

Psychometric Properties of Revised Social Anxiety Scale in Arab Cultures

Revize Sosyal Anksiyete Ölçeğinin Arap Toplumlarındaki Psikometrik Özellikleri

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ABSTRACT

Objective: This multi-study report aimed to develop and validate an updated version of Social Anxiety Scale (Revised Social Anxiety Scale) in alignment with DSM-5-TR and ICD-11 diagnostic criteria, based on Heimberg's cognitive-behavioral model. **Method:** Two independent studies were conducted. In Study 1, exploratory factor analysis (EFA) was applied to a sample of 314 adults from Syria and Oman to identify the factorial structure of a revised 43-item scale. In Study 2, confirmatory factor analysis (CFA) was conducted on a separate sample of 345 participants. **Results:** EFA revealed a five-factor structure: (1) social situation anxiety, (2) difficulty interacting with strangers, (3) performance anxiety, (4) fear of criticism, and (5) physical symptoms. CFA confirmed the five-factor structure with excellent model fit indices (CFI = 0.961, RMSEA = 0.050). Measurement invariance across cultures (Syrian vs. Omani) and genders was established. The scale shows high internal consistency ($\alpha = .96$) and strong valid criterion with established measures (SAQ-A30, SAD-D-10). Only one significant gender difference was found: the fear of negative evaluation was slightly higher in males. **Conclusion:** Overall, the scale demonstrates robust psychometric properties and cultural sensitivity, offering a reliable tool for clinical and research assessment of social anxiety in Arab populations. The scale further demonstrates potential clinical utility as a preliminary screening tool to enhance early diagnosis and guide culturally sensitive treatment planning. **Keywords:** Social anxiety, factor analysis, psychometric properties, reliability, validity

ÖZ

Amaç: Bu çalışma, Heimberg'in bilişsel-davranışsal modeline dayalı olarak, DSM-5-TR ve ICD-11 tanı kriterlerine uyumlu bir Sosyal Anksiyete Ölçeği güncellenmiş versiyonunu (Revize Sosyal Anksiyete Ölçeği) geliştirmeyi ve doğrulamayı amaçlamıştır. **Yöntem:** Bu çalışma bağlamında, iki bağımsız çalışma gerçekleştirilmiştir. Çalışma 1'de, revize edilmiş 43 maddelik ölçeğin faktöriyel yapısını belirlemek üzere Suriye ve Umman'dan 314 yetişkin örnekleme açılımlı faktör analizi (AFA) uygulanmıştır. Çalışma 2'de, ayrı bir 345 katılımcı örneğinde doğrulayıcı faktör analizi (DFA) gerçekleştirilmiştir. **Bulgular:** AFA, beş faktörlü bir yapı ortaya koymuştur: (1) sosyal durum anksiyetesi, (2) yabancılarla etkileşim zorluğu, (3) performans anksiyetesi, (4) eleştiri korkusu ve (5) fiziksel belirtiler. Çalışma 2'de DFA ile beş faktörlü yapı, mükemmel model uyum indeksleri ile doğrulanmıştır (CFI = 0,961, RMSEA = 0,050). Kültürler (Suriye, Umman) ve cinsiyetler arası ölçüm değişmezliği kurulmuştur. Ölçek, yüksek iç tutarlılık ($\alpha = .96$) ve yerleşik ölçümlerle (SAQ-A30, SAD-D-10) güçlü kriter geçerliği göstermektedir. Yalnızca bir anlamlı cinsiyet farkı bulunmuştur: negatif değerlendirme korkusu erkeklerde hafifçe daha yüksektir. **Sonuç:** Genel olarak, ölçek sağlam psikometrik özellikler ve kültürel duyarlılık sergilemekte olup, Arap popülasyonlarında sosyal anksiyete değerlendirmesi için klinik ve araştırma amaçlı güvenilir bir araç sunmaktadır. Ölçek ayrıca, erken tanılamayı güçlendirmek ve kültürel olarak duyarlı tedavi planlamasını yönlendirmek üzere ön tarama aracı olarak potansiyel klinik fayda göstermektedir. **Anahtar sözcükler:** Sosyal anksiyete, faktör analizi, psikometrik özellikler, güvenilirlik, geçerlilik

Introduction

Social anxiety is a relatively common mental health disorder compared to other anxiety disorders. According to the Diagnostic and Statistical Manual of Mental Disorders 5th edition (DSM-5), the annual prevalence of social anxiety in the United States is approximately 7% among both children and adults, with a lifetime prevalence ranging from 8% to 12% (APA 2013). Research also indicates that women are more likely than men to develop social anxiety disorder, with a lifetime prevalence of 13.5% for women versus 10.9% for men, and a 12-month prevalence of 8% for women versus 5.8% for men (Asher and Aderka 2018). In the United States the prevalence is 6.1% for males and 8% for females (NIMH 2025).

According to a survey conducted in Europe near the close of the twentieth century, the prevalence rates for males and females varied from 2.1% in France to 5.9% in the Netherlands and from 4.5% in Iceland to 9.7% in the Netherlands, respectively (Lecrubier et al. 2000). Prevalence rates were significantly higher in Oman than in other countries, according to a study conducted Ambusaidi et al. (2022) using the Liebowitz Social Anxiety Scale

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(LSAS) on a sample of 1,019 members of the general population. The rates were 55.8% for females and 44.2% for males. According to the same study, this rate is far higher, especially when compared to other Gulf nations (11.7% using the LSAS, 16.3% using the SPIN). These high rates call the study's methodology into question. Using a lower limit (Hajuri et al. 2020) of $SPIN \geq 20$, the prevalence rate was 16.4% with a 95% CI of 12.5-20.2% in a study of health sciences students in Mettu, southwest Ethiopia. Nevertheless, the importance of creating new measures or modifying recurrent ones to fit the cultural context has been implicitly or explicitly highlighted in various studies on social anxiety (La Greca and Lopez 1998, Garcia-Lopez et al. 2010, Mahdi 2014, Al-Riggad 2017). In addition to the National Institute for Health and Care clinical guidelines that outline methods of assessment and treatment (NICE 2013), the most commonly used guidelines for diagnosing social anxiety are the DSM-5-TR criteria (APA 2022) and the World Health Organization ICD-11 criteria (WHO 2019).

Social anxiety disorder, also referred to as social phobia, is marked by a pervasive fear of being judged or scrutinized in social settings. Individuals often avoid such situations or endure them with intense discomfort, driven by anticipatory anxiety and fear of embarrassment. The disorder is typified by a dread of public speaking or social contact. It is frequently associated with irrational thoughts and assessments of oneself and the circumstance, dread of embarrassment, humiliation, or mockery, and sympathetic activation exhibited by bodily sensations (such as blushing or perspiration). The defining characteristic is avoiding social settings or enduring them with great difficulty (APA 2013, WHO 2019). According to the DSM-5-TR criteria (APA 2022), symptoms usually last six months or longer and seriously impair social or professional performance. Medications, illnesses, or other mental illnesses must be ruled out. Anxiety restricted to speaking or performing in front of other people is referred to as "performance-only" anxiety. The ICD-11 (WHO 2019) takes a more flexible approach, with a clinical description that focuses on functional impact and duration. This simplifies its application across cultural boundaries, different from the DSM-5-TR, which depends on exact diagnostic criteria (APA 2022). The Heimberg model (Morrison and Heimberg 2013), which emphasizes psychological processes such as self-focus, emotion regulation, protective behaviors, and post-event processing, is a crucial cognitive model for understanding future-oriented social anxiety. The Heimberg model highlights key psychological mechanisms involved in social anxiety, such as the tendency to focus excessively on oneself during social interactions, engage in protective behaviors, and struggle with regulating emotional responses, particularly following stressful events. According to Heimberg's cognitive-behavioral framework, individuals with social anxiety tend to internalize the gaze of a critical audience, forming a persistent negative self-imagery that reinforces their fear of negative evaluation. The person takes on an external, critical view of themselves as if seeing themselves from others' viewpoints.

This leads to a "vicious cycle" (Morrison and Heimberg 2013) in which heightened anxiety and increased self-focus amplify attention to perceived social threats, reinforcing the fear response. Negative stimuli dominate attention, resulting in distorted interpretations of the situation and a strong association between the self and anticipated failure. A key characteristic in this framework is impaired emotional regulation, specifically, a diminished ability to process and express positive emotions and a tendency to reflect negatively on social interactions after they occur. Individuals with elevated social anxiety struggle with regulating emotions, often suppressing positive experiences and anticipating future embarrassment or failure. In response, they may employ "safety behaviors", which are strategies intended to reduce anxiety, such as avoiding eye contact, hiding signs of nervousness, or altering their voice. However, these behaviors, which are part of post-event processing, typically fail to reduce anxiety or lead to corrective experiences, thereby reinforcing the disorder and preventing recovery.

Multiple anxiety measurement tools have been developed across various languages and cultural contexts, so an exhaustive list is difficult to compose. One of the most widely used instruments is the LSAS (Liebowitz 1987), which was developed in the last quarter of the twentieth century and has undergone extensive research and cultural adaptation, including the development of shortened versions (Olivares et al. 2005, Pechorro et al. 2016, Nelemans et al. 2019, Alam et al. 2021, Schiltz et al. 2021). Other important instruments include the Social Anxiety Scale for Children-Revised (SASC-R), also modified by La Greca (La Greca and Lopez 1998) for use with teenagers, the Social Phobia Inventory (SPIN) (Connor et al. 2000), the Social Interaction Anxiety Scale (SIAS) with the Social Phobia Scale (SPS) (Mattick and Clarke 1998), and other measures like the Social Phobia and Anxiety Inventory (SPAI) (Turner et al. 1989), the 30-item Social Anxiety Questionnaire for Adults (SAQ-A30) (Caballo et al. 2010), and the Fear of Negative Evaluation (FNE) scale, both the full version based on Watson and Friend (1969) and the shortened version (Leary 1983). In Egypt, Makki developed a social anxiety scale to test on psoriasis patients (Makki 2023). El-Hanafi (El-Hanafi et al. 2022) investigated the psychometric features of a social anxiety measure among Egyptian university students. Mahdi (2014) created a social anxiety measure within a counselling program, drawing on various existing scales and emphasizing the need to create social anxiety scales. Al-Riggad's (2017) investigation indirectly corroborated the same significance. All of these scales

have satisfactory reliability and validity results. The variety of scales emphasizes the need to pay attention to the phenomenon of social anxiety and the ongoing need to produce varied tools that consider cultural and societal changes and international diagnostic criteria.

The significance of this study lies in providing a psychometrically sound tool that is culturally sensitive to Arab populations while aligned with international diagnostic criteria. This makes it useful for clinical screening, cross-cultural comparative studies, and culturally sensitive therapeutic interventions. Social anxiety remains a critical area of concern across diverse populations yet culturally adapted and psychometrically sound tools in Arab contexts are lacking. The Social Anxiety Scale developed by Rudwan (2001) presents a promising foundation for measuring social anxiety; however, its adaptation and revalidation in broader Arab contexts such as Syria and Oman are necessary to ensure its relevance, accuracy, and cross-cultural applicability.

This study aims to revise and further develop Rudwan's (2001) Social Anxiety scale by reassessing its psychometric properties in the Syrian and Omani samples and examining its factorial components through exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The specific objectives of the study are to examine the factorial structure of the Revised Social Anxiety Scale, assess its validity and reliability using Syrian and Omani samples, evaluate the extent to which the revised scale aligns with modern international diagnostic criteria (ICD 11, DSM-5-TR), determine the extent to which its factorial structure conforms across Syrian and Omani contexts, and explore the presence of gender-based differences in social anxiety.

Method

This research was reviewed and approved by the Institutional Human Research Ethics Committee (HREC) at the University of Nizwa (Date: 1.09.2024, Ref. No.: HREC/06/2024). The study involved non-clinical adult participants and was conducted in accordance with the ethical guidelines of the University of Nizwa and the Declaration of Helsinki. Participation was voluntary, and all respondents provided informed consent electronically prior to participation in the online survey. Data were collected anonymously, and no identifying information was recorded.

Study has been conducted in two phases Two independent studies were conducted. In Study 1 EFA was applied to a sample of 314 adults from Syria and Oman to identify the factorial structure of a revised 43-item scale of Rudwan's (2001) Social Anxiety Scale. Study 2 aimed to confirm the results obtained through the factor analysis identified in Study 1 by conducting CFA and to examine the scale's reliability and concurrent validity.

Sample of Study 1

The first study aimed to explore the underlying factor structure of the newly developed Revised Social Anxiety Scale. Participants comprised 314 adults recruited from Syria and Oman via online platforms, with involvement entirely voluntary; they were informed of their right to respond freely and withdraw at any time without repercussions, and completion of the questionnaire served as informed consent, with no cases excluded post-agreement. Demographics included 221 Syrians and 93 Omanis; 110 males, 198 females, and 6 who did not specify their gender; and an age range of 18 to 60 years ($M = 37.1$, $SD = 10.08$). The study was conducted independently by the author, who managed all research procedures and data collection in full accordance with ethical standards. For criterion-related validation, an additional independent sample of 61 participants—drawn from outside the main cohorts—was administered the Social Anxiety Scale alongside the SAQ-A30 and SAD-D-10 scales.

Sample of Study 2

A separate, independent sample of 345 adult participants (aged 19–60; $M = 36.5$, $SD = 9.7$), also from Syria and Oman (222 Syrians, 123 Omanis), was used in Study 2. This sample was recruited via similar online procedures and underwent the same ethical and data preparation protocols. Participants responded to the revised 23-item version of the scale. The second sample was subjected to the same procedures and conditions of informed consent as the first sample. The study was independently conducted by the author, who personally carried out all research procedures and data collection in accordance with ethical standards.

The adequacy of the sample size for both studies was evaluated based on established methodological guidelines. For Study 1 (EFA), the sample of 314 participants was considered sufficient, meeting the recommended ratio of at least five to ten participants per item (43 items). For Study 2 (CFA), the sample of 345 participants satisfied common SEM recommendations (≥ 200 overall and ≥ 5 participants per observed variable; 23 items). Although a

priori power analysis was not conducted, both samples fall within recommended ranges to achieve adequate statistical power (~ 0.80) and model stability in factor-analytic studies.

Measures

Revised Social Anxiety Scale

The scale used in this study was adapted from the Social Anxiety Scale developed by Rudwan (2001). The original version comprises 29 items and assesses four dimensions: (1) somatic symptoms, (2) difficulties in communication and self-expression, (3) fear of social situations and entering them, and (4) distraction and low self-confidence. The original scale demonstrated strong psychometric properties. In the current study, 14 items were added to encompass a broader range of social anxiety symptoms, in alignment with updated diagnostic criteria from international classification systems (APA 2013, WHO 2019).

The theoretical features of the Social Anxiety Scale developed in this study also considered Heimberg's cognitive-behavioral model of social anxiety. This model is one of the modern explanatory frameworks that provide insight into the behavioral and cognitive processes underlying the onset and maintenance of social anxiety disorder. The scale's items were constructed using theoretical elements taken from this model, with each item cluster representing a conceptual dimension based on the model. For example, poor self-assessment in expectation of negative judgment is reflected in the component of fear of evaluation and criticism. On the other hand, aspects like safety behaviors and threat-focused attention are captured by the performance anxiety dimension. According to the model's interplay between emotion and behavior, the physical symptom component relates to physiological reactions brought on by autonomic nervous system activation in social contexts (Morrison and Heimberg 2013). The final scale comprised 43 items, which underwent statistical analysis.

Social Anxiety Questionnaire for Adults (SAQ-A30)

the Social Anxiety Questionnaire for Adults (SAQ-A30) is an extended and later version of the Social Anxiety Questionnaire for Adults (SAQ), which was created and expanded as part of a broader study that involved 16 countries, including Spain, Portugal, and numerous Latin American nations (Caballo et al. 2015). The scale features thirty elements and five factors: Criticism and Embarrassment; Public Speaking/Speaking with Authority; Interactions with the Opposite Sex; Assertive Expression of Discomfort, Disgust, or Displeasure; and Interactions with Strangers. The scale has been used for concurrent validity and has high psychometric qualities.

Social Anxiety Diagnostic Scale (SAD-D-10)

American Psychiatric Association (APA 2013) published the American Psychological Association (APA) Social Anxiety Diagnostic Scale (SAD-D-10), which measures three levels of social anxiety severity on a ten-item self-assessment scale: severe, moderate, and mild. The scale was created using the DSM-5-TR standards. Convergent validity was also assessed using this scale as an external criterion.

Statistical Analysis

The statistical procedures were conducted in a sequential order consistent with established practices in scale development. Reliability and validity were examined first as a foundational step, followed by EFA to identify the latent structure, CFA to verify model fit, and finally, multi-group analyses to evaluate measurement invariance across cultural (Syrian vs. Omani) and gender groups. This sequencing reflects the logical progression commonly recommended in psychometric research. The statistical analyses were selected in accordance with the study's research questions and include the following procedures. Verbal validity was determined by calculating the correlation between the scale version and an external criterion (SAQ-A30, SAD-D-10), the scale's internal consistency, and Cronbach's alpha. EFA is a statistical method that identifies correlations between items and reduces them to latent factors. To assess the factor structure of a produced scale, the most appropriate method is Principal Axis Factoring (PAF), which analyzes the covariance between variables without being impacted by unique or random variation. This makes PAF the best method for determining the scale's internal construction and assessing its structural consistency. Direct Oblimin Rotation (DOF) was employed, assuming correlations between factors in the psychological construct studied. This rotation method allows a more accurate representation of the relationships among dimensions and facilitates the extraction of latent factors. The number of extracted factors was determined using the Kaiser criterion (eigenvalues > 1), and a minimum factor loading threshold of $|0.40|$ was adopted to ensure the retention of items with substantial contributions to the factor. Items with factor loadings below .40 were excluded, as this threshold is widely regarded as the minimum for practical significance and construct validity (Nunnally and Bernstein 1994, Hair et al. 2019, Field 2024). All

retained items exceeded this threshold and were therefore statistically sound. Nonetheless, the decision to retain some items with moderate loadings was also supported by theoretical and cultural considerations, as these items contribute meaningfully to capturing the multidimensional nature of social anxiety within Arab contexts.

Table 1. Five factors extracted from exploratory factor analysis

Factor 1: Social Situations Anxiety M = 2.05, SD = 0.77 (M = Mean; SD = Standard Deviation.); Variance Explained: 13.21%				
Item	Content	Loading	Communality	Alpha
5	I feel extremely tense before a social event	0.842	0.678	0.884
4	I feel anxious when thinking about meeting others	0.829	0.637	0.887
10	I notice that I feel afraid before a social event	0.716	0.678	0.881
9	I feel very tense when I am with others	0.557	0.612	0.891
14	A large number of people confuses me	0.463	0.620	0.888
28	I feel extreme tension when I am with people at an event	0.459	0.644	0.890
11	It becomes difficult for me to function when I feel someone is watching me	0.409	0.506	0.903
Factor 2: Difficulty Interacting with Strangers in New Situations M = 1.90, SD = 0.80; Variance Explained: 12.08%				
Item	Content	Loading	Communality	Alpha
19	I feel afraid when talking to a stranger	0.832	0.615	0.769
27	I find it difficult to talk to people I don't know	0.681	0.574	0.757
18	I hesitate to ask others about something	0.569	0.539	0.795
25	I find it difficult to express my opinion to strangers	0.495	0.569	0.788
Factor 3: Fear of Performing in Front of Others M = 2.28, SD = 0.90; Variance Explained: 11.20%				
Item	Content	Loading	Communality	Alpha
29	I feel confused when speaking in front of a group	-0.861	0.722	0.893
30	I panic just at the thought of giving a speech	-0.858	0.736	0.892
31	I feel anxious when I am the center of attention	-0.711	0.779	0.887
32	I avoid speaking in front of a large group	-0.512	0.669	0.896
41	My voice and limbs tremble when speaking	-0.462	0.582	0.904
38	My face turns red and hot when I am the focus of attention	-0.405	0.455	0.913
16	I worry about failing when giving a presentation or entering a social situation	-0.404	0.562	0.906
Factor 4: Fear of Evaluation and Criticism M = 1.92, SD = 0.85; Variance Explained: 10.29%				
Item	Content	Loading	Communality	Alpha
43	I'm afraid of making a mistake that leads to mockery or criticism	-0.768	0.675	0.789
23	I avoid speaking out of fear of criticism	-0.735	0.705	0.808
36	I am afraid of being mocked or criticized	-0.599	0.649	0.759
37	I choose to sit in less visible places	-0.426	0.461	0.807
Factor 5: Physical Symptoms of Social Anxiety M = 1.52, SD = 0.66; Variance Explained: 5.15%				
Item	Content	Loading	Communality	Alpha
42	My hands start sweating during social events	0.556	0.603	0.711
39	I feel dizzy during prolonged social interaction	0.462	0.522	0.732
26	I feel dry in the throat and my heart races when with others	0.409	0.557	0.715

Note. Items with loadings below .40 were excluded from the final solution. All reported loadings are $\geq .40$ and statistically interpretable. Reliability (Cronbach's α) is shown for each factor.

In the first step, a preliminary test confirmed the suitability of the data for factor analysis. The Kaiser-Meyer-Olkin (KMO) measure yielded a value of 0.964, indicating excellent sampling adequacy. Bartlett's test of sphericity was statistically significant ($\chi^2 = 7639.027$, $p < .001$), confirming the presence of sufficient correlations among variables. The determinant value was extremely low ($9.115E-12$), further validating the strong inter-item correlations.

The EFA revealed five psychologically interpretable factors with eigenvalues greater than 1.0. These factors collectively accounted for 57.6% of the total variance, a satisfactory level for psychometric tools in psychological research. The five extracted factors included 25 items, and items with loadings below the 0.40 threshold or without strong loading on any factor were excluded. Table 1 presents the factors and their corresponding item loadings.

Results

Internal Consistency

The first step assessed the internal consistency of the 43 items. To ensure strong internal consistency, the threshold for the corrected item-total correlation (CITC) was set at ≥ 0.50 . Eight items had CITC values below this threshold, indicating weak correlations with the overall scale and suggesting they did not adequately measure the same underlying construct.

The second step recalculated internal consistency for the remaining 35 items. The corrected item-total correlations ranged from 0.504 to 0.839. Item means ranged from 1.63 to 3.26, indicating limited variability in average item responses. Standard deviations ranged from 0.81 to 1.40, reflecting the scale's sensitivity in capturing individual differences and confirming the contribution of all retained items to the overall construct.

The reliability coefficient (Cronbach's alpha) for the 35-item version reached 0.96, indicating excellent internal consistency. This high value confirms the reliability of the scale but does not eliminate the need for further validation through EFA and CFA.

Criterion Validity

The results demonstrated strong and statistically significant correlations between the developed Social Anxiety Scale and both the SAQ-A30 ($r = 0.88$, $p < .001$) and the SAD-D-10 ($r = 0.80$, $p < .001$). This confirms the scale's high degree of concurrent validity (Nunnally and Bernstein 1994, Field 2024). Expanded statistical analyses can be performed to investigate the factorial structure of the scale based on this outcome (Hair et al. 2019).

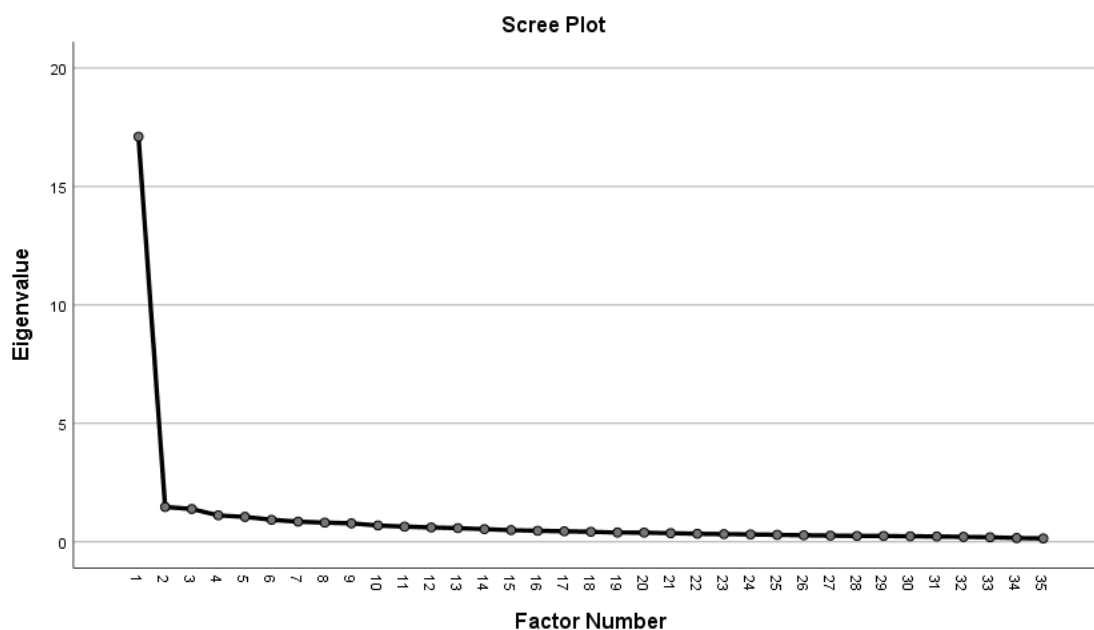


Figure 1. Scree plot of eigenvalues from the exploratory factor analysis

Exploratory Factor Analysis (EFA)

EFA is the best statistical technique for displaying related and dissimilar items in the form of a factorial structure, demonstrating correlations and reducing them to latent factors that represent the underlying factors that explain the common variance between the components. PAF is a suitable approach since the objective is to evaluate the factorial structure of a developed scale. PAF is also appropriate for exposing the underlying structure of the scale and evaluating the consistency of its structure because it solely explains the common variance between variables and is unaffected by unique or random variance. Additionally, DOR, which presupposes a link between the elements of the psychological construct under study, was employed. This approach is appropriate to best represent the relationships between components and the extraction of latent factors. The latent root criterion (eigenvalue > 1) was used to determine the number of extracted factors, and a minimum factor loading of 0.40 (absolute value) was used to guarantee the retention of strong and significant items that were representative of the latent constructs.

To assess the suitability of the data for factor analysis, the KMO measure was calculated, yielding a value of 0.964, indicating excellent sampling adequacy. Additionally, Bartlett's test of sphericity was statistically significant ($\chi^2 = 7639.027$, $p < .001$), confirming sufficient interitem correlations for factor analysis. The determinant value was extremely small (9.115E-12), further supporting the presence of strong correlations among variables.

The EFA extracted five factors, each with an eigenvalue greater than 1.0. All five were psychologically interpretable and collectively explained 57.6% of the total variance, which is considered acceptable for measures in the psychological sciences. These five factors comprised 25 items from the questionnaire. The remaining items had loadings below 0.40 and did not load meaningfully on any factor. Table 1 presents the extracted factors and their corresponding item loadings and Figure 1 shows the resulting factors curve.

Confirmatory Factor Analysis (CFA)

The five-factor model identified through EFA was further tested using AMOS with a second sample ($n = 345$). The results demonstrated a good model fit, thereby supporting and confirming the factorial structure of the developed scale. The CFA validated the underlying theoretical structure by replicating the factor composition obtained during the exploratory phase. Table 2 presents the model fit statistics for the CFA, while Table 2 summarizes the key fit indices for the CFA. These indices collectively indicate that the model fits the observed data well. As Table 2 shows, the Chi-square value was statistically significant, which is to be expected in large samples. The Chi-square/df ratio was less than 2, indicating an excellent model fit and providing a reliable indicator of the model's adequacy in representing the data structure.

Table 2. Model Fit indices for the extracted model.

Fit Index	Value	Interpretation
Chi-square	404.337	Statistically significant ($p < .001$) – expected with large sample size
Degrees of Freedom (df)	217	—
Chi-square/df	1.863	Excellent
RMSEA	0.050 (90% CI: 0.042–0.058)	≤ 0.05
PCLOSE	0.482	Indicates non-significant RMSEA – favorable
CFI	0.961	≥ 0.95
AIC	568.337	Used for comparison among multiple models
TLI	0.955	Exceptionally good
NFI	0.921	Good
ECVI	1.652	Good

Note. CFI $\geq .95$ and RMSEA $\leq .05$ indicate excellent model fit. All indices met recommended thresholds (Hair et al. 2019).

The Root Mean Square Error of Approximation (RMSEA) also indicated a strong fit, falling within the range commonly interpreted as excellent ($< .05$). Additionally, the Comparative Fit Index (CFI) was 0.961, exceeding the 0.95 threshold, further supporting the robustness of the model. Other fit indices yielded similar results. Collectively, these indicators suggest that the model demonstrates a very good fit and reflects a strong, statistically sound structure. Importantly, the model outperformed even a saturated model, which assumes all possible relationships among variables, as indicated by the Expected Cross-Validation Index (ECVI) values reported in Table 2.

Following the confirmatory analysis, 23 items were retained, while items 28 and 38 were removed due to their high residual variances and lack of contribution to the overall factor structure. Figure 2 displays the final version of the second-order confirmatory factor model, illustrating the validated structure of the developed scale

Conformity of the Revised Social Anxiety Scale with DSM-5-TR and ICD-11 Criteria

To assess the consistency of the Revised Social Anxiety Scale with the diagnostic criteria outlined in the DSM-5-TR and ICD-11, the scale's items were thoroughly compared with the diagnostic criteria described in these manuals. The results showed that the scale demonstrates high consistency with the key features of social anxiety disorder as specified in both manuals, suggesting reliability as a tool for clinical assessment of social anxiety. Table 4 presents the results of the comparison.

Table 4. Mapping of scale items to DSM-5-TR and ICD-11 diagnostic criteria		
Diagnostic Dimension	Related Scale Items	Notes
Fear of social evaluation or criticism	11, 16, 23, 25, 30, 31, 36, 43	Reflects fear of being judged, criticized, mocked, or evaluated negatively by others.
Avoidance, hesitation, or social withdrawal	18, 23, 25, 27, 32, 37	Indicates behavioral avoidance of social situations due to fear of negative evaluation.
Anxiety before and during social situations	4, 5, 9, 10, 19, 29, 30, 31	Captures anticipatory anxiety and heightened distress during social or performance settings.
Physical symptoms of anxiety	26, 39, 41, 42	Involves physiological manifestations of anxiety (e.g., sweating, trembling, heart racing).
Impairment in functioning	11, 16	Reflects the impact of anxiety on daily or social performance, especially under scrutiny.
Fear of failure or making mistakes	16, 30, 36, 43	Includes concern about making mistakes that might lead to embarrassment or rejection.

Note. This mapping shows conceptual alignment between the revised scale and international diagnostic standards.

Comparison between the Syrian and Omani Samples on the Revised Social Anxiety Scale Using Structural Modeling (AMOS).

This study phase aimed to assess the reliability of the Revised Social Anxiety Scale's factor structure across two samples: Syrians (n=237) and Omanis (n=108). To achieve this, a CFA was conducted on the general factor and the five factors of the developed scale.

Assessing the Normality of Data

To ensure the validity of the analysis, given the characteristics and size of the samples, the skewness and kurtosis coefficients were calculated for both groups. The results indicated that the data approximated a normal distribution, with values falling within statistically acceptable limits (± 2). This confirmed that the data were suitable for the maximum likelihood estimation method.

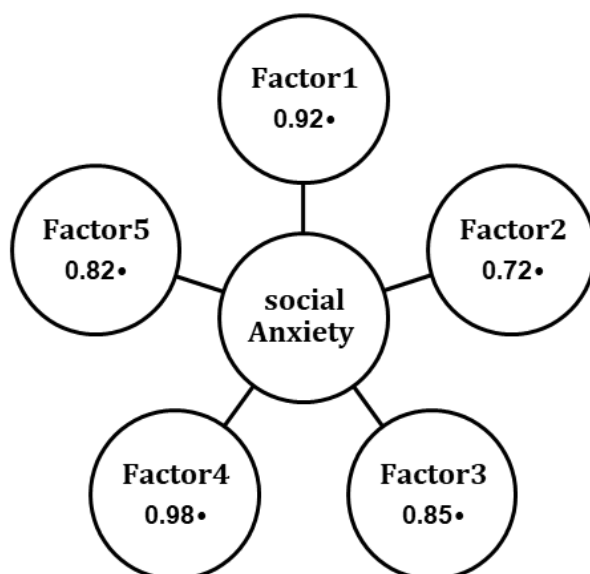


Figure 3. Standardized weights between subfactors and the overall factor

Model Goodness of Fit Indicators

Two models were tested: unconstrained and constrained (Model 1). Table 5 displays the results of these tests. Table 5 shows no significant difference between the unconstrained and constrained models. This indicates that the restricted model provides a good fit to the data, thereby demonstrating the achievement of full scalar invariance. Figure 3 illustrates the standardized weights between the subfactors and the general factor, providing a visual representation of the relationships between the constructs in the scale.

Table 5. Comparison between constrained and unconstrained models			
Model	Chi-square (df)	p-value	Interpretation
Unconstrained	808.674 (434)	.000	Used as baseline for comparison
Constrained	808.674 (456)	.000	No difference in model fit

Note. No significant difference was found between models, supporting measurement invariance across Syrian and Omani samples.

Measurement Invariance Test

A measurement invariance analysis was conducted on the two samples using AMOS for structural analysis. The analysis consisted of four levels of invariance, outlined in Table 6. Table 6 shows that the unconstrained model demonstrates the congruence of the scale's factor structure between the two groups. This indicates that, concerning the general factor of social anxiety, the structure of the five subscales is consistent across both samples. The congruence indices revealed a remarkably high degree of fit, with values of (CFI = 0.961, RMSEA = 0.035), justifying the progression to the standard invariance test for the scale. The metric invariance test, which involved restricting item weights to be equal across the two groups, showed no deterioration in congruence (Delta CFI = 0.000, Delta RMSEA = -0.002), supporting the comparison of structural relationships between the factors.

Subsequently, a scalar invariance test was conducted between the two samples. The indices for this test were CFI = 0.955 and RMSEA = 0.035, remaining within acceptable limits, with the CFI difference remaining below the threshold for significance. This supports the comparison of the means of social anxiety between the two samples. A structural weight invariance test was applied to examine whether the overall structural integrity of the scale is consistent across both groups. This test assumes equal path weights between the subfactors and the general factor in both the Syrian and Omani samples, allowing for comparisons at the item level and the level of the conceptual relationships between the factors and overall social anxiety. The results indicated that these indicators remained largely unchanged (CFI = 0.961, RMSEA = 0.035), demonstrating that the scale structure is consistent across the Syrian and Omani contexts.

Table 6. Comparison of measurement invariance models							
Model	χ^2 (CMIN)	Df	CFI	RMSEA	Δ CFI	Δ RMSEA	Result
Configural	808.674	434	0.961	0.035	–	–	Good fit
Metric Invariance	808.674	456	0.961	0.033	0.000	-0.002	Achieved
Scalar Invariance	900.781	478	0.955	0.035	0.006	0.002	Achieved
Structural Weights	808.674	438	0.961	0.035	0.000	0.000	Achieved

Note. Δ CFI < .01 and Δ RMSEA < .015 indicate invariance was achieved (Chen 2007). χ^2/df = Chi-square divided by degrees of freedom; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; SRMR = Standardized Root Mean Square Residual; IFI = Incremental Fit Index.

Regarding the standardized loadings of the items on the subfactors, the results presented in Table 7 show that all values exceed 0.50, indicating that the items strongly measure their respective factors.

Table 7. Standardized loadings (SLs) of the items on the subfactors									
F1-Item	SL	F2- tem	SL	F3-Item	SL	F4- tem	SL	F5-Item	SL
05	.736	19	.872	29	.834	43	.676	42	.644
04	.684	27	.821	30	.736	23	.751	39	.734
10	.762	18	.614	31	.865	36	.630	26	.755
09	.774	25	1.013	32	.878	37	.648		
14	.762			41	.654				
11	.689			16	.718				

Note. All standardized loadings exceeded .50, confirming that items strongly measure their intended factors

Based on the above results, the Revised Social Anxiety Scale is consistent across the two groups, demonstrating its validity for both structural comparison and the comparison of means between the Syrian and Omani samples.

Model Fit Test for Both Males and Females

Based on the earlier results, which demonstrated the consistency of the scale across the Omani and Syrian samples, a model fit test was conducted for both males (n = 111) and females (n = 226) from the two countries. Eight individuals who preferred not to disclose their gender were excluded due to the small group size. Table 8 presents the results of the fit indices. Table 8 shows that the model demonstrated adequate fit in both groups.

Table 8. Fit indices between Syrian and Omani males and females for the confirmatory model in each group separately

Group	Chi-square/df	CFI	TLI	RMSEA	PCLOSE
Males	1.538	.953	.944	.040	.997
Females	1.676	.941	.930	.045	.929

Note. Both male and female groups showed acceptable fit (CFI > .90, RMSEA < .05), supporting configural validity.

Using multiple models, four levels of scale stability were tested by conducting a measurement invariance test across gender (Table 9).

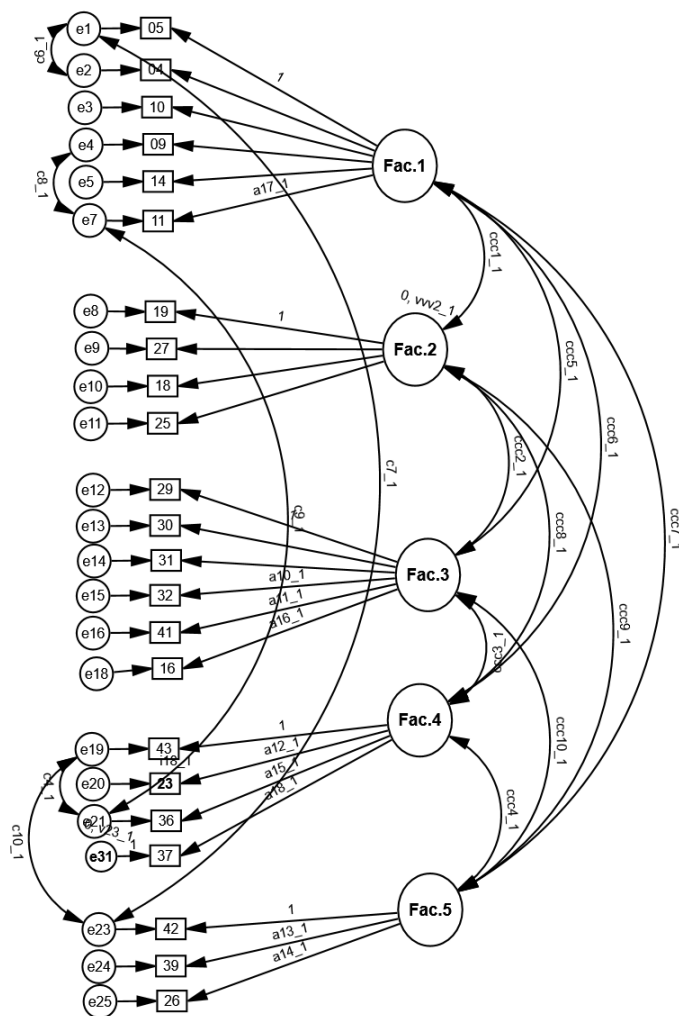


Figure 4. The five-item confirmatory model of the Social Anxiety Scale without the general factor, used to test measurement invariance and compare latent means across genders (females, males)

As Table 9 shows, the configural model exhibited a good fit (CFI = .914, RMSEA = .040), indicating the similarity of the basic factor structure between females and males. Furthermore, the metric invariance model demonstrated minimal differences, with indicators reaching $\Delta\text{CFI} = .005$ and $\Delta\text{RMSEA} = .001$, demonstrating the stability of the item weights between the two groups. Additionally, Table 9 highlights that the intercept model provided evidence of intercept stability ($\Delta\text{CFI} = .003$), thus allowing a comparison of the latent means (Figure 4).

Table 9. Measurement invariance testing between genders

Model	CMIN/DF	CFI	RMSEA	ΔCFI
Configural Model	1.612	.946	.043	—
Metric Invariance	1.619	.944	.043	.002
Scalar Invariance	1.634	.941	.043	.003
Structural Weights	1.653	.939	.044	.002

Note. Minimal ΔCFI and ΔRMSEA values support metric, scalar, and structural invariance across gender groups.

The means for females (as the reference group) were fixed, and the latent means for males were estimated to test the latent means model. Table 10 presents the results of these comparisons (Table 10). Table 10 shows no significant differences between males and females in the factors, except for the first factor (FNE), where the difference favored males. To assess the significance of this difference, the effect size of the difference in latent means was calculated using the equation effect size = $\Delta\mu/\sigma$, with the standard deviation of the reference group (female sample) set to 1. The result is Effect Size $F1 = 0.181/1 = 0.181$, indicating a small to medium difference according to Cohen's criteria (Cohen 1988). Although not practically significant, this difference warrants attention and should be explored further in future, larger studies. Overall, the patterns of social anxiety appear similar between males and females. This difference may be attributed to social factors, such as role expectations.

Table 10. Latent mean differences between males and females in social anxiety

Factor	Latent Mean Difference	p-value	Interpretation
Fear of Negative Evaluation (F1)	0.181	.043	Significant – higher in males
Social Interaction (F2)	Not significant	>.05	Not significant
Performance in Front of Others (F3)	Not significant	>.05	Not significant
Physical Symptoms (F4)	Not significant	>.05	Not significant
Avoidance (F5)	Not significant	>.05	Not significant

Note. A significant difference emerged only in Factor 1 (Fear of Negative Evaluation), where males scored slightly higher. Effect size=0.18 (small).

Discussion

To update Rudwan's Social Anxiety Scale (2001), this study expanded the sample to include two distinct Arab contexts (Syria, Oman) and modified and added items to conform to the most recent diagnostic standards (APA 2013, 2022, WHO 2019), and retested the scale's psychometric properties using sophisticated statistical analyses. The results demonstrated the Revised Social Anxiety Scale's validity as a diagnostic and discriminatory indicator, showing strong signs of construct validity, high internal consistency, and cultural and gender compatibility.

The five-factor structure extracted in this study reflects cognitive, behavioral, and physiological components of social anxiety. Its distinctiveness, however, emerges from the Arab cultural context, where collective values and social reputation play a central role in shaping social fears. The observed gender difference in "fear of negative evaluation"—with higher levels in males—contradicts prior evidence that females typically score higher (Asher and Aderka 2018). This divergence may be explained by cultural expectations of masculinity in Arab societies, where men are pressured to maintain a strong social image, thereby heightening their sensitivity to evaluation.

The EFA identified five different psychological variables of social anxiety: anxiety in social circumstances, difficulties communicating with strangers, dread of public performance, fear of evaluation, and somatic symptoms. This structure was confirmed using CFA, which yielded extremely high fit indices (CFI = .961, RMSEA = .050), increasing the model's validity. In addition, the inter-factor correlations ranged from .61 to .88, all statistically significant, indicating moderate-to-high associations among the latent factors. This suggests that while the five factors are conceptually related, they retain their distinctiveness, which further supports the multidimensional nature of social anxiety. The emergence of five distinct factors reflects the complexity of the construct and aligns with international efforts to categorize social anxiety into specific behavioral, cognitive, and physiological components, such as Caballo et al. (2010, 2015), which supported a five-factor model for measuring social anxiety across cultures. What sets this study apart is its use of objects with linguistic and cultural traits typical of Arab civilization to illustrate this structure in an Arab context. For instance, one item read, "I feel awkward when speaking in front of a group," which perfectly captures concern over public performance. This is a major issue in Arab cultures, which highly value social visibility. This is a major issue in Arab cultures, which highly value social visibility. In addition to these cultural dynamics, other factors may further exacerbate social anxiety in Arab contexts. Beyond the points already discussed, it is worth noting that certain social situations in Arab culture may intensify social anxiety, such as cross-gender interactions in conservative settings, where strict religious and social norms prevail and heighten fears of negative evaluation.

Additionally, family and community expectations regarding reputation and public conduct impose further pressures, reinforcing the importance of developing assessment tools that are culturally sensitive and appropriate for Arab populations.

The inter-factor correlations suggest that the extracted dimensions of social anxiety are moderately associated, which is consistent with the theoretical expectation that cognitive, behavioral, and affective components of social anxiety are interdependent yet distinguishable (Byrne 2012). The strong negative association observed between the avoidance-related factors and evaluation-related factors (e.g., $r = -.61$) may reflect differential expressions of social anxiety in Arab cultural contexts, where heightened concern for social reputation could inversely relate to overt avoidance strategies. These findings highlight the importance of interpreting the factors as correlated constructs rather than as entirely independent dimensions.

The resulting five-factor structure is logically correct and includes elements listed in contemporary diagnosis manuals, such as physiological symptoms, avoidance of engagement, and anticipatory anxiety. The resulting findings point to the influential role of cultural context in shaping the experience and expression of social anxiety and underscore the importance of culturally adapted assessment instruments. For instance, conservative settings that hold people to rigid group standards may cause greater public performance and criticism anxieties (Mahdi 2014).

The revised scale has a good internal consistency coefficient ($\alpha = .96$), indicating consistent measurement of the same idea (Nunnally and Bernstein 1994). Correlation coefficients with standardized measures (SAQ-A30, SAD-D-10) were also strong ($r = .88$, $r = .80$), demonstrating the Revised Social Anxiety Scale's validity and appropriateness as a first-line diagnostic tool.

The scale demonstrated strong agreement with established diagnostic variables such as fear of unfavorable appraisal, avoidance behavior, anxiety-related dysfunction, and associated physical symptoms. This compatibility increases the scale's potential for usage in clinical settings as an auxiliary to diagnosis, as recommended by current clinical guidelines (APA 2013, NICE 2013, WHO 2019).

The multi-group analysis revealed that all levels of measurement invariance, including weight invariance, intercepts, and structural correlations, were obtained across genders and settings (Syrian and Omani). This finding provides solid evidence of the scale's cultural and gender equivalency (Pechorro et al. 2016), allowing its use in cross-cultural and cross-group comparisons. Contrary to previous research (Asher and Aderka 2018, NIMH 2025), females are more vulnerable to social anxiety than males. The study findings revealed a significant difference in favor of males in the "fear of negative evaluation" factor. However, this difference was small (effect size = 0.18). This finding could be attributed to the diverse ways social anxiety manifests across genders or the influence of social role expectations in Arab cultures.

According to a study of the scale's five dimensions, the component structure closely matches the presumptions of Heimberg's cognitive-behavioral model. For example, negative self-evaluation correlates with the dimension of fear of evaluation and criticism. Extreme self-awareness and a heightened focus on threat signs are reflected in the dimension of performance anxiety in front of an audience, and items on the avoidance and difficulty interacting with strangers dimensions indicate the existence of safety behaviors. The physical symptoms dimension represents the physiological effects of social strain. This coherence indicates that the developed scale captures the observable behaviors and deeper psychological processes conceptualized in Heimberg's model, offering a multidimensional assessment of social anxiety. This improves the theoretical and applied validity of the instrument. The congruence between the item formulation and the model components suggests that the scale goes beyond recognizing surface-level symptoms and taps into the nuanced psychological mechanisms detailed in the theoretical framework. Accordingly, the revised scale demonstrates promise as a reliable measure of social anxiety and as a suitable tool for primary clinical evaluation and academic research.

The items' direct conformity with the components of Heimberg's model adds to the construct validity of the Revised Social Anxiety Scale. For example, the item "I fear making mistakes and being ridiculed or criticized" clearly conveys the concept of negative self-evaluation, which is one of the model's key components. Statements like "I choose to sit in inconspicuous places" and "I avoid speaking in front of large groups" represent safety behaviors that aim to avoid or reduce external attention.

Despite the strong results, important observations should be noted. The uniqueness of the five-factor structure in the Arab context may reflect components of social anxiety that are not as clearly evident in other cultures. This observation suggests that the construct of social anxiety is significantly influenced by cultural factors, as supported by La Greca and Lopez (1998). The final number of items (23) is ideal regarding practical efficiency, reducing respondent stress and improving data quality (Olivares et al. 2005).

This study is subject to limitations that should be considered when interpreting its findings. First, the period for data collection, spanning the last quarter of 2024 and the early months of the subsequent year, may limit the generalizability of the results to broader temporal or situational contexts. Second, the sample consisted of respondents who completed the questionnaire online, which may introduce selection bias and limit the sample representativeness, particularly in terms of demographic diversity and internet accessibility. Third, while the developed scale aimed to measure social anxiety comprehensively, no single instrument can fully encapsulate the complexity of the construct, especially across cultural settings. Fourth, although rigorous statistical methods were applied to explore the factorial structure and psychometric properties of the scale, limitations inherent in these techniques may affect the interpretation of the results. In addition, the study was confined to two Arab contexts (Syria and Oman), which may restrict the generalizability of the findings to other Arab countries with distinct cultural and social characteristics, such as those in the Gulf region or North Africa. Moreover, the instrument has not yet been examined in clinical samples involving individuals with disorders closely related to social anxiety (e.g., specific phobia or depression with anxiety features), nor has its predictive validity been assessed in monitoring symptom development over time. Lastly, test-retest reliability has not been verified, an essential factor that should be investigated further. These limitations highlight important directions for future research

Conclusion

The findings of this study revealed that the proposed Social Anxiety Scale has significant psychometric qualities, including a clear and identifiable five-factor structure, high internal consistency, and high convergent validity with recognized international scales (SAQ-A30, SAD-D-10). The findings also revealed structural congruence between the scale and the DSM-5-TR and ICD-11 criteria, reinforcing its status as a trustworthy and therapeutically relevant psychological tool. EFA and CFA supported the five-factor model's ability to represent the variables of social anxiety among participants in both the Syrian and Omani contexts. Measurement invariance was confirmed across genders and settings, increasing the scale's suitability for cross-cultural and cross-gender comparisons. The variations in one aspect (fear of negative judgment in favor of males) have a minor effect, but they pave the way for more in-depth qualitative analyses in future studies.

Social anxiety is a growing phenomenon and is expected to increase in the future due to heightened expectations related to performance and social communication, increasing social competition and associated pressures. Concerning the current instrument, further research is needed to validate the scale's properties in diverse cultural settings and ensure its cross-cultural applicability. This would enhance its global relevance and effectiveness in measuring social anxiety across different populations. Developing a shorter version based on the five extracted factors could increase its practicality in applied studies or clinical settings. This would reduce the respondent burden and improve the efficiency of data collection, particularly in high-volume environments. The scale could be employed as an adjunct in the first assessment of social anxiety in clinical and medical contexts. Its use in early diagnostic stages could enhance the precision of diagnosis, guide treatment decisions, and provide better support for individuals experiencing social anxiety.

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