

# Design and Testing of a Model of the Effect of Social Situation Appraisal on Social Anxiety in Female University Students with the Mediating Role of Safety Behaviors and Social Beliefs and Thoughts

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## ABSTRACT

**Objective:** The present study aimed to design and test a structural model of the effect of social situation appraisal on social anxiety in female university students, with the mediating roles of safety behaviors and social beliefs and thoughts.

**Methods and Materials:** This study employed a descriptive correlational design using structural equation modeling. The statistical population consisted of female students enrolled at Ahvaz Jundishapur University of Medical Sciences during the 2020–2021 academic year, from which 483 participants were selected through convenience sampling. Data were collected using the Social Phobia Inventory (SPIN), the Overall Assessment of the Speaker's Experience of Stuttering (OASES), the Social Thoughts and Beliefs Scale (STABS), and the Social Phobia Safety Behaviors Scale (SPSBS). After screening for assumptions such as normality and absence of multicollinearity, data were analyzed using AMOS (version 23) with the maximum likelihood estimation method. Indirect effects were examined using the bootstrap procedure.

**Findings:** The results indicated that the final structural model demonstrated acceptable fit indices (RMSEA = 0.07, CFI = 0.98, IFI = 0.98, GFI = 0.97, AGFI = 0.95,  $\chi^2/df = 3.75$ ). Social situation appraisal had a significant direct effect on social anxiety ( $\beta = 0.84$ ,  $p < .0001$ ), as well as on safety behaviors ( $\beta = 0.63$ ,  $p < .0001$ ) and social beliefs and thoughts ( $\beta = 0.77$ ,  $p < .0001$ ). In addition, safety behaviors ( $\beta = 0.22$ ,  $p < .0001$ ) and social beliefs and thoughts ( $\beta = 0.26$ ,  $p < .0001$ ) had significant direct effects on social anxiety. Bootstrap analysis confirmed significant indirect effects of social situation appraisal on social anxiety through safety behaviors ( $\beta = 0.037$ ,  $p = .024$ ) and social beliefs and thoughts ( $\beta = 0.026$ ,  $p = .032$ ).

**Conclusion:** The findings support an integrated cognitive-behavioral model in which social situation appraisal influences social anxiety both directly and indirectly through safety behaviors and social beliefs, highlighting the importance of targeting both cognitive and behavioral mechanisms in interventions for socially anxious students.

**Keywords:** Social anxiety, social situation appraisal, social beliefs and thoughts

## 1. Introduction

Social anxiety disorder is recognized as one of the most prevalent and debilitating psychological conditions, particularly among young adults and university students. It is characterized by a persistent and excessive fear of being negatively evaluated, judged, or embarrassed in social or performance situations, which often leads to significant distress and functional impairment across academic, interpersonal, and occupational domains (Heimberg et al., 2014; Stein et al., 2019). Epidemiological studies have consistently shown that social anxiety is highly prevalent among youth populations, with cross-national evidence indicating substantial rates of social anxiety symptoms among university students, particularly females (Jefferies & Ungar, 2020; Norouzi et al., 2016). The persistence of social anxiety into adulthood is associated with adverse psychosocial outcomes, including reduced quality of life, impaired social functioning, and increased risk for comorbid mental health conditions such as depression and substance use disorders (Acarturk et al., 2009; Blanco et al., 2014).

The theoretical understanding of social anxiety has evolved significantly, with cognitive-behavioral models providing the most comprehensive explanatory framework. According to the cognitive model, individuals with social anxiety tend to engage in maladaptive cognitive processing, including negative interpretations of social situations, heightened self-focused attention, and biased expectations of rejection or failure (Beck & Haigh, 2014; Hofmann et al., 2021). These cognitive distortions are often rooted in dysfunctional beliefs about the self and others, such as perceived social inadequacy or exaggerated standards for social performance (Gilboa-Schechtman et al., 2020; Stein et al., 2019). Furthermore, integrated models emphasize the interaction between cognitive, emotional, and socio-affective processes in shaping social anxiety, suggesting that the appraisal of social situations plays a central role in triggering and maintaining anxiety responses (Vos et al., 2025; Wong & Rapee, 2016).

A critical component in the development and maintenance of social anxiety is the individual's appraisal of social situations. Social situation appraisal refers to how individuals interpret, evaluate, and assign meaning to social interactions, particularly in terms of perceived threat and potential negative evaluation. Individuals with social anxiety tend to interpret ambiguous social cues as threatening, overestimate the likelihood of negative outcomes, and underestimate their ability to cope effectively (Spiroiu &

Maranzan, 2025; Stork et al., 2023). These biased appraisals are closely linked to fear of negative evaluation, a core feature of social anxiety disorder, and contribute to heightened emotional and physiological responses in social contexts (Iverach et al., 2017; Okawa et al., 2021).

In addition to cognitive appraisals, safety behaviors have been identified as a key maintaining factor in social anxiety. Safety behaviors are strategies employed by individuals to prevent or minimize perceived social threats, such as avoiding eye contact, rehearsing speech excessively, or limiting participation in social interactions. Although these behaviors may provide short-term relief, they ultimately reinforce anxiety by preventing disconfirmation of negative beliefs and maintaining maladaptive cognitive patterns (Evans et al., 2021; Taylor & Alden, 2010). Empirical studies have demonstrated that the use of safety behaviors is positively associated with the severity of social anxiety symptoms and contributes to the persistence of the disorder over time (Bahrami et al., 2012; Cougle et al., 2020).

Another crucial factor in the cognitive framework of social anxiety is the presence of dysfunctional social beliefs and thoughts. These include negative automatic thoughts, maladaptive schemas, and biased self-perceptions that shape how individuals perceive themselves in social contexts. Individuals with social anxiety often hold beliefs that others are more competent or socially adept, leading to unfavorable social comparisons and feelings of inadequacy (Calvete et al., 2015; Stein et al., 2019). These beliefs are further reinforced by emotional regulation difficulties and attachment-related vulnerabilities, which mediate the relationship between social experiences and anxiety symptoms (Read et al., 2018). The role of cognitive distortions in social anxiety has been widely supported in both theoretical and empirical literature, highlighting their importance as targets for psychological interventions (Beck & Haigh, 2014; Heimberg et al., 2014).

Recent research has increasingly focused on the mediating mechanisms that link cognitive and behavioral processes to social anxiety. Mediation models have demonstrated that variables such as rumination, intolerance of uncertainty, and social sensitivity can influence the relationship between cognitive appraisals and anxiety outcomes (Sabah et al., 2025; Uzun et al., 2025). Similarly, studies have shown that social anxiety itself can act as a mediator between broader psychological constructs, such as self-esteem and behavioral outcomes, indicating its central role within complex psychological systems (Zhao et al., 2023; Zhu et al., 2025). These findings underscore the

importance of examining indirect pathways and mediating variables to better understand the etiology and maintenance of social anxiety.

Advancements in methodological approaches, particularly structural equation modeling, have enabled researchers to test complex theoretical models that incorporate multiple direct and indirect relationships simultaneously. Structural equation modeling provides a robust framework for evaluating the interplay between cognitive, emotional, and behavioral variables, allowing for a more comprehensive understanding of psychological phenomena (Jacobucci et al., 2016). Recent studies employing such approaches have highlighted the multifactorial nature of social anxiety and the importance of integrating cognitive and behavioral components into a unified model (Wolitzky-Taylor & LeBeau, 2023; Zhao et al., 2023).

Moreover, contemporary research has emphasized the influence of sociocultural and contextual factors on social anxiety. Variables such as social media use, perceived social support, and exposure to health-related information have been shown to interact with individual cognitive processes in shaping anxiety responses (Özok et al., 2025; Tosun, 2025; Yan et al., 2025). For example, problematic social media use has been associated with increased social appearance anxiety and maladaptive self-perceptions, particularly among young women (Özok et al., 2025). Similarly, perceived social support has been identified as a protective factor that can mitigate the impact of stress and anxiety, although its effects are often mediated by psychological resilience and cognitive appraisal processes (Yan et al., 2025). These findings highlight the need to consider both individual and contextual determinants in the study of social anxiety.

In light of the existing literature, it is evident that social anxiety is a multifaceted construct influenced by a complex interplay of cognitive appraisals, safety behaviors, and social beliefs. However, despite extensive research in this field, there remains a need for integrative models that simultaneously examine these variables within a coherent framework, particularly in specific populations such as female university students, who may be at heightened risk due to sociocultural and developmental factors (Alden et al., 2018; Spence & Rapee, 2016). Therefore, the aim of the present study was to design and test a structural model of the effect of social situation appraisal on social anxiety in female university students, with the mediating roles of safety behaviors and social beliefs and thoughts.

## 2. Methods and Materials

### 2.1. Study Design and Participants

The present study was descriptive in nature and employed a correlational design (using structural equation modeling). The statistical population included all female students at Ahvaz Jundishapur University of Medical Sciences who were enrolled during the 2020–2021 academic year. Based on similar studies and comparable samples, a sample size of 500 participants was initially considered. Inclusion criteria were informed consent to participate in the study and current enrollment at Ahvaz Jundishapur University of Medical Sciences. Exclusion criteria included the presence of any psychological disorder other than social anxiety and incomplete responses to the questionnaire items. After applying the inclusion and exclusion criteria, a total of 483 questionnaires were retained for analysis.

The procedure was conducted as follows: first, the questionnaires were designed electronically. Given that the present study was conducted during the COVID-19 pandemic and students were not physically accessible, virtual platforms were utilized following necessary coordination. Accordingly, students from different fields who were members of academic groups were contacted, and after obtaining permission and informed consent, the online questionnaire link was first shared in their academic groups. Subsequently, individual messages were sent to participants via email, WhatsApp, and Instagram using a convenience-based approach.

### 2.2. Measures

The Social Phobia Inventory (SPIN) was developed by Connor, Davidson, Churchill, Sherwood, Weisler, and Foa (2000) to assess symptoms of social anxiety. This instrument consists of 17 items and evaluates three major dimensions of social anxiety: fear (6 items), avoidance (7 items), and physiological discomfort in social situations (4 items). Each item is scored on a 5-point Likert scale ranging from 0 (not at all) to 4 (extremely). Hassanvand Amouzadeh (2016) examined the psychometric properties of the instrument in an Iranian sample. The researcher reported convergent validity coefficients of  $r = .83$  and  $r = .74$  with the phobic anxiety subscale of the Symptom Checklist-90-Revised (SCL-90-R) and the Cognitive Errors Questionnaire (CEQ), respectively. Discriminant validity was reported as  $r = -.70$  with the Self-Esteem Rating Scale (SERS) and  $r = -.44$  with the Multidimensional Body-Self Relations Questionnaire

(MBSRQ) ( $p < .001$ ). Reliability coefficients obtained using Cronbach’s alpha, the Spearman–Brown coefficient, and test–retest methods were .97, .97, and .82, respectively ( $p < .001$ ).

The Overall Assessment of the Speaker’s Experience of Stuttering for Adults (OASES) was developed by Gabel, Grohn, Sloboda, Edelstein, and Smith (2012). This questionnaire is a 37-item instrument rated on a 4-point Likert scale. It assesses two dimensions: (a) the level of anxiety experienced in situations and (b) the extent of avoidance of such situations. The anxiety dimension is scored from 0 (not at all) to 3 (severe), and the avoidance dimension from 0 (never) to 3 (usually), yielding a total score ranging from 0 to 222. The internal consistency of the scale, calculated using Cronbach’s alpha, was reported as .96 for the total questionnaire. Convergent validity with the Beck Anxiety Inventory (BAI), the Liebowitz Social Anxiety Scale (LSAS), and the Social Phobia and Anxiety Inventory (SPAI) demonstrated moderate to strong correlations, while discriminant validity with OASES and the 12-item Short Form Health Survey (SF-12) showed low to moderate correlations (Gabel et al., 2012). In the present study, the reliability of this questionnaire for the total sample, calculated using Cronbach’s alpha, was .91.

The Social Thoughts and Beliefs Scale (STABS) was developed by Fergus, Valentiner, Kim, and Stephenson (2009). This scale consists of 21 items and includes two subscales: (a) social comparison and (b) social inadequacy. The social comparison subscale includes 10 items and assesses beliefs whereby individuals perceive others as more socially competent and capable than themselves. The social inadequacy subscale includes 11 items and assesses beliefs related to the likelihood of exhibiting irrational behaviors in social situations. Each item is rated on a 5-point Likert scale

ranging from 1 (not at all characteristic of me) to 5 (completely characteristic of me). Cronbach’s alpha for the total STABS score has been reported as .96, and .95 for its subscales. In the present study, the reliability of this instrument for the total sample, calculated using Cronbach’s alpha, was .78.

The Social Phobia Safety Behaviors Scale (SPSBS) was developed by Pinto-Gouveia, Cunha, and Salvador (2003). This scale consists of 17 items rated on a 4-point Likert scale (never, sometimes, often, almost always). It is used to assess safety behaviors exhibited by individuals when exposed to fear-inducing social situations. The internal consistency of this scale in individuals with social anxiety disorder has been reported as .82. In a study by Bahrami, Abolghasemi, and Narimani (2012), the reliability coefficient of this scale (after four weeks) was reported as .69, and Cronbach’s alpha was reported as .74.

### 2.3. Data Analysis

Finally, the data were analyzed using correlational statistical methods and structural equation modeling. The bootstrap method was applied using AMOS software to analyze mediating relationships.

## 3. Findings and Results

In the first section, demographic characteristics are presented. The total sample consisted of 483 participants. The mean age of the entire sample was  $23.83 \pm 5.18$  years. The distribution of participants by field of study included 137 medical students (28.4%), 39 dental students (8.1%), 88 nursing students (18.2%), 81 midwifery students (16.8%), and 138 students from other medical sciences disciplines (28.6%).

**Table 1**

*Descriptive Statistics of Research Variables*

Variable	Mean	SD	Skewness	Kurtosis	Tolerance	VIF
Social Anxiety	147.16	11.21	0.86	0.38	0.21	4.73
Social Situation Appraisal	60.01	26.76	0.46	-0.08	0.19	5.08
Safety Behaviors	33.94	7.56	0.39	-0.07	0.44	2.27
Social Beliefs and Thoughts	17.51	5.56	0.33	-0.40	0.36	2.70

Examination of the data indicated that the skewness and kurtosis values of the study variables were within the range of  $\pm 2$ , suggesting that the data were normally and appropriately distributed. To assess multicollinearity, tolerance statistics and variance inflation factors (VIF) were

used. As shown in Table 1, VIF values were less than 10 and tolerance values were greater than 0.10, indicating the absence of multicollinearity among the variables. Multivariate normality was examined using Mahalanobis distance (D). The results showed a Mahalanobis distance

value of 24.07, which, compared with the critical value of 26.56, indicated that the data followed a normal distribution. Therefore, no evidence of multivariate outliers was observed

in the collected data. Correlations among variables are presented in Table 2, and model fit indices are reported in Table 3.

**Table 2**

*Pearson Correlation Matrix Among Research Variables*

Variable	1	2	3	4
1. Social Anxiety	1	.50*	.67*	.65*
2. Social Situation Appraisal		1	.59*	.60*
3. Safety Behaviors			1	.55*
4. Social Beliefs and Thoughts				1

\*p<0.01

According to the results in Table 2, correlations among all variables were statistically significant; therefore, testing the research model was feasible.

To test the model, structural equation modeling using the maximum likelihood method was applied. Initially, the underlying assumptions of structural equation modeling were examined. After preliminary data screening (e.g., checking for outliers), the main assumptions, including

univariate and multivariate normality, were found to be satisfactory. It should be noted that the initial model did not demonstrate an adequate fit. To improve model fit, two modifications were implemented by adding error covariances between variables with high correlation coefficients. The model fit was then recalculated and reached an acceptable level. The results of the initial and modified model fit are presented in Table 3.

**Table 3**

*Model Fit Indices of the Research Model*

Indices	RMSEA	AGFI	GFI	IFI	CFI	$\chi^2/df$
Before Modification	0.11	0.81	0.74	0.88	0.88	7.54
After Modification	0.07	0.95	0.97	0.98	0.98	3.75
Acceptable Criteria	≤0.08	≥0.95	≥0.95	≥0.96	≥0.96	<5

Initial evaluation of the fit indices indicated that the model did not adequately fit the data. After applying the proposed modification indices, re-evaluation of the fit

indices indicated an acceptable fit of the structural model with the data. The standardized estimates of the structural model are presented in Figure 1.

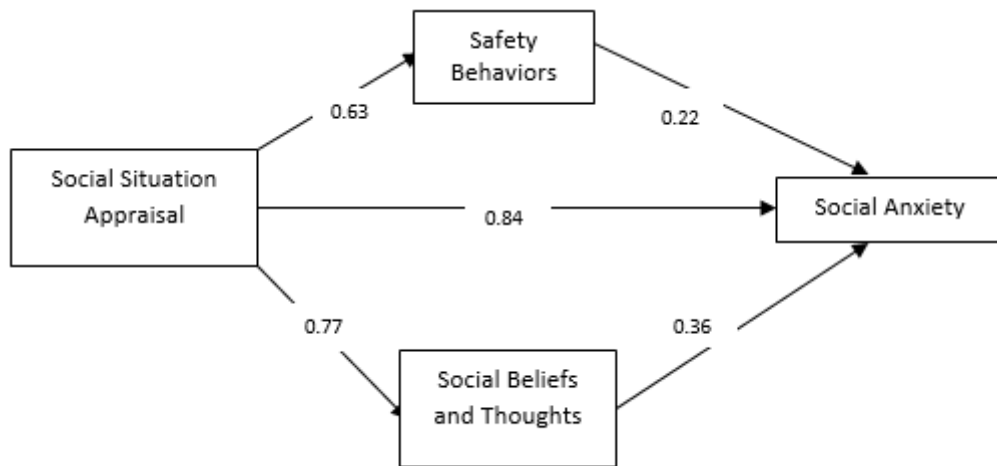
**Table 4**

*Direct Effects Among Research Variables in the Final Model*

Path	B	p
Social Situation Appraisal → Social Anxiety	.84*	<.0001
Social Situation Appraisal → Safety Behaviors	.63*	<.0001
Social Situation Appraisal → Social Beliefs	.77*	<.0001
Social Beliefs and Thoughts → Social Anxiety	.26*	<.0001
Safety Behaviors → Social Anxiety	.22*	<.0001

**Figure 1**

*Standardized path coefficients of the final research model in the student sample.*



Based on the path analysis results in Table 4, all direct paths to social anxiety were statistically significant ( $p < .0001$ ).

**Table 5**

*Bootstrap Results for Indirect Paths in the Research Sample*

Path	B	Lower Bound	Upper Bound	p
Social Situation Appraisal → Safety Behaviors → Social Anxiety	.037*	-0.066	-0.006	.024
Social Situation Appraisal → Social Beliefs → Social Anxiety	.026*	-0.022	-0.001	.032

As shown in Table 5, social situation appraisal had a significant indirect effect on social anxiety in female students through the mediating variables of safety behaviors and social beliefs and thoughts ( $p < .05$ ).

#### 4. Discussion

The present study aimed to examine a structural model of the relationship between social situation appraisal and social anxiety in female university students, with the mediating roles of safety behaviors and social beliefs and thoughts. The findings indicated that the proposed model demonstrated an acceptable fit with the observed data after model modification, confirming the theoretical coherence of the relationships among the studied variables. More specifically, the results revealed that social situation appraisal had a significant direct effect on social anxiety, as well as significant indirect effects through safety behaviors and social beliefs and thoughts. Additionally, both safety behaviors and social beliefs were found to have significant direct effects on social anxiety. These findings collectively support a multidimensional and integrative explanation of social anxiety, consistent with contemporary cognitive-behavioral frameworks.

The significant direct relationship between social situation appraisal and social anxiety aligns with cognitive theories that emphasize the central role of maladaptive interpretations of social contexts in the development and maintenance of anxiety. Individuals with heightened social anxiety are more likely to interpret social situations as threatening and to anticipate negative evaluation, which intensifies emotional distress and avoidance behaviors (Beck & Haigh, 2014; Hofmann et al., 2021). This finding is consistent with research demonstrating that biased processing of social information—particularly negative interpretations of ambiguous cues—is a key mechanism underlying social anxiety symptoms (Spiroiu & Maranzan, 2025; Stork et al., 2023). Furthermore, the role of social situation appraisal is supported by integrated models suggesting that cognitive and socio-affective processes jointly shape individuals’ responses to social environments (Vos et al., 2025).

The findings also indicated that safety behaviors significantly predicted social anxiety, which is consistent with previous empirical evidence and theoretical models. Safety behaviors, such as avoidance, excessive self-monitoring, or reliance on compensatory strategies, are often used by individuals with social anxiety to minimize

perceived threats. However, these behaviors paradoxically maintain and exacerbate anxiety by preventing individuals from disconfirming their negative beliefs (Evans et al., 2021; Taylor & Alden, 2010). The current results corroborate studies showing that reduction of safety behaviors leads to significant improvements in social anxiety symptoms, highlighting their causal role in maintaining the disorder (Cogle et al., 2020). Additionally, prior research has demonstrated that individuals with social anxiety exhibit higher levels of safety behaviors compared to non-anxious individuals, further supporting the present findings (Bahrami et al., 2012).

Another important finding of this study is the significant effect of social beliefs and thoughts on social anxiety. This result is in line with cognitive models that emphasize the role of dysfunctional beliefs, negative self-evaluations, and maladaptive schemas in shaping social anxiety. Individuals with social anxiety often perceive themselves as socially inadequate and believe that others are more competent or critical, leading to heightened anxiety in interpersonal contexts (Calvete et al., 2015; Gilboa-Schechtman et al., 2020). The findings are also consistent with research on the Social Thoughts and Beliefs Scale, which demonstrates that negative social cognitions are strongly associated with social anxiety severity (Stein et al., 2019). Moreover, the mediating role of cognitive factors is supported by studies showing that emotion regulation strategies and attachment styles influence social anxiety through maladaptive beliefs and interpretations (Read et al., 2018).

The mediating role of safety behaviors in the relationship between social situation appraisal and social anxiety represents a key contribution of the present study. This finding suggests that individuals who appraise social situations as threatening are more likely to engage in safety behaviors, which in turn increase their levels of social anxiety. This pathway is consistent with cognitive-behavioral models proposing that safety behaviors serve as maintaining mechanisms that reinforce maladaptive appraisals and prevent corrective learning (Heimberg et al., 2014; Iverach et al., 2017). The results are further supported by longitudinal and experimental studies indicating that safety behaviors mediate the relationship between cognitive biases and anxiety outcomes (Cogle et al., 2020).

Similarly, the mediating role of social beliefs and thoughts underscores the importance of cognitive processes in linking situational appraisals to emotional outcomes. Individuals who interpret social situations negatively are more likely to develop dysfunctional beliefs about

themselves and others, which in turn contribute to heightened anxiety. This finding aligns with vulnerability-stress models suggesting that maladaptive schemas interact with environmental stressors to produce anxiety symptoms (Calvete et al., 2015). Additionally, recent mediation studies have highlighted the role of cognitive factors such as rumination and intolerance of uncertainty in explaining the relationship between situational perceptions and anxiety, further supporting the present results (Uzun et al., 2025).

The combined mediating effects of safety behaviors and social beliefs indicate that social anxiety is not solely the result of immediate cognitive appraisals but rather emerges from a dynamic interplay between cognitive and behavioral processes. This integrated perspective is consistent with contemporary models that emphasize the interaction between multiple domains, including cognition, emotion, and behavior, in the etiology of social anxiety (Wolitzky-Taylor & LeBeau, 2023; Wong & Rapee, 2016). The findings also support the notion that interventions targeting both cognitive distortions and maladaptive behaviors may be more effective in reducing social anxiety symptoms. For instance, cognitive restructuring aimed at modifying dysfunctional beliefs, combined with behavioral experiments designed to reduce safety behaviors, has been shown to produce significant therapeutic gains (Alden et al., 2018).

Furthermore, the results of this study can be interpreted in light of broader contextual and sociocultural factors. Emerging research suggests that social anxiety is influenced by environmental variables such as social media use, social comparison, and perceived social support. For example, problematic social media use has been associated with increased social anxiety through heightened self-evaluation and comparison processes (Özok et al., 2025; Tosun, 2025). Similarly, perceived social support can buffer the effects of stress and anxiety, although its impact is often mediated by cognitive and emotional processes (Yan et al., 2025). These findings highlight the relevance of considering contextual influences when examining social anxiety in contemporary populations.

In addition, the significant relationships observed in the present study are consistent with recent evidence emphasizing the mediating and moderating roles of psychological variables in anxiety research. Studies have shown that social anxiety can act as both a predictor and a mediator in complex psychological models, linking various cognitive and behavioral factors to broader outcomes such as depression, well-being, and behavioral addictions (Zhao

et al., 2023; Zhu et al., 2025). The present findings extend this literature by demonstrating that social situation appraisal influences social anxiety through both cognitive and behavioral pathways, thereby providing a more comprehensive understanding of the underlying mechanisms.

## 5. Conclusion

Overall, the results of this study provide empirical support for an integrated model of social anxiety that incorporates social situation appraisal, safety behaviors, and social beliefs and thoughts. The findings are consistent with a wide range of theoretical and empirical studies, reinforcing the validity of cognitive-behavioral frameworks and highlighting the importance of mediating mechanisms in understanding social anxiety. This study contributes to the literature by offering a comprehensive structural model that captures the complex interplay among key variables and provides a foundation for future research and clinical applications.

## 6. Limitations & Suggestions

One limitation of the present study is the use of a cross-sectional design, which restricts the ability to draw causal inferences about the relationships among variables. Additionally, the reliance on self-report measures may introduce response biases, such as social desirability or recall bias. The sample consisted exclusively of female university students from a single institution, which may limit the generalizability of the findings to other populations, including males or individuals from different cultural or educational contexts. Furthermore, although structural equation modeling provides a robust analytical framework, the results are dependent on the specified model and may not capture all relevant variables influencing social anxiety.

Future research should employ longitudinal and experimental designs to better examine causal relationships and temporal dynamics among social situation appraisal, safety behaviors, and social anxiety. Expanding the sample to include diverse populations, including different age groups, genders, and cultural backgrounds, would enhance the generalizability of findings. Additionally, future studies could incorporate additional mediating and moderating variables, such as emotional regulation, resilience, or personality traits, to develop more comprehensive models. The use of multi-method approaches, including behavioral

observations and physiological measures, could also provide a more nuanced understanding of social anxiety processes.

From a practical perspective, the findings of this study highlight the importance of targeting both cognitive and behavioral components in interventions for social anxiety. Psychological treatments should focus on modifying maladaptive appraisals of social situations, reducing reliance on safety behaviors, and restructuring dysfunctional social beliefs. Educational and counseling programs within universities can be designed to enhance students' coping skills and resilience in social contexts. Early identification and intervention strategies may also be beneficial in preventing the progression of social anxiety and its associated impairments.

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## Declaration of Interest

The authors of this article declared no conflict of interest.

## Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

## Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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## Authors' Contributions

All authors equally contributed to this article.

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