attention measured by the self-absorption scale (r = −0.57 to −0.60). Mindfulness-based interventions that enhance trait mindfulness reduce self-focused attention, as measured by the SFA scale (Bögels et al., 2006; Desnoyers et al., 2017). Therefore, we assumed that negative correlation coefficients would be obtained between each factor of the J-SFA scale and MAAS.

1.1.3 | Hypotheses regarding discriminant validity

Voluntary attention control refers to the ability to focus voluntary attention on a variety of objects. Voluntary attention control, as measured by the voluntary attention control scale (VACS), includes three functions: selective attention, switching attention, and divided attention. Each function negatively correlates with social anxiety symptoms (Tomita et al., 2016). In contrast, self-focused attention—measured by the J-SFA scale—refers to a tendency toward passive self-focused attention in social situations and is a different concept from attention control. There are nonsignificant and very weak correlations between self-focused attention from an observer's perspective measured by the mental perceptive scale for SAD and selective attention, switching attention, and divided attention, measured by the VACS (Tomita et al., 2018) (r = −0.05 to 0.18). Based on the above, we hypothesized that very weak correlation coefficients would be obtained between each factor of the J-SFA scale and the three functions measured by the VACS.

2 | METHODS

2.1 | Measures

The SFA scale measures self-focused attention. It contains 11 items, including 6 items for arousal and 5 items for behavior. Each item is rated on a five-point scale from 0 (not at all) to 4 (very much). The SFA scale's high internal consistency (arousal subscale: α = 0.86; behavior subscale: α = 0.78) and factorial validity were confirmed by Bögels et al. (1996). Each factor of the SFA scale showed moderate negative correlations with the social anxiety subscale of SPAI (Turner et al., 1989) (arousal factor: r = 0.48, p < 0.01; behavior factor: r = 0.44, p < 0.01), supporting its convergent validity (Bögels et al., 1996).

The SFA scale (Bögels et al., 1996) was translated into Japanese using the translation and back-translation procedure based on the consensus-based standards for the selection of health measurement instruments checklist (Mokkink et al., 2012). The first author translated the original SFA scale from English into Japanese. The first, second, and third authors discussed the clarity, language expression, and conceptual equivalence of the translated SFA scale, and the instructions and all items were adjusted. Through this process, the items of the J-SFA scale were prepared. Thereafter, to examine the Japanese translation's validity, we commissioned translators from an agency (Text Co. Ltd) to confirm the translation. Additionally, a researcher who has significant experience living in English-speaking countries and who is familiar with English conducted the back-translation. The fourth author reconfirmed the appropriateness of the scale's English translation as well as the original SFA scale's contents, and the instructions and one item were adjusted to reflect the intention of the original scale. Finally, the fifth author confirmed the translation equivalence of the items, and the J-SFA scale was finalized.

To examine the J-SFA scale's convergent validity, we used the LSAS (Liebowitz, 1987). It measures fear and avoidance of 11 social interaction situations and 13 performance situations. The scale contains 24 items for rating fear and 24 for avoidance. Each item is rated on a 4-point scale from 0 (“none” on the fear scale, and “never” on the avoidance scale) to 3 (“severe” on the fear scale, and “usually” on the avoidance scale). The Japanese version of the

LSAS (Asakura et al., 2002) has the same factor structure as the original version (Okajima et al., 2007). Okajima et al. (2007) demonstrated that the Japanese version of the LSAS has high internal consistency (fear scale: Cronbach's $\alpha = .94$; avoidance scale: $\alpha = .92$), and each subscale of the LSAS was significantly either moderately to highly correlated with the Japanese social phobia scale (SPS) (Kanai et al., 2004) (LSAS total: $r = 0.59$, $p < 0.01$; fear scale: $r = 0.61$, $p < 0.01$; avoidance scale: $r = 0.50$, $p < 0.01$) and the Japanese social interaction anxiety scale (SIAS) (Kanai et al., 2004) (LSAS total: $r = 0.68$, $p < 0.01$; fear scale: $r = 0.70$, $p < 0.01$; avoidance scale: $r = 0.60$, $p < 0.01$), supporting its high reliability and validity. The LSAS also demonstrated good internal consistency in the study (fear scale: $\alpha = 0.94$; avoidance scale: $\alpha = 0.92$).

To examine the J-SFA scale's convergent validity, we used the SFNE scale. The fear of negative evaluation scale (FNE) (Watson & Friend, 1969) assesses fear of negative evaluation. The FNE scale has 30 true/false items. Leary (1983) developed a brief version of the FNE scale, because the FNE scale has many items, making it difficult to include in a battery of tests. In Japan, Ishikawa et al. (1992) developed the Japanese version of the FNE scale, and Sasagawa et al. (2004) developed the short version of the Japanese FNE scale (SFNE). The SFNE scale contains 12 items that are rated on a 5-point scale from 1 (not at all characteristic) to 5 (extremely characteristic of me). According to Nihei et al. (2018), the SFNE scale has high internal consistency (forward-item factor: $\alpha = 0.94$; reversed-item factor: $\alpha = 0.86$), test–retest reliability (forward-item factor: intraclass correlation coefficient [ICC] = 0.94; reversed-item factor: ICC = 0.86), and factorial validity. The SFNE scale showed weakly negative correlations with each subscale of the LSAS (LSAS total: $r = 0.34$, $p < 0.01$; fear scale: $r = 0.38$, $p < 0.01$; avoidance scale: $r = 0.25$, $p < 0.01$), thus supporting its convergent validity (Nihei et al., 2018). The SFNE demonstrated good internal consistency in the study (forward-item factor: $\alpha = 0.93$; reversed-item factor: $\alpha = 0.89$).

To assess the J-SFA scale's convergent validity, we used the MAAS (Brown & Ryan, 2003), which measures trait mindfulness. The scale contains 15 items, each rated on a 6-point scale from 1 (almost always) to 6 (almost never). Fujino et al. (2015) developed the Japanese version of the MAAS, which has high internal consistency ($\alpha = 0.93$) and factorial validity. The Japanese version of the MAAS showed moderate negative correlations with the trait subscale of the state trait anxiety invention (Shimizu & Imae, 1981) ($r = -0.50$, $p < 0.01$), the Japanese SPS ($r = -0.41$, $p < 0.01$), the Japanese SIAS ($r = -0.46$, $p < 0.01$), the SFNE ($r = -0.39$, $p < 0.01$), and the Japanese version of self-rating depression scale (Fukuda & Kobayashi, 1973) ($r = -0.48$, $p < 0.01$), thus supporting its convergent validity (Fujino et al., 2015). The MAAS showed good internal consistency in the study ($\alpha = 0.83$).

To evaluate the J-SFA scale's discriminant validity, we used the VACS. Imai et al. (2015) developed the VACS to assess voluntary attention control (selective attention, switching attention, and divided attention). Selective attention is the ability to direct attention from multiple objects to a single specific object; the selective attention subscale includes such items as "even when the surroundings are noisy, you can focus on one thing you have to do" (Imai et al., 2015, p. 94). Switching attention is the ability to appropriately switch attention to other objects, and the switching attention subscale includes such items as "you can concentrate on doing two things alternately" (Imai et al., 2015, p. 94). Divided attention is the ability to simultaneously pay attention to multiple objects, and the divided attention subscale includes such items as "you can divide attention and concentrate on many things at the same time" (Imai et al., 2015, p. 94). The VACS contains 18 items with six items for each factor, and each item is rated on a 6-point scale from 1 (not at all) to 6 (very much). It was confirmed that VACS has high internal consistency (the selective attention subscale: $\alpha = 0.86$, the switching attention subscale: $\alpha = 0.89$, the divided attention subscale: $\alpha = 0.92$), test–retest reliability (the selective attention subscale: ICC = 0.71; the switching attention subscale: ICC = 0.54; the divided attention subscale: ICC = 0.69), and factorial validity (Imai et al., 2015). Imai et al. (2015) demonstrated the moderate positive correlations between the selective attention subscale scores and dichotic listening task scores about selective attention, between the switching attention subscale scores and dichotic listening task scores about switching attention, and between the divided attention subscale scores and dichotic listening task scores about divided attention. This supports convergent validity. And each factor has a weak negative correlation with social anxiety symptoms (Tomita et al., 2016). The VASC showed good internal consistency

in the study (the selective attention subscale: $\alpha = 0.88$, the switching attention subscale: $\alpha = 0.89$, the divided attention subscale: $\alpha = 0.94$).

2.2 | Participants and procedure

Participants were recruited from two universities (January 2018–May 2019). A questionnaire survey was conducted with 610 undergraduate students studying human sciences. We distributed a set of questionnaires, explained the ethical considerations in writing and verbally, and asked for the students' consent to participate. The participants completed the survey after university lectures, and no reward was given for participation. The set of questionnaires consisted of MAAS, VACS, J-SFA scale, SFNE, and LSAS, and they were completed in that order. Thirty-one questionnaires were returned without all J-SFA scale items answered, and five questionnaires had one missing value; these questionnaires were thus excluded from the analysis. Of the original sample, 574 (163 male, 406 female, five missing values) completed the J-SFA scale, and these responses were analyzed to examine the J-SFA scale's factor structure. The effective response rate was 94.10%, and the mean age was 19.60 years ($SD = .97$, three missing values). A total of 502 participants (139 male, 358 female, five missing values) completed all the scales. Ninety-three questionnaires were submitted without all items of these scales answered, and 15 participants stopped answering partway through the questionnaires; data from these participants were excluded from the analysis. Therefore, the data of 502 participants were analyzed to examine the J-SFA scale's reliability and validity. The effective response rate was 82.30%, and the mean age was 19.61 ($SD = .98$, three missing values). There was no significant difference in sex, age, VACS, J-SFA scale, SFNE, and LSAS scores between the data without missing values and data with missing values. On the other hand, the data with missing values had a significantly lower MAAS score than those without missing values ($t[571] = -2.30$, $p = 0.02$, Cohen's $d = -0.29$ [95% confidence interval {CI} = −0.54 to −0.04]).

This study was approved by the ethics committee of the first author's affiliated university (approval number: 29029).

2.3 | Statistical analyses

To examine the scale's factorial validity, confirmatory factor analyses (CFA) using robust maximum likelihood were performed. The model fit indices for the one-factor model, non-correlated two-factor model, and correlated two-factor model were examined using the CFA. The model with the highest index values was accepted. The chi-square values (χ^2/df), comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), standardized root mean squared residual (SRMR), and Akaike information criterion (AIC) were used as model fit indices. A good model fit was indicated by a nonsignificant χ^2 value (Schermelleh-Engel et al., 2003). For the CFI and TLI, values above 0.90 indicate a good fit, whereas values above 0.95 indicate a very good fit (dell'Olio et al., 2018; Voncken et al., 2010). A RMSEA value of 0.05 or less is considered a good fit, 0.08 indicates an acceptable fit, and 0.10 or more is a poor fit (Browne & Cudeck, 1993). SRMR values below 0.08 are a good fit (Hu & Bentler, 1999). AIC was used to compare the hypothesized models, with a lower AIC indicating a better model (Akaike, 1973; Ito, 2018). According to Comrey and Lee (1992), 500 is very good sample size for factor analysis. Therefore, the sample size for CFA was set to 500 or more in this study.

Cronbach's α coefficients for the overall scale and each factor of the J-SFA scale were computed to examine internal consistency. The Cronbach's α coefficients reported in Bögels et al. (1996) study for the overall scale, arousal factor, and behavior factor of the SFA scale were 0.88, 0.86, and 0.78, respectively. For the Japanese version, for the overall scale and both factors, α coefficients of 0.70 or higher were considered

acceptable, and coefficients of 0.80 or higher were considered good (Zeller, 2005). The sample size required to establish Cronbach's α coefficients was calculated using the formula proposed by Bonett (2002). Bonett's (2002) calculations showed that a sample of at least 68 participants was required to α coefficients of 0.70 (significance level (two-sided) = 0.05; power = 0.80; number of items = 11; Cronbach's α coefficient at null hypothesis = 0.50).

Regarding the Cronbach's α coefficients, it is considered to underestimate the internal consistency reliability when the tau-equivalence assumption is violated (Graham, 2006). When this occurs, it is appropriate to calculate the McDonald's ω coefficients (McNeish, 2018). Therefore, in this study, we calculated not only Cronbach's α coefficients but also McDonald's ω coefficients.

In addition, we performed *t* tests to examine gender differences for each scale and correlation analyses were conducted to examine the J-SFA's convergent validity and discriminant validity. Pearson's correlation coefficients between each factor of the J-SFA scale and the LSAS, SFNE, MAAS, and attentional functions measured by the VACS were computed. A Pearson's correlation coefficient below 0.20 is very weak, between 0.20 to 0.39 is weak, between 0.40 to 0.59 is moderate, between 0.60 to 0.79 is strong, and 0.80 and above is very strong (Evans, 1996). A priori power calculations by G*Power showed that a sample of at least 193 participants was required to detect weak to moderate correlation coefficients ($r = 0.20–0.60$) (alpha = 0.05, power = 0.80). Post hoc power analyses showed that the sample in this study ($N = 502$) had a high statistical power to examine weak to moderate correlations (power = 0.99 to 1.00).

2.4 | Statistical software

CFA was performed using Mplus 8 (Muthén & Muthén, 1998–2017), and SPSS version 23 (IBM Corp.) was used to compute *t* values and Pearson's correlation coefficients. R 4. 0. 2 was used in the calculation of the Cronbach's α and McDonald's ω coefficients.

3 | RESULTS

3.1 | Factorial validity

Table 1 shows the J-SFA scale's items and descriptive statistics for the 574 participants. The model fit indices for the one-factor model, non-correlated two-factor model, and correlated two-factor model were examined by the CFA. The one-factor model was an insufficient fit to the data ($\chi^2 = 471.957$, df = 44, $p < 0.01$, CFI = 0.836, TLI = 0.795, RMSEA = 0.130 (90% [CI] = 0.120–0.141), SRMR = 0.070, and AIC = 17323.02). The factor loadings were all greater than 0.40 and significant. The non-correlated two-factor model provided an insufficient fit to the data ($\chi^2 = 492.180$, df = 44, $p < 0.01$, CFI = 0.828, TLI = 0.785, RMSEA = 0.133 (90% [CI] = .123–.144), SRMR = 0.276, and AIC = 17318.38). The factor loadings were all greater than 0.40 and significant. The correlated two-factor model showed a generally acceptable fit to the data ($\chi^2 = 215.631$, df = 43, $p < 0.01$, CFI = 0.934, TLI = 0.915, RMSEA = 0.084 (90% [CI] = 0.073–0.095), SRMR = 0.039, and AIC = 16971.54). The factor loadings were all greater than 0.40 and significant. In the three models, the correlated two-factor model showed the best fit to the data.

Since the correlated two-factor model showed high interfactor correlations ($r = 0.76$, $p < 0.01$), the presence of a general factor is assumed. To examine whether there is a general factor in addition to the two factors, the model fit indices of the bi-factor model and two-tier hierarchical model with the general factor was calculated. The bi-factor model showed a good fit to the data ($\chi^2 = 99.886$, df = 33, $p < 0.01$, CFI = 0.974, TLI = 0.957, RMSEA = 0.059 (90% [CI] = 0.046–0.073), SRMR = 0.027, and AIC = 16821.87). The factor

TABLE 1 Items of the Japanese version of the self-focused attention scale and descriptive statistics ($N = 574$)

	Items	Mean	*SD*	CITC
When there're others around me, I focus my attention on the following:				
1	How much I feel nervous	1.60	1.15	0.69**
2	Whether my heart is beating fast or not	1.23	1.13	0.65**
3	Whether my social skills are appropriate or not	2.10	1.19	0.69**
4	Whether I am able to express my thoughts	2.11	1.14	0.65**
5	Whether I can control my breathing	1.07	1.20	0.62**
6	How well I can participate in the conversation	2.28	1.21	0.69**
7	Whether I am understanding what others are saying	2.25	1.19	0.62**
8	Whether I am looking nervous or not	1.62	1.30	0.76**
9	Whether I am acting properly	2.51	1.16	0.63**
10	Whether I am behaving nervously	1.58	1.26	0.76**
11	Whether I am blushing, trembling, or sweating	1.87	1.38	0.68**

Note: All items are rated on a five-point Likert-type scale (1 = not at all, 2 = a little, 3 = sometimes, 4 = mostly, and 5 = very much). The instructions were as follows: "Questions below are to ask you where you turn your attention to in social circumstances, in other words, situations where others are around you. Please answer to all of the questions even if you are not sure. Please circle the number that best describes your condition."

Abbreviation: CITC, corrected item-total correlations.

**$p < .01$.

loadings on the general factor and behavior factor were all greater than 0.40 and significant. However, loadings on the arousal factor did not all meet this threshold, specifically items 5 ($p = 0.05$), 8 ($p = 0.80$), 10 ($p = 0.43$), 11 ($p = 0.09$). The two-tier hierarchical model demonstrated a generally acceptive fit to the data ($\chi^2 = 210.617$, df = 42, $p < 0.01$, CFI = 0.935, TLI = 0.915, RMSEA = 0.084 (90% [CI] = 0.073–0.095), SRMR = 0.039, and AIC = 16973.54). The factor loadings were all greater than 0.40 and significant. These findings showed that the bi-factor model provided the best fit to the data. In addition, χ^2 difference testings using the Satorra–Bentler scaled χ^2 showed that the bi-factor model had significantly lower chi-square values than did the other models ($p < 0.01$). The normalized residuals between items 1 and 3 and between items 2 and 9 were significant ($p < 0.05$), but they were not significant among other items. When the sample size is large, the residuals are likely to be significant, and there is no need to modify the model, unless the value of the normalized residuals is extremely high (Ito, 2018). The value of the normalized residuals for items 1 and 3 was 2.174, and that for items 2 and 9 was −2.329, which is not extremely high. Based on these findings, the bi-factor model was accepted (Figure 1). Table 2 shows the fit indices for alternative factorial models.

3.2 | Internal consistency

Cronbach's α and McDonald's ω coefficients for the overall scale and each factor of the J-SFA scale were calculated. High α coefficients were found (overall scale: $\alpha = 0.92$; arousal subscale: $\alpha = 0.89$; behavior subscale: $\alpha = 0.87$). Moreover, the ω coefficients had the same scores as α coefficients (overall scale: $\omega = 0.92$; arousal subscale: $\omega = 0.89$; behavior subscale: $\omega = 0.87$).

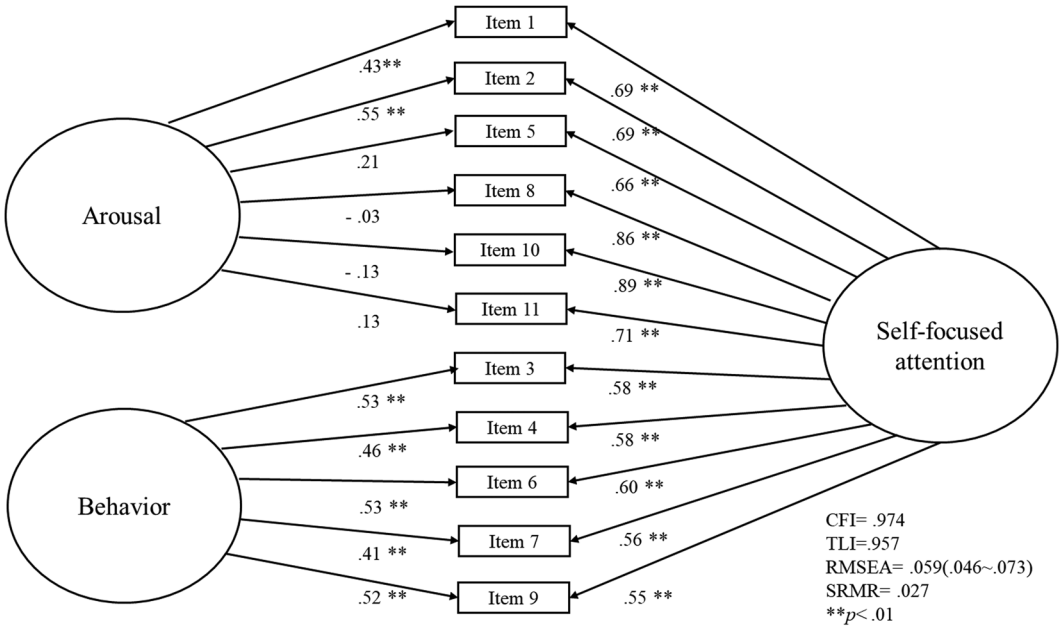

FIGURE 1 The results of the confirmatory factor analysis to evaluate if the Japanese version of the self-focused attention scale has the bi-factor structure ($N = 574$). The coefficients describing the loadings of the arousal and behavior factors are standardized parameter estimates. CFI, comparative fit index; CI, confidence interval; TLI, Tucker-Lewis index; RMSEA, root mean square error of approximation; SRMR, standardized root mean squared residual

TABLE 2 Fit indices for alternative factorial models

Model	χ^2	df	CFI	TLI	RMSEA(90%[CI])	SRMR	AIC
One-factor model	471.957**	44	0.836	0.795	0.130 (0.120–0.141)	0.070	17323.02
Non-correlated two-factor model	492.180**	44	0.828	0.785	0.133 (0.123–0.144)	0.276	17318.38
Correlated two-factor model	215.631**	43	0.934	0.915	0.084 (0.073–0.095)	0.039	16971.54
Bi-factor model	99.886**	33	0.974	0.957	0.059 (0.046–0.073)	0.027	16821.87
Two-tier hierarchical model	210.617**	42	0.935	0.915	0.084 (0.073–0.095)	0.039	16973.54

Abbreviations: AIC, Akaike information criterion; CFI, comparative fit index; CI, confidence interval; TLI, Tucker-Lewis index; RMSEA, root mean square error of approximation; SRMR, standardized root mean squared residual.
**$p < .01$.

3.3 | Convergent validity

The means and standard deviations of the 502 participants' responses to each scale were calculated, and the gender differences for each scale were examined using independent t tests (Table 3). It was shown that female participants had significantly higher SFNE and LSAS's fear scale scores than male participants (SFNE: $t[495] = -3.18$, $p < 0.01$, Cohen's $d = -0.32$ (95% [CI] = −0.51 to −0.12); LSAS's fear scale: $t[495] = -2.08$, $p = 0.04$, $d = -0.21$ (95% [CI] = −0.40 to −0.01]). There were no significant differences between male and female participants on the LSAS's avoidance scale, J-SFA scale, MAAS, and VACS.

TABLE 3 Means and standard deviations of each scale and gender differences

Scales	All (N = 502)		Male (N = 139)		Female (N = 358)		t Values	p Values	Cohen's d
	Mean	*SD*	Mean	*SD*	Mean	*SD*			
J-SFA	20.19	9.76	21.46	9.89	19.73	9.71	$t(495) = 1.78$	0.08	0.18 (95% [CI]: −0.02 to 0.37)
Arousal	8.93	5.96	9.60	6.19	8.68	5.87	$t(495) = 1.55$	0.12	0.15 (95% [CI]: −0.04 to 0.35)
Behavior	11.26	4.72	11.86	4.60	11.05	4.77	$t(495) = 1.72$	0.09	0.17 (95% [CI]: −0.02 to 0.37)
LSAS total	63.16	28.40	59.77	28.50	64.46	28.23	$t(495) = -1.66$	0.10	−0.17 (95% [CI]: −0.36 to 0.03)
Fear	34.28	15.51	31.94	15.41	35.15	15.46	$t(495) = -2.08$	0.04	−0.21 (95% [CI]: −0.40 to −0.01)
Avoidance	28.87	14.86	27.83	15.84	29.31	14.43	$t(495) = -1.00$	0.32	−0.10 (95% [CI]: −0.30 to 0.10)
SFNE	41.58	10.96	39.09	11.04	42.54	10.80	$t(495) = -3.18$	<0.01	−0.32 (95% [CI]: −0.51 to −0.12)
MAAS	54.22	9.82	54.38	11.07	54.21	9.33	$t(218.27) = 0.16$	0.87	0.02 (95% [CI]: −0.18 to 0.21)
VACS									
Selective attention	19.44	5.39	19.50	5.88	19.44	5.17	$t(495) = 0.12$	0.91	0.01 (95% [CI]: −0.18 to 0.21)
Switching attention	19.08	5.14	19.05	5.64	19.13	4.93	$t(495) = -0.15$	0.88	−0.02 (95% [CI]: −0.21 to 0.18)
Divided attention	17.47	5.87	17.00	6.69	17.72	5.48	$t(213.61) = -1.13$	0.26	−0.12 (95% [CI]: −0.32 to 0.07)

Note: Five participants did not indicate gender.

Abbreviations: CI, confidence interval; J-SFA, Japanese version of self-focused attention scale; LSAS, Liebowitz social anxiety scale; SFNE, Short fear of negative evaluation scale; VACS, voluntary attention control scale.

TABLE 4 Correlations between the Japanese-version self-focused attention scale and the other measures ($N = 502$)

Scales	J-SFA arousal	J-SFA behavior	LSAS total	LSAS fear	LSAS avoidance	SFNE	MAAS	VACS selective attention	VACS switching attention	VACS divided attention
J-SFA total	0.93**	89**	0.42**	0.43**	0.36**	0.52**	−0.25**	−0.10*	−0.11*	−0.08
Arousal		0.67**	0.40**	0.40**	0.35**	0.43**	−0.23**	−0.10*	−0.10*	−0.03
Behavior			0.36**	0.38**	0.30**	0.52**	−0.23**	−0.09	−0.12**	−0.13**
LSAS total				0.94**	0.93**	0.42**	−0.28**	−0.30**	−0.24**	−0.25**
Fear					0.75**	0.49**	−0.31**	−0.29**	−0.22**	−0.26**
Avoidance						0.30**	−0.22**	−0.27**	−0.23**	−0.20**
SFNE							−0.21	−0.25**	−0.12**	−0.17**
MAAS								0.34**	0.28**	0.26**
VACS										
Selective attention									0.65**	0.54**
Switching attention										0.74**

Abbreviations: J-SFA, Japanese version of self-focused attention scale; LSAS, Liebowitz social anxiety scale; MAAS, mindful attention awareness scale; SFNE, short fear of negative evaluation scale; VACS, voluntary attention control scale.

*$p < .05$.

**$p < .01$.

The correlation coefficients between the J-SFA scale, LSAS, SFNE, and MAAS were calculated (Table 4). The J-SFA scale showed weak to moderate positive correlations with the LSAS's fear scale, the LSAS's avoidance scale, and the total LSAS ($r = 0.30$ to 0.43, $p < 0.01$). The J-SFA scale showed moderate positive correlations with the SFNE ($r = 0.43$ to 0.52, $p < 0.01$). The J-SFA scale showed weak negative correlations with the MAAS ($r = -0.25$ to -0.23, $p < 0.01$). These statistically significant values remained significant after Bonferroni correction ($p < \alpha/n = 0.05/10 = 0.005$).

3.4 | Discriminant validity

Correlation coefficients between the J-SFA scale and VACS subscales were calculated (Table 4). The J-SFA scale showed very weak negative correlations with the selective attention, switching attention, and divided attention subscales of the VACS ($r = -0.13$ to -0.03). Only the statistical significance of the correlation coefficient between the behavior factor and divided attention remained significant after Bonferroni correction ($p < \alpha/n = 0.05/10 = 0.005$).

4 | DISCUSSION

This study's purpose was to develop a Japanese version of the SFA scale that was originally developed by Bögels et al. (1996), and to examine its reliability and validity. The CFA showed that the bi-factor model's goodness of fit indices were high, and the model was accepted. This suggests that the J-SFA scale has the general factor and the same two-factor structure as in Bögels et al. (1996), as well as factorial validity. Since Cronbach's α coefficients had the same value as McDonald's ω coefficients, tau equivalences were assumed. The J-SFA scale's α coefficients were higher than 0.80, which indicates the J-SFA scale has high internal consistency.

The mean was 8.93 (±5.96) for the arousal factor and 11.26 (±4.72) for the behavior factor. Bögels et al. (1996) investigated undergraduate students in the Netherlands (mean age: 20.1 years) and found that the mean was 4.7 (±4.2) for the arousal factor and 9.0 (±3.9) for the behavior factor. Therefore, this study's participants had relatively higher self-focused attention levels. Since collectivist countries (e.g., Japan, Korea, and Spain) are often found to report significantly higher social anxiety symptoms than individualist countries (e.g., the United States, Australia, and the Netherlands; Heinrichs et al., 2006), this could explain the higher self-focused attention reported by Japanese participants compared to Dutch participants in Bögels et al. (1996). Additionally, both countries had higher scores on the behavior factor than on the arousal factor. However, the score difference between the two factors was greater in the Netherlands than in Japan. Individualistic countries have been shown to view socially withdrawn and reticent behavior more negatively than collectivistic countries (Rapee et al., 2011). This negative evaluation of such behaviors may lead to Dutch participants monitoring their own behaviors in social situations. Therefore, participants in the Netherlands may have shown higher scores on the behavior factor, but lower scores on the arousal factor.

It was also shown that female participants had significantly higher social anxiety and fear of negative evaluation from others than male participants. These findings supported the results of a previous study (Asher et al., 2017) indicating that women had greater social anxiety symptoms than men. However, there were no significant differences between male participants and female participants for self-focused attention and social avoidance behavior. This suggests that these factors did not affect gender differences in social anxiety. Since women have more cost bias (negative cognition) that exacerbates social anxiety than men (Noda et al., 2017), it is considered that cost bias may have affected gender differences in social anxiety.

In line with the hypothesis, correlation analysis found that each of the J-SFA scale's factors had weak to moderate positive correlations with the LSAS and SFNE. Additionally, in line with expectations, weak negative

correlations were also confirmed between each factor of the J-SFA scale and the MAAS. Furthermore, very weak correlations (correlation coefficients <0.20, indicating negligible correlations), were shown between each factor of the J-SFA scale and each factor of the VACS, consistent with the hypothesis that there would be very weak correlations between each factor of the J-SFA scale and selective attention, switching attention, and divided attention. If the correlation coefficient was less than 0.20, we considered that the discriminant validity was supported. Based on the above considerations, it is suggested that this study has provided evidence to support the validity of using the J-SFA scale to measure self-focused attention.

The J-SFA scale's factors had higher correlation coefficients with the SFNE than the LSAS's fear and avoidance scales. Rapee and Heimberg (1997) showed that self-focused attention influences social anxiety and avoidance behavior through fear of negative evaluation from others. These findings suggested that self-focused attention would be more related to fear of negative evaluation by others than social anxiety and avoidance behavior. This study also showed significant or nonsignificant very weak correlations between the J-SFA scale and the VACS' three functions. These results suggest that awareness of internal self-related information in social situations is not related to the ability to focus voluntary attention on a variety of objects.

In this study, it was found that self-focused attention is positively correlated with fear and avoidance behavior in social situations and fear of negative evaluation from others. Self-focused attention is a core factor that maintains SAD, and it exacerbates social anxiety, avoidance behavior, and negative cognition (Clark & Wells, 1995; Hofmann & Otto, 2008; Rapee & Heimberg, 1997). The amelioration of self-focused attention helps to prevent and treat SAD (Bögels, 2006; Vriends et al., 2017). Therefore, it is important to improve self-focused attention as a treatment for SAD.

The J-SFA scale makes it possible to accurately assess the degree of self-focused attention of Japanese individuals. Additionally, it can screen highly socially anxious individuals who need interventions designed to address self-focused attention. Consequently, the J-SFA scale is considered an index for assessing the effectiveness of such interventions. Furthermore, the SFA scale's responsiveness has been validated and the effectiveness of interventions using this scale has been examined (Bögels et al., 2006; Bögels, 2006). Thus, the J-SFA scale is expected to contribute to the development of interventions targeting self-focused attention and promote effectiveness studies of such programs.

In addition, the self-focused attention directed to one's arousal has been shown to influence fear of blushing (Bögels et al., 1996). Therefore, it would be important to assess the arousal factor in patients with fear of blushing. On the other hand, the self-focused attention directed to one's behavior may have a positive association with behavioral maintaining factors for social anxiety. However, the mechanism by which the behavior factor affects social anxiety symptoms has not been fully clarified. In the future, it is necessary to clarify the mechanism and to examine the importance of assessing the behavior factor.

Several limitations of this study must be considered. First, further investigations into the J-SFA scale's reliability and validity are necessary. In this study, the participants were university students. In the future, it will be necessary to verify the scale's reliability and validity with SAD patients and clarify the possibility of applying it to clinical groups. Second, it is necessary to examine the J-SFA scale's responsiveness. The SFA scale's responsiveness has been verified (Bögels et al., 2006; Bögels, 2006), but as the J-SFA scale's responsiveness has not been clarified, it is necessary to examine this. Additionally, it is necessary to verify whether social anxiety symptoms are improved by reducing self-focused attention, as measured by the J-SFA scale. Third, it is desirable to examine whether there are significant differences in self-focused attention between collectivistic and individualistic countries, as the Japanese participants in this study had higher levels of self-focused attention than the Dutch participants in Bögels et al. (1996). Cultural norms may have influenced levels self-focused attention, or the difference in scores may have occurred due to when the surveys were conducted. Thus, it is necessary to conduct cross-cultural studies that compare self-focused attention in collectivistic countries with individualistic countries.

ACKNOWLEDGMENT

This study was supported by a Grant-in-Aid for Scientific Research (C) KAKENHI (grant number 17K04463).

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

PEER REVIEW

The peer review history for this article is available at https://publons.com/publon/10.1002/jclp.23133

DATA AVAILABILITY STATEMENT

The J-SFA scale is available upon request to the first author. Detailed data are alsoavailable from the corresponding author upon reasonable request.

ETHICS STATEMENT

This study was approved by the ethics committee of the first author's affiliated university (approval number: 29029).

ORCID

Shota Noda https://orcid.org/0000-0001-7376-7630

REFERENCES

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th edn.). American Psychiatric Association.

Asakura, S., Inoue, S., Sasaki, F., Sasaki, Y., Kitagawa, N., Inoue, T., Denda, K., Ito, M., Matsubara, Y., & Koyama, T. (2002). Reliability and validity of the Japanese version of the Liebowitz social anxiety scale. *Japanese Journal of Psychiatric Medicine*, *44*, 1077–1084.

Asher, M., Asnaani, A., & Aerka (2017). Gender differences in social anxiety disorder: AA review. *Clinical Psychology Review*, *56*, 1–12.

Bijl, R. V., Ravelli, A., & van Zessen, G. (1998). Prevalence of psychiatric disorder in the general population: Results of the Netherlands Mental Health Survey and Incidence Study (NEMESIS). *Social Psychiatry and Psychiatric Epidemiology*, *33*, 587–595.

Bögels, S. M. (2006). Task concentration training versus applied relaxation, in combination with cognitive therapy, for social phobia patients with fear of blushing, trembling, and sweating. *Behaviour Research and Therapy*, *44*, 1199–1210.

Bögels, S. M., Alberts, M., & de Jong, P. J. (1996). Self-consciousness, self-focused attention, blushing propensity, and fear of blushing. *Personality and Individual Differences*, *21*, 573–581.

Bögels, S. M., Mulkens, S., & de Jong, P. J. (1997). Task concentration training and fear of blushing. *Clinical Psychology and Psychotherapy*, *4*, 251–258.

Bögels, S. M., Sijbers, G. F. V. M., & Voncken, M. (2006). Mindfulness and task concentration training for social phobia: A pilot study. *Journal of Cognitive Psychotherapy*, *20*, 33–44.

Bonett, D. G. (2002). Sample size requirements for testing and estimating coefficient alpha. *Journal of Educational and Behavioral Statistics*, *27*, 235–240.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, *84*, 822–848.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen, & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Sage.

Cho, M. J., Seong, S. J., Park, J. E., Chung, I. W., Lee, Y. M., Bae, A., Ahn, J. H., Lee, D. W., Bae, J. N., Cho, S. J., Park, J. I., Son, J., Chang, S. M., Hahm, B. J., Lee, J. Y., Sohn, J. H., Kim, J. S., & Hong, J. P. (2015). Prevalence and correlates of DSM-IV mental disorders in South Korean adults: The Korean epidemiologic catchment area study 2011. *Korean Neuropsychiatric Association*, *12*, 164–170.

Clark, D. M., & Wells, A. (1995). A cognitive model of social phobia. In R. G. Heimberg, M. R. Liebowitz, D. A. Hope, & F. R. Schneier (Eds.), *Social phobia: Diagnosis, assessment, and treatment* (pp. 69–93). Guilford Press.

Comrey, A. L., & Lee, H. B. (1992). *A first course in factor analysis* (Second Edn). Lawrence Erlbaum.

dell'Olio, L., Ibeas, A., Oña, J., & Oña, R. (2018). *Public transportation quality of service: Factors, models, and applications*. Elsevier.

Desnoyers, A. J., Kocovski, N. L., Fleming, J. E., & Antony, M. M. (2017). Self-focused attention and safety behaviors across group therapies for social disorder. *Anxiety, Stress, & Coping*, *30*, 441–455.

Evans, J. D. (1996). *Straightforward statistics for the behavioral sciences*. Brooks/Cole Publishing.

Fujino, M., Kajimura, S., & Nomura, M. (2015). Development and validation of the Japanese version of the mindful attention awareness scale using item response theory analysis. *The Japanese Journal of Personality*, *24*, 61–76.

Fukuda, K., & Kobayashi, S. (1973). A study on a self-rating depression scale. *Psychiatria et Neurologia Japonica*, *75*, 673–679.

Graham, J. M. (2006). Congeneric and (essentially) tau-equivalent estates of score reliability: what they are and how to use them. *Educational and Psychological Measurement*, *66*, 930–944.

Heinrichs, N., Rapee, R. M., Alden, L. A., Bögels, S. M., Hofmann, S. G., Ja Oh, K., & Sakano, Y. (2006). Cultural differences in perceived social norms and social anxiety. *Behaviour Research and Therapy*, *44*, 1187–1197.

Hofmann, S. G., & Otto, M. W. (2008). *Cognitive behavioral therapy for social anxiety disorder*. Routledge.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*, 1–55.

Imai, S., Kumano, H., Imai, C., & Nedate, K. (2015). Subjective aspects of voluntary attention control and its relation to depression and anxiety. *Japanese Journal of Cognitive Therapy*, *8*, 85–95.

Ingram, R. (1990). Self-focused attention in clinical disorders: Review and conceptual models. *Psychological Bulletin*, *107*, 156–176.

Ishikawa, R., Sasaki, K., & Hukui, I. (1992). Standardization of Japanese version of FNE and SADS. *Japanese Journal of Behavior Therapy*, *18*, 10–17.

Ito, H. (2018). Basics of structural equation modeling. In T. Murakami, & R. Yukihiro, D. (Eds.), *Structural equation modeling for psychology and social science* (pp. 1–32). Nakanishiya Publishing.

Kanai, Y., Sasagawa, S., Chen, J., Suzuki, S., Shimada, & Sakano, Y. (2004). Development and validation of the Japanese version of social phobia scale and social interaction anxiety scale. *Japanese Journal of Psychosomatic Medicine*, *44*, 841–850.

Leary, M. R. (1983). A brief version of the fear of negative evaluation scale. *Personality and Social Psychology Bulletin*, *9*, 371–375.

Liebowitz, M. R. (1987). Social phobia. *Modern Problems of Pharmacopsychiatry*, *22*, 141–173.

Mansell, W., Clark, D. M., & Ehlers, A. (2003). Internal versus external attention in social anxiety: An investigation using a novel paradigm. *Behaviour Research and Therapy*, *41*, 555–5572.

McNeish, D. (2018). Thanks coefficient alpha, we'll take it from here. *Psychological Methods*, *23*, 412–433.

Melling, T. M. B., & Alden, L. E. (2000). Cognitive processes in social anxiety: The effects of self-focus, rumination and anticipatory processing. *Behaviour Research and Therapy*, *38*, 243–257.

Mokkink, L. B., Terwee, C. B., Patrick, D. L., Alonso, J., Stratford, P. W., Knol, D. L., Bouter, L. M., & Vet, H. C. (2012). *COSMIN checklist manual*. University Medical Center. Retrieved from http://fac.ksu.edu.sa/sites/default/files/cosmin_checklist_manual_v9.pdf

Mulkens, S., Bögels, S. M., de Jong, P. J., & Louwers, J. (2001). Fear of blushing: Effects of task concentration training versus exposure in vivo on fear and physiology. *Anxiety Disorders*, *15*, 413–432.

Muthén, L. K., & Muthén, B. O. *Mplus user's guide* (Eighth Edn). Muthén & Muthén; 1998–2017.

Nihei, M., Arai, H., Maeda, K., Aoki, S., Tsuchiyagaito, A., Iwano, A., Tomioka, N., Okamura, H., Mihara, K., Shirotsuki, K., Horiuchi, S., & Sakano, Y. (2018). Reassessment of factor structure, reliability, and validity of the short fear of negative evaluation scale for the Japanese. *Anxiety Disorder Research*, *10*, 54–63.

Noda, S., Osawa, K., & Shirotsuki, K. (2017). The development of the speech cost/probability bias scale. *Japanese Journal of Cognitive Therapy*, *10*, 219–231.

Okajima, I., Kanai, Y., Chen, J., & Sakano, Y. (2007). Factor structure of the Japanese version of Liebowitz social anxiety scale (LSAS): A confirmatory factor analysis. *Japanese Journal of Clinical Psychiatry*, *49*, 829–835.

Rapee, R. M., & Heimberg, R. G. (1997). A cognitive-behavioral model of Anxiety in social phobia. *Behaviour Research and Therapy*, *35*, 741–756.

Rapee, R. M., Wang, J., Liu, X., Hofman, S. G., Chen, J., Ya Oh, K., Bögels, S. M., Arman, S., Heinrichs, N., & Alden, L. E. (2011). Perceived impact of socially anxious behaviors on individuals' lives in Western and East Asian countries. *Behavior Therapy*, *42*, 485–492.

Sasagawa, S., Kanai, Y., Muranaka, Y., Suzuki, S., Shimada, H., & Sakano, Y. (2004). Development of a short fear of negative evaluation scale for Japanese using item response theory. *Japanese Journal of Behavior Therapy*, *30*, 87–98.

Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online*, *8*, 23–74.

Shimizu, H., & Imae, K. (1981). Development of the Japanese version of state-trait anxiety inventory. *Japanese Journal of Educational Psychology*, *29*, 348–353.

Stein, D. J., Lim, C. C. W., Roest, A. M., de Jonge, P., Aguilar-Gaxiola, S., Al-Hamzawa, A., Alonso, J., Benjet, C., Bromet, E. J., Bruffaerts, R., de Girolamo, G., Florescu, S., Gureje, O., Haro, J. M., Harris, M. G., He, Y., Hinkov, H., Horiguchi, I., Hu, C., … Scott, K. M., WHO world Mental Health Survey Collaborators. (2017). The cross-national epidemiology of social anxiety disorder: Data from the World Mental Health Survey Initiative. *BMC Medicine*, *15*, 143.

Tomita, N., Nishi, Y., Imai, S., & Kumano, H. (2016). The impact of trait anxiety and depression on attentional control function and interpretation bias in high social anxiety individuals. *Japanese Journal of Cognitive Therapy*, *9*, 44–54.

Tomita, N., Shima, T., & Kumano, H. (2018). Developing the mental perspective scale for social anxiety disorder. *Japanese Journal of Psychosomatic Medicine*, *58*, 65–73.

Turner, S. M., Beidel, D. C., Dancu, C. V., & Stanley, M. A. (1989). An empirically derived inventory to measure social fears and anxiety: The social phobia and anxiety inventory. *Psychological Assessment*, *1*, 35–20.

Úbeda-Gómez, J., León-Palacios, M. G., Escudero-Pérez, S., Barros-Albrrán, M. D., López-Jiménez, A. M., & Perona-Garcelán, S. (2015). Relationship between self-focused attention, mindfulness and distress in individuals with auditory verbal hallucinations. *Cognitive neuropsychiatry*, *20*, 482–488.

Voncken, M. J., Dijl, C., de Jong, P. J., & Roelofs, J. (2010). Not self-focused attention but negative beliefs affect poor social performance in social anxiety: An investigation of pathways in the social anxiety-social rejection relationship. *Behaviour Research and Therapy*, *48*, 984–991.

Vriends, N., Meral, Y., Bargas-Avila, J. A., Stadler, C., & Bögels, S. M. (2017). How do I look? Self-focused attention during a video chat of woman with social anxiety(disorder). *Behaviour Research and Therapy*, *92*, 77–86.

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

Woody, S. R. (1996). Effects of focus of attention on anxiety levels and social performance of individuals with social phobia. *Journal of Abnormal Psychology*, *105*, 61–69.

Zeller, R. A. (2005). Measurement error, issues and solutions. In K. Kempf-Leonard (Ed.), *Encyclopedia of social measurement* (pp. 665–676). Elsevier.

How to cite this article: Noda, S., Okawa, S., Shirotsuki, K., Sasagawa, S., & Bögels, S. M. (2021). The Japanese self-focused attention scale: Factor structure, internal consistency, convergent, and discriminant validity. *Journal of Clinical Psychology*, 77, 2011–2026. https://doi.org/10.1002/jclp.23133