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PSYCHOMETRIC PROPERTIES OF THE GREEK TRANSLATION OF THE SOCIAL PHOBIA INVENTORY

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***Abstract*:** In the current study we examined the psychometric properties of the Greek adaptation of the Social Phobic Inventory (SoPhI) (Moore & Gee, 2003). The questionnaire is a 21-item self-report measure that assesses social anxiety based on the criteria of the DSM-IV-TR and DSM-5. A total of 221 university students volunteered to complete the SoPhI. Exploratory Principal Components Analysis indicated the presence of a single factor explaining 38% of the variance. The internal reliability was strong (α = .92). These results provide evidence for the utility of this instrument to assess social anxiety in countries where Greek is spoken as well as for research involving cross-cultural comparisons. Future directions in research using this instrument are discussed.

***Key words*:** Cross-Cultural comparison, Measurement, Social anxiety

INTRODUCTION

Social phobia is a complex mental health issue that is comprised of several different elements (DSM-IV-TR, 2004; DSM-5, 2013). In more simple terms, social phobia can be described as an experience of stress, discomfort and fear related to social or performance situations (Watson & Friend, 1969). They reported that these feelings often lead to a deliberate avoidance of such situations and a fear of being negatively evaluated by others. Beidel, Turner, and Dancu (1985) suggested that people with social phobia and social anxiety make negative cognitive interpretations in interpersonal circumstances; blame themselves rather than the circumstances for any perceived deficiencies in such situations which then contribute to increased heart-rate and elevated blood pressure. Epidemiological studies (e.g., Magee, Eaton,

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Wittchen, McGonagle, & Kessler, 1996; Schneier, Johnson, Hornig, Liebowitz, & Weissman, 1992) have found that in 19-29% of identified cases, social phobia is the sole diagnosis. However, by extrapolation, this figure suggests that 70-80% of people experience comorbidity with at least one other mental disorder (Lecrubier, 1998). Comorbidity with other disorders exacerbates the symptoms and, as Ballenger, Davidson, Lecrubier, Nutt, Bobes, et al. (1998); Davidson, Potts, Richichi, Krishnan, Ford, et al. (1991) and Lépine and Lellouch (1995) reported, such co-morbidity leads to a higher than average rate of suicide. Clearly it is important to be able to identify, and then treat, people with high levels of social anxiety or social phobia to help them function better in society and to reduce such risk.

Although anxiety disorders are generally shown to affect females more than males (Turk, Heimberg, Orsillo, Holt, Gitow, et al., 1998) this difference is equivocal with respect to social phobia. Several epidemiological studies have reported a higher prevalence rate for social phobia in women. For instance, Kessler, Stein, and Berglund (1998) reported a prevalence of 15.5% in women compared to 11.1% in men in their household study in the United States and Weissman, Bland, Canino, Greenwald, Lee, et al. (1996) in their transcultural research also found higher prevalence rates of social anxiety in women than men in Canada, Puerto Rico, and the United States. In other studies involving the general population, the incidence of social phobia for females is sometimes only slightly higher than for males (e.g., Myers, Weissman, & Tischler, 1984) while others (e.g., Amies, Gelder, & Shaw, 1983) have reported no gender differences. Gender differences seem less prevalent when clinical studies are taken into consideration (Montejo & Liebowitz, 1994; Turk et al., 1998).

Several scales have been developed to assess levels of social anxiety from shyness to social phobia. Among these are the Social Avoidance and Distress Scale (SAD) (Watson & Friend, 1969), the Social Phobia Anxiety Inventory (SPAI) (Turner, Beidel, Dancu, & Stanley, 1989), the Liebowitz Social Anxiety Scale (LSAS) (Liebowitz, 1987), the Social Anxiety Scale for Adolescents (SAS-A) (La Greca & López, 1998), the Social Interaction Self-Statement Test (SISST) (Glass, Merluzzi, Biever, & Larsen, 1982), the Davidson Brief Social Phobia Scale (BSPS) (Davidson et al., 1991), the Interaction Anxiousness Scale (IAS) and the Audience Anxiousness Scale (AAS) (Leary, 1983), all of which are self-administered instruments with reasonable to good levels of reliability and validity.

Related scales such as The Social Interaction Anxiety Scale (SIAS) of Mattick and Clarke (1998) translated by Vassilopoulous and Banerjee (2010) and the Hellenic Fear Survey Schedule (Mellon, 2000) are available in the Greek language but neither of these assess social anxiety/phobia per se. One further social anxiety-specific scale, the Social Phobic Inventory (SoPhI) (Moore & Gee, 2003) is a 21-item questionnaire

designed to assess social anxiety based on the criteria of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR, American Psychiatric Association, 2000).

Moore and Gee (2003) reported on two studies using the SoPhI: one a clinical sample of 165 people who had been previously diagnosed with social phobia and were attending a support group for people with this problem and the second with a sample of 104 university students. In both cases, analyses revealed one highly reliable factor. They also compared data from the two samples and found a significant difference on levels of social anxiety: clinical group, $M = 80.73$, $SD = 16.70$ vs. university students, $M = 49.63$, $SD = 14.65$. Moore and Gee also suggested that 10% of their university student sample could be considered to be experiencing clinical levels of social phobia. A similar mean score among school students aged 14-17 years was reported by Bermejo, Garcia-Lopez, Hidalgo, and Moore (2011) in their Spanish translation of the SoPhI ($M = 47.75$; $SD = 14.36$). We suggest that this instrument has utility as a brief, inexpensive to administer and informative screening instrument that may distinguish among people on their level of social anxiety.

A review of the literature of psychometric tools in Greece, as given by Stalikas, Triliva, and Roussi (Σταλίκας, Τριλίβα, & Ρούσση, 2012), a publication of validated psychometric tools in the Greek language, did not identify any measure assessing social anxiety per se. Therefore, it was the aim of this study to assess the reliability, validity and psychometric properties of a Greek translation of the Social Phobic Inventory (SoPhI) and to compare the current data to the published norms. Such a validated instrument would be an important resource for use in both clinical and non-clinical populations as a screening instrument and to evaluate treatment effects. In addition, and in an attempt to contribute to the existing research which is equivocal on gender differences for social anxiety, we tested for gender differences on scores on the Social Phobic Inventory.

METHOD

Translation and pilot study

The recommendations of Beaton, Bombardier, Guillemin, and Ferraz (2000) and Stalikas et al. (2012) were followed in translating the SoPhI into Greek using a forward and backward translation method. The first step included the translation of the English version of the SoPhI into Greek by the first author and then the second author back-translated the Greek version to English. The two professionals discussed any possible discrepancies, evaluated them and produced a penultimate version of the scale in Greek.

The translated items were administered to a convenience sample of 33 undergraduate and graduate students (14 males, 19 females, M = 21.1 years, SD = 2.31) to evaluate face validity and receive feedback on the clarity of the questions. No major changes were made after this process.

Participants

Two hundred and twenty one Greek-Cypriot university students (62 males) with a mean age 24.82 years (SD = 4.97) agreed to participate in the current study.

Instruments

The Social Phobic Inventory (SoPhI; Moore & Gee, 2003) is a 21-item inventory answered on a five-point Likert-type scale ranging from 1 = Never to 5 = Mostly. Moore and Gee (2003) reported a uni-factorial structure with strong internal consistency reliability (Cronbach's α = .93). Bermejo et al. (2011) confirmed the unifactorial structure of the SoPhI-S (Spanish translation) with strong internal reliability (Cronbach's α = .93) and they also reported a six-month test-retest correlation of r = .70 in a sample of 192 adolescents. The Greek Version (see above) was completed by all participants.

Procedure

Participants were recruited by an email invitation sent to the student body of a small private university in Cyprus. The email explained that the aim of the study was to assess the properties of the Greek translation of an anxiety scale. Those persons interested were requested to access the scale via an online website where it was completed anonymously. Participants were asked also to provide their age and gender. No incentives or compensation were offered to participants.

RESULTS

The data were analysed using the Statistical Package for the Social Sciences (SPSS; Version 19). The correlation matrix revealed that each of the 21 items correlated at least .3 or above with a minimum of one other item (Tabachnick & Fidell, 2007). In order to explore the structure of the SoPhI-G (the Greek version) in a different cultural context, a Principal Components Analysis (PCA) was conducted on the data of the Greek version. The Kaiser-Myer-Olkin measure of Sampling Adequacy at .88 and Bartlett's

Table 1. Factor loadings and descriptive statistics of the Greek version of the SoPhI

Items	Social Anxiety
Ο φόβος μου για τις κοινωνικές καταστάσεις με αγχώνει My fear of social situations distresses me	.74
Υπομένω μέσα σε κοινωνικές καταστάσεις ή εμφανίσεις έχοντας έντονο άγχος I endure social or performance situations with anxiety	.73
Φοβάμαι ότι ίσως κάνω κάτι και θα ντροπιαστώ I fear I may do something to humiliate myself in front of others	.71
Νιώθω αγχωμένος και φοβισμένος όταν Εισέρχομαι σ' ένα δωμάτιο γεμάτο ανθρώπους I feel anxious or fearful when entering a room full of people	.71
Τα επίπεδα άγχους μου επηρεάζουν τις σχέσεις μου My level of anxiety interferes with my relationships	.71
Αγχώνομαι όταν κάνω πράγματα και με βλέπουν άλλοι άνθρωποι I get anxious doing things when people are watching	.70
Φοβάμαι ότι ίσως κάνω κάτι που θα με ρεζιλέψει στα μάτια των άλλων I fear I may do something to embarrass my self	.69
Τα επίπεδα άγχους μου επηρεάζουν τις κοινωνικές μου δραστηριότητες My level of anxiety interferes with my social activities	.69
Αναγνωρίζω ότι ο φόβος μου για τις κοινωνικές καταστάσεις είναι υπερβολικός ή παράλογος I recognize that my fear of social situations is excessive and unreasonable	.65
Αποφεύγω τις κοινωνικές καταστάσεις ή εμφανίσεις I avoid fearful social or performance situations	.64
Το άγχος μου για τις κοινωνικές καταστάσεις επηρεάζει την εργασιακή/ακαδημαϊκή λειτουργία μου My anxiety in social situations interferes with my work study functioning	.64
Νιώθω φοβισμένος/η I feel fearful	.61
Νιώθω φοβισμένος και αγχωμένος όταν συστήνομαι σε ομάδες ατόμων. I feel fearful and anxious when introducing myself to groups	.61
Νιώθω φοβισμένος και αγχωμένος όταν τρώω μπροστά σε άλλους I feel fearful and anxious when eating in front of others	.59
Νιώθω φοβισμένος και αγχωμένος όταν μιλώ με άλλα άτομα I feel anxious or fearful when talking to people	.57
Νιώθω φοβισμένος και αγχωμένος όταν φορώ εντυπωσιακά ρούχα I feel fearful and anxious when wearing striking clothes	.56
Νιώθω φοβισμένος και αγχωμένος όταν συναντώ αγνώστους I feel fearful and anxious when meeting with strangers	.54
Νιώθω φοβισμένος και αγχωμένος όταν κάνω μια ομιλία I feel fearful and anxious when giving a speech	.47
Νιώθω φοβισμένος και αγχωμένος όταν γράφω μπροστά σε άλλους I feel fearful and anxious when writing in front of others	.45
Νιώθω φοβισμένος και αγχωμένος όταν μιλώ στο τηλέφωνο I feel fearful and anxious when speaking on the telephone	.44
Νιώθω φοβισμένος και αγχωμένος όταν διακόπτω μια συνάντηση I feel fearful and anxious when interrupting a meeting	.41
Eigen value	8.08
Percent of Variance Explained	38.5%
Mean	49.41
SD	13.56
Cronbach's alpha	.92
Guttman's split-half coefficient	.74

Test of Sphericity, χ^2 (210) = 2498.23, $p < .001$, both indicated the factorability of the correlation matrix (Hair et al., 1995; Tabachnik & Fidell, 2007). The initial extraction revealed three factors with eigen values greater than unity while Cattell's Scree Plot suggested a one- or possibly two-factor solution. Neither the three- nor the two-factor solutions revealed simple structure as several items cross-loaded onto multiple factors. A uni-factorial solution revealed that all 21 items loaded onto the one factor with loadings > 0.4. This factor had an eigen value of 8.08 and explained 38.5% of the variance.

The internal consistency of the 21-item SoPhI-G was strong (Cronbach's $\alpha = .92$, Guttman's Split Half Coefficient = .74). The factor structure, factor loadings, eigen values, per cent of explained variance and descriptive statistics are presented in Table 1.

As several studies have reported contradictory results concerning gender differences, an independent samples t-test was conducted on the current data and revealed that females scored significantly higher on Social Phobia than did males (Table 2).

Table 2. Scores on the SoPhI by gender

Gender	*n*	*M*	*SD*	*t*(220)	*p*	95% CI
Males	62	46.37	13.77	2.09	< .05	[-.26, -8.20]
Females	159	50.60	13.33			

DISCUSSION

When a scale assessing a specific construct is absent in a targeted cultural and language context, Knauss, Paxton, and Alsaker (2009) observed that it is of great importance that any subsequent translation into that language is assessed for appropriateness. In the current study, the Social Phobic Inventory (SoPhI; Moore & Gee, 2003) was translated into Greek and its factor structure and reliability in a sample of Greek-Cypriot college students was examined. Results confirmed the unifactorial structure of the original scale. The factor explained a substantial amount of variance in the current data, and yielded high internal reliability using both Cronbach's alpha and Guttman's split half co-efficient. Both Cronbach's alpha and the overall Mean score on the SoPhI-G are in line with the figures reported by Moore and Gee (2003) and Bermejo et al. (2011) in non-clinical samples.

As the literature is equivocal on whether gender differences prevail with respect to levels of social phobia, we conducted an independent samples t-test and found that females in the current study scored higher than males. While this result from a general

population sample supports the findings of Turk et al. (1998) and Weissman et al. (1996), it should be noted that the confidence limits for a mean difference in the population are quite broad. Moreover, some authors (e.g., Weiller, Bisserbé, Boyer, Lepine, & Lecrubier, 1996) noted that gender differences, where they do occur, may actually be an artefact of presentation in that females may be more likely to report or acknowledge their symptoms.

In sum, the current study provides support for the construct validity and internal reliability of the Greek version of the SoPhI-G. While the instrument is not diagnostic, the results suggest the suitability of this instrument to assess social anxiety in countries where Greek is spoken as well as for implementation in cross-cultural comparisons. Future research should also assess the sensitivity of the Greek version of the questionnaire in a clinical sample. We suggest that the SoPhI-G could be suitable to measure the effectiveness of intervention programs targeting social anxiety using a pre-post design. A study confirming its sensitivity to measure treatment effects in the clinical setting is required.

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