

The double-edged sword effect of self-focused attention on social interaction abilities: The parallel mediating roles of perceived social support and fear of negative evaluation

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Abstract: The present research investigated how perceived social support and fear of negative evaluation serve as parallel mediators in the association between self-focused attention and social interaction abilities. Data were collected from 524 Chinese university students (mean age = 19.40 years, SD = 1.30), who completed the following instruments: the Self-Focused Attention Questionnaire, the Perceived Social Support Scale, the Brief Fear of Negative Evaluation Scale, and the Interpersonal Competence Questionnaire. According to regression analyses, self-focused attention not only exhibited a direct link with social interaction abilities but also showed a positive indirect pathway via perceived social support and a negative indirect pathway via fear of negative evaluation. The contrasting indirect routes are consistent with a dual-pathway framework for self-focused attention. Practically, these findings indicate that intervention efforts ought to cultivate constructive forms of self-focused attention, enhance perceived social support, and diminish apprehension regarding negative appraisal. In doing so, they may facilitate the development of better social interaction abilities among students.

Keywords: self-focused attention; social interaction abilities; perceived social support; fear of negative evaluation

Introduction

Self-focused attention and social interaction abilities

During interpersonal interactions, the way people distribute their attention to information concerning themselves relates to their social competence and adjustment. The term self-focused attention describes the cognitive mechanism through which individuals direct resources toward their inner states, overt actions, and the anticipated appraisals of others (Ingram, 1990). Based on self-awareness theory (Duval & Wicklund, 1972), such self-oriented attention entails a comparison between one's actual condition and personal standards—a process that could connect to either self-regulation or affective distress. Notably, self-focused attention is not a singular phenomenon; it can be separated into constructive and detrimental types (Ingram, 1990). The current research emphasizes trait-like dispositions of self-focused attention, acknowledging that beneficial and harmful dimensions may simultaneously exist and exhibit opposite links to social outcomes. Social interaction abilities refer to the overarching capability to realize interpersonal aims, sustain favorable relationships, and successfully adjust to social environments (Rubin & Rose-Krasnor, 1992; Tonder et al., 2023; Ismailova et al., 2025).

According to extant studies, the link of self-focused attention with social interaction abilities demonstrates complexity and subtlety. On one hand, excessive self-focus centered on evaluation shows a strong association with social anxiety, inhibited behavior, and negative emotional reactions. According to the control theory framework proposed by Carver and Scheier (1981), when people question whether they can meet what they perceive as societal expectations, self-focus contributes to an anxiety-related feedback loop. This loop then links to diminished

natural performance in social settings. Ample research confirms that this type of evaluative self-focus relates to interpersonal difficulties (Spurr & Stopa, 2002), and newer investigations have reinforced this conclusion (Silvia & Phillips, 2013; Vriends et al., 2017; Noda et al., 2022). For example, an ecological momentary assessment study revealed that self-focused attention correlated positively with rumination following social events, which in turn was tied to a recurring pattern of social anxiety (Adamis et al., 2025).

Conversely, a moderate level of self-attention, which is central to strategic self-monitoring (Snyder, 1974), might relate to improved interpersonal effectiveness because it enables behavioral adjustments based on contextual signals. Research evidence indicates that increased self-awareness correlates positively with prosocial actions (Diener & Wallbom, 1976; Lewis et al., 2021; Pfattheicher & Keller, 2015; Scheier & Carver, 1977). Furthermore, results from meta-analyses show that attentional focus predicts cooperative behavioral tendencies, and perceived social risks moderate this link (Jin et al., 2025). These divergent results suggest the link between self-focused attention and social interaction competence does not operate in a straightforward manner; instead, it functions indirectly through separate psychological mechanisms.

Perceived social support mediation

Perceived social support denotes an individual's subjective belief that one can access understanding, care, and assistance from people within their social circle whenever required. This construct highlights the anticipated availability of support instead of the support actually received (Zimet et al., 1988). In line with the Main Effect Model (Cohen & Wills, 1985), such a favorable perception acts

as an essential psychological asset that broadly fosters adaptation and positive emotional states. Previous research has consistently demonstrated significant links among perceived social support, self-concept, and interpersonal relationship quality (Chen et al., 2024; Zhang et al., 2023).

In cases where self-focused attention entails a conscious and nonjudgmental awareness of one's personal needs and internal conditions, it could link to greater initiative in social interactions and suitable self-disclosure (Jourard, 1971). Such patterns may, in turn, correspond to a heightened sense that social resources are accessible. Recent investigations have not only confirmed the essential mediating function of perceived social support in promoting adjustment but have also mapped out increasingly intricate linkages across various psychological assets (Dominguez & Brown, 2025). People who report high levels of perceived support usually feel safer and more confident during interpersonal encounters (Lakey & Orehek, 2011). Such a store of psychological assets promotes increased participation in social activities and allows for smoother as well as more proficient use of interpersonal abilities. Thus, perceived social support might serve as a resource acquisition route whereby self-focused attention positively affects one's capacity for social interaction.

Fear of negative evaluation mediation

The term fear of negative evaluation denotes an ongoing worry that one may be assessed harshly, critiqued, or dismissed by other people (Leary, 1983; Weeks et al., 2008; Weeks & Howell, 2012). According to the cognitive framework of social anxiety (Clark & Wells, 1995), this fear constitutes a core cognitive component. Research evidence has repeatedly demonstrated a robust link connecting fear of negative evaluation with social anxiety (Cheng et al., 2015; Villarosa-Hurlocker et al., 2018).

Within social contexts, heightened attention directed toward oneself relates to people forming an inaccurate and anxiety-laden self-image, along with becoming excessively preoccupied with their own perceived deficiencies. Such evaluative self-focus relates to exaggerated catastrophic predictions that others will judge one unfavorably. In an effort to cope with this apprehension, people frequently adopt safety strategies like avoiding direct eye contact or mentally rehearsing what they will say too many times (Rapee & Heimberg, 1997). These tactics impose heavy cognitive loads, disrupt the natural rhythm of interactions, and might elicit precisely the adverse reactions that individuals worry about. This pattern reflects a self-reinforcing cycle that is linked to diminished social effectiveness and skill. Providing evidence for this route, a recent investigation showed that witnessing social rejection heightens a person's own fear of negative evaluation, which subsequently predicts a rise in socially avoidant actions (Zhu et al., 2025). Thus, fear of negative evaluation plays a pivotal role as a cognitive threat mechanism, converting both external social threats and internally directed attention into deficits in social functioning.

Goals of the study

To summarize, self-focused attention constitutes a multi-dimensional cognitive phenomenon whose influence on

social interaction abilities is intricate. Existing research highlights its twofold nature, indicating that its impact operates indirectly via separate pathways that can produce contrasting outcomes.

By combining the Main Effect Model of social support (Cohen & Wills, 1985) with the Cognitive Model of social anxiety (Clark & Wells, 1995), the current investigation puts forward a parallel dual-mediation framework intended to account for the statistical relationships linking self-focused attention to social interaction abilities. First, unlike earlier work that often treated perceived social support and fear of negative evaluation as separate predictors, the present research incorporates both mediating routes into one cohesive model, thereby illustrating how self-focused attention can give rise to opposing indirect effects simultaneously. Second, this synthesis resolves inconsistent evidence in the existing literature—whereby some studies report advantages of self-focus while others point to disadvantages—by demonstrating that both positive and negative consequences can emerge in tandem via distinct mechanisms. Consequently, the dual-pathway model affords a more thorough and refined interpretation of the so-called “double-edged sword” effect than what was accessible in prior work. More precisely, we propose that self-focused attention exerts concurrent effects on social interaction capabilities via two mediating processes: (1) a resource acquisition route operating through perceived social support, where self-awareness strengthens the recognition of available resources and consequently boosts social assurance and skill; (2) a cognitive danger route operating through fear of negative evaluation, where an evaluative orientation toward the self heightens concerns about being judged, thereby fostering withdrawal and inflexible behaviors that undermine social effectiveness. Accordingly, the current study seeks to examine the subsequent hypotheses:

Hypothesis 1 (H1): Self-focused attention is positively associated with social interaction abilities.

Hypothesis 2 (H2): Perceived social support mediates the relationship between self-focused attention and social interaction abilities, demonstrating a positive indirect association.

Hypothesis 3 (H3): Fear of negative evaluation mediates the relationship between self-focused attention and social interaction abilities, demonstrating a negative indirect association.

Materials and Methods

Participants

The participants comprised a convenience sample of full-time undergraduate students from a single institution in China, all of whom were fluent in reading and understanding Chinese. This study involving humans was approved by the ethics committee of Zhejiang Agricultural Business College (IRB-ZABC-25JDSZ3156) and was conducted in accordance with the local legislation and institutional requirements. Informed consent was obtained from all individual participants included in the study. Data collection took place from December 2025, during which 550 individuals willingly enrolled in the research through

an online questionnaire system (SoJump, a Chinese platform for web-based surveys). The survey hyperlink was shared with potential respondents via various social media channels. Twenty-six cases were removed from the dataset because of incomplete responses or absent demographic details. Consequently, the analytic sample comprised 524 valid cases, which surpassed the required minimum size derived from a priori power analysis.

Regarding participant demographics, the sample consisted of 215 men (41.0%) and 309 women (59.0%). With respect to year of study, 279 individuals (53.2%) were in their first year, 158 (30.2%) were second-year students, 66 (12.6%) were in their third year, and 21 (4.0%) were fourth-year students. The average age of participants was 19.40 years ($SD = 1.30$; ages ranged from 18 to 22). No rewards or payments were given to individuals for their involvement in this research.

Measures

Self-focused attention questionnaire

For measuring self-focused attention, the Self-Focused Attention Questionnaire (Li & Lu, 2018) served as the instrument. The scale contains 21 items. Responses were collected on a 5-point Likert scale, with 1 representing “not at all characteristic” and 5 representing “extremely characteristic.” Higher summed scores indicate a stronger inclination toward self-focused attention. In the present study, the Cronbach’s alpha coefficient was 0.98.

Perceived social support scale

To evaluate perceived social support, we used the Perceived Social Support Scale (Zimet et al., 1988), which underwent revision by Jiang (2001), as cited in Yang et al. (2022). The measure comprises 12 items (for instance, a phrase regarding how certain individuals in one’s life are attentive to the respondent’s feelings). Participants rated each statement on a 7-point Likert scale (where 1 indicated “strongly disagree” and 7 indicated “strongly agree”), based on their actual life situations. A larger total score denotes a greater level of perceived social support. For the current sample, the obtained Cronbach’s alpha was 0.97.

Brief fear of negative evaluation scale

Fear of negative evaluation was measured using the Chinese adaptation of the Brief Fear of Negative Evaluation Scale, originally modified by Chen (2002). The scale includes 12 items (for example, worrying about what others might think regardless of whether their views are known to be inconsequential). Responses are recorded on a 5-point Likert scale, where 1 corresponds to “not at all characteristic” and 5 corresponds to “extremely characteristic.” Higher overall scores indicate a heightened fear of negative evaluation. For the current sample, this measure produced a Cronbach’s alpha of 0.69. Even though this reliability value is marginally below the conventional threshold of 0.70 (Nunnally, 1978), it is still deemed acceptable for research purposes, particularly when the scale contains a limited set of items. Furthermore, this finding aligns with the internal consistency estimates reported by earlier investigations that utilized the identical scale (Duke et al., 2006).

Interpersonal competence questionnaire

To assess social interaction abilities, we employed the Interpersonal Competence Questionnaire—a tool initially created by Buhrmester et al. (1988) and later adapted and validated for Chinese samples by Wang et al. (2006). This instrument comprises 35 items (for instance, expressing one’s own thoughts and suggestions in a manner that others deem acceptable). Each item is scored using a 5-point Likert scale, with 1 meaning “not at all characteristic” and 5 meaning “extremely characteristic.” Greater total scores reflect more effective social interaction abilities. For the present sample, the Cronbach’s alpha coefficient was 0.99.

Data analysis

All statistical procedures were performed with SPSS version 26.0 (IBM Corp., Armonk, NY, USA). Preliminary analyses consisted of bivariate correlations designed to evaluate the relationships among the key variables. For testing the hypothesized parallel mediation framework, Model 4 from the PROCESS macro for SPSS (Version 4.1; Hayes, 2022) was utilized. Bootstrapping methods involving 5000 resamples were employed to assess the significance of indirect pathways, which yielded 95% bias-corrected confidence intervals (Bollen & Stine, 1990). Statistical significance was defined as a p -value less than 0.05.

Results

Common method bias test

Harman’s single-factor test served as the primary method for evaluating common method bias (Podsakoff et al., 2003; Zhou & Long, 2004). We conducted an exploratory factor analysis encompassing all items drawn from the four scales. The analysis yielded eight factors whose eigenvalues surpassed 1.0, while the first factor explained 37.26% of the overall variance—a figure well under the 40% cutoff. Accordingly, common method bias does not pose a problem in this research.

Descriptive statistics

According to the correlational findings presented in Table 1, self-focused attention displayed a significant positive link with perceived social support ($r = 0.68, p < 0.01$), fear of negative evaluation ($r = 0.77, p < 0.01$), and social interaction abilities ($r = 0.70, p < 0.01$). In addition, perceived social support was positively correlated with both fear of negative evaluation ($r = 0.47, p < 0.01$) and social interaction abilities ($r = 0.82, p < 0.01$). Furthermore, a noteworthy positive association was observed between fear of negative evaluation and social interaction abilities ($r = 0.42, p < 0.01$).

Owing to the strong intercorrelations among variables seen in Table 1, a confirmatory factor analysis (CFA) was performed using AMOS 26.0 to evaluate whether the four latent constructs—namely, self-focused attention, perceived social support, fear of negative evaluation, and social interaction abilities—were empirically distinct. The proposed four-factor solution was contrasted with various alternative structures (including three-factor, two-factor, and single-factor models). Results indicated that the four-factor model yielded acceptable goodness-of-fit indices:

Table 1. Means, standard deviations, and correlations among the variables

Variables	M	SD	1	2	3	4
1 Self-focused attention	2.99	1.02	1			
2 Perceived social support	4.32	1.51	0.68**	1		
3 Fear of negative evaluation	3.07	0.57	0.77**	0.47**	1	
4 Social interaction abilities	2.93	1.03	0.70**	0.82**	0.42**	1

Note. $N = 524$. ** $p < 0.01$.

$\chi^2/df = 2.89$, CFI = 0.92, TLI = 0.91, RMSEA = 0.07, SRMR = 0.06. This model fitted the data substantially better than any of the alternative models (all $\Delta\chi^2 p < 0.001$), thereby affirming the discriminant validity of the four measures.

Parallel mediating roles of perceived social support and fear of negative evaluation

To examine how perceived social support and fear of negative evaluation function as parallel mediators in the relationship connecting self-focused attention with social interaction abilities, the present research applied Model 4 from Hayes's (2022) PROCESS macro for SPSS. Potential multicollinearity among predictors in the regression models was evaluated. For every predictor across all models, Variance Inflation Factor (VIF) values ranged from 1.00 to 3.54, whereas tolerance values ranged between 0.28 and 0.99. These figures fall comfortably within generally accepted thresholds (VIF < 5, tolerance > 0.20; Hair et al., 2010). Thus, multicollinearity does not represent a serious concern in this study.

Regression outcomes showed that self-focused attention significantly and positively predicted both perceived social support ($\beta = 0.67$, $p < 0.001$) and fear of negative evaluation ($\beta = 0.77$, $p < 0.001$). Furthermore, self-focused attention exerted a direct positive effect on social interaction abilities ($\beta = 0.43$, $p < 0.001$). Perceived social support emerged as a positive predictor of social interaction abilities ($\beta = 0.62$, $p < 0.001$), whereas fear of negative evaluation was a negative predictor ($\beta = -0.20$, $p < 0.001$) (see Figure 1). As presented in Tables 2 and 3, the bootstrapped 95% confidence intervals for the two indirect pathways excluded zero, indicating significant parallel mediation. The specific indirect effect transmitted via perceived social support equaled 0.42, while that via fear of negative evaluation equaled -0.16 . These two routes operated in opposing directions, revealing an opposing-effects pattern that underlies the influence of self-focused attention on social interaction abilities. The relative indirect effects for the perceived social support pathway and the fear of negative evaluation pathway were 97.76% and 36.06%, respectively (Wen & Ye, 2014).

Discussion

This research draws upon the main effect model of social support (Cohen & Wills, 1985) alongside the cognitive model of social anxiety (Clark & Wells, 1995) to explore how self-focused attention relates to social interaction abilities among university students. Statistical pathways are delineated whereby self-focused attention affects such competencies through perceived social support and fear

of negative evaluation. These findings carry noteworthy theoretical and applied implications for improving social interaction abilities.

The direct effect of self-focused attention and the positive mediating role of perceived social support

Findings from the analysis reveal a direct positive relationship between self-focused attention and social interaction abilities. Moreover, a notable positive indirect pathway operates through perceived social support. These outcomes lend support to Hypotheses H1 and H2, implying that an intermediate level of self-focused attention might correspond to an elevated sense of available social resources. Such enhanced perception could, in turn, relate to improved social assurance and capability. From a theoretical standpoint, this pathway corresponds to the view within self-regulation theory (Carver & Scheier, 1981) that self-directed attention promotes behavioral regulation. It also agrees with the assertion from self-monitoring theory (Snyder, 1974) that attending to oneself assists in adapting to different situations. When individuals focus their cognitive resources on inner experiences and personal needs, they may engage in self-disclosure and social interactions more often (Jourard, 1971). This tendency can strengthen their belief that social resources are available to them (Zimet et al., 1988). Higher levels of perceived support then provide people with emotional safety and relational confidence (Lakey & Orehek, 2011; Man & Jing, 2025), thereby enabling effective use of interpersonal skills and the creation of social bonds (Chen et al., 2024; Zhang et al., 2023). More specifically, empirical work shows that being attentive to one's internal experiences improves emotional clarity, which in turn supports social adjustment (Gohm & Clore, 2002). Concurrently, the perception of supportive resources serves to reduce stress effectively and to promote actions that benefit others (Taylor, 2011). Newer evidence suggests that reflective self-focus fosters closeness and supportive exchanges in interpersonal relationships (Dominguez & Brown, 2025), thereby reinforcing the bridging function of the "resource gain pathway" linking self-attention to social competence. Moreover, directing self-focused attention toward personal strengths appears to improve social adjustment through the enhancement of psychological capital (Luthans et al., 2015). The net positive association observed in this study may reflect the predominant influence of adaptive self-focus within our sample, or the counterbalancing of opposing effects through parallel mediation pathways. Future research should differentiate between adaptive and maladaptive self-focused attention to better understand their distinct contributions to social abilities.

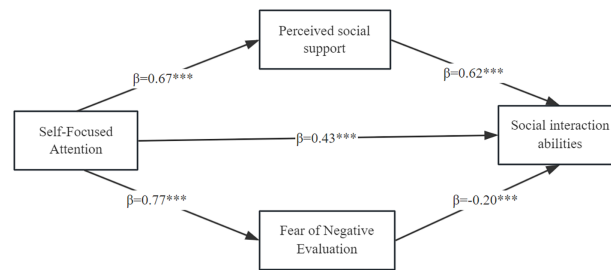


Figure 1. Diagram of the parallel mediation model. *Note.* *** $p < 0.001$.

Table 2. Concise summary derived from multiple regression analyses pertaining to the parallel mediation model

Variables	Model 1					Model 2					Model 3				
	<i>B</i>	95% CI	<i>SEB</i>	β	<i>t</i>	<i>B</i>	95% CI	<i>SEB</i>	β	<i>t</i>	<i>B</i>	95% CI	<i>SEB</i>	β	<i>t</i>
Constant	1.34	[1.05, 1.64]	0.15		8.92***	1.79	[1.69, 1.88]	0.05		36.61***	0.91	[0.63, 1.20]	0.14		6.34***
Self-focused attention	1.00	[0.90, 1.09]	0.05	0.67	20.88***	0.43	[0.40, 0.46]	0.02	0.77	27.65***	0.43	[0.35, 0.52]	0.04	0.43	9.89***
Perceived social support											0.43	[0.38, 0.47]	0.02	0.62	19.92***
Fear of negative evaluation											-0.37	[-0.50, -0.24]	0.07	-0.20	-5.55***
Model summary	$R^2 = 0.46$, $F_{(1,522)} = 435.78$, $p < 0.001$.					$R^2 = 0.59$, $F_{(1,522)} = 764.62$, $p < 0.001$.					$R^2 = 0.73$, $F_{(3,520)} = 458.71$, $p < 0.001$.				

Note. $N = 524$. Model 1: predictor variable: Self-Focused Attention; outcome variable: Perceived social support. Model 2: predictor variable: Self-Focused Attention; outcome variable: Fear of Negative Evaluation. Model 3: predictor variables: Self-Focused Attention, Perceived social support, and Fear of Negative Evaluation; outcome variable: Social interaction abilities. The relative indirect effect is calculated as the absolute value of “indirect path effect/direct effect”. *** $p < 0.001$.

Table 3. Bootstrapping indirect effects and 95% CI for parallel mediation model

Model pathway	Effect	Boot SE	95% CI	
			Lower	Upper
Path 1 Self-Focused Attention→Perceived social support→Social interaction abilities	0.4243	0.0313	0.3637	0.4856
Path 2 Self-Focused Attention→Fear of Negative Evaluation→Social interaction abilities	-0.1565	0.0426	-0.2423	-0.0747
Total indirect effect	0.2678	0.0545	0.1604	0.3698

Note. $N = 524$. CI, Confidence interval; 5000 bootstrap samples with 95% CI.

The negative mediating role of fear of negative evaluation

In line with Hypothesis H3, self-focused attention exhibited a notable negative indirect pathway to social interaction abilities via fear of negative evaluation. This outcome implies that when self-attention is coupled with worry and concern about being judged by others, individuals may enter what is termed “evaluative self-focus” (Rimes & Watkins, 2005). Such a state relates to social withdrawal, safety-seeking actions, and inflexibility during interactions (Rapee & Heimberg, 1997), which in turn may lead to reduced interpersonal effectiveness. This route aligns with the cognitive model of social anxiety (Clark & Wells, 1995), which proposes that heightened self-focus amplifies the expectation of unfavorable appraisal, thereby establishing a “cognitive threat pathway.” Considerable research has confirmed that fear of negative evaluation stands as a central aspect of social anxiety, directly resulting in avoidance tendencies and compromised social functioning (Heimberg et al., 2014; Weeks et al., 2008). Additionally, studies indicate

that witnessing social rejection can intensify an individual’s fear of negative evaluation, which then predicts later social avoidance (Zhu et al., 2025). This finding further highlights the dynamic, self-reinforcing character of this pathway within social settings. Consequently, whether self-focused attention leads to adverse outcomes hinges on its capacity to provoke evaluation-related fears and the subsequent cognitive-behavioral reactions (Spurr & Stopa, 2002). Neuroscience research provides supporting evidence, indicating that heightened neural sensitivity to social evaluative threat increases avoidance tendencies in social situations (Evans et al., 2023).

The dual pathways of self-focused attention

The observation that self-focused attention relates both to elevated perceived social support and to increased fear of negative evaluation underscores the multifaceted character of this construct. Adaptive self-focused attention—marked by a mindful, non-judgmental awareness of one’s inner experiences—promotes accurate self-understanding, emotional clarity, and appropriate self-disclosure. These outcomes, in turn, are linked

to stronger perceived social support (Gohm & Clore, 2002; Jourard, 1971). In contrast, maladaptive self-focused attention—characterized by evaluative, ruminative, and threat-oriented self-monitoring—is tied to intensified worries about being judged by others, which subsequently correlate with safety behaviors and social withdrawal (Rapee & Heimberg, 1997). These two forms of self-focus are not mutually exclusive. Which variant becomes operative depends partly on an individual's dispositional tendency and partly on the social setting. A person may display both inclinations to differing extents according to contextual demands, personality characteristics, or situational pressures. Hence, self-focused attention is not intrinsically beneficial or detrimental; rather, its links to social abilities hinge upon which type of self-focus is engaged. The parallel mediation model employed in this research captures this duality by revealing that self-focused attention, assessed as a trait-like disposition, concurrently exhibits a positive indirect pathway via perceived social support and a negative indirect pathway via fear of negative evaluation. The overall association with social abilities reflects the relative magnitudes of these opposing routes.

In response to these two opposing pathways, the current study proposes a “dual-path parallel mediation model,” which merges the resource-based view of social support with the threat-oriented perspective of social anxiety. This integration illuminates how self-focused attention exerts counteracting influences on social competence. The resulting framework deepens our grasp of the “double-edged sword” nature of self-attention (Ingram, 1990) and offers a theoretical basis for exploring links among self-regulation, social cognition, and interpersonal behavior. Moreover, the results carry practical relevance for interventions aimed at Chinese university students, especially newcomers adjusting to unfamiliar campus settings. One strategy emphasizes enhancing the resource-gain pathway. Practitioners may deliver programs designed to boost perceived social support—for instance, gratitude journaling (Wood et al., 2008), social network mapping (Antonucci et al., 2010), or peer-support groups (Pfeiffer et al., 2011). Freshman orientation weeks present an ideal occasion for such activities. Drawing on the main effect model of social support (Cohen & Wills, 1985), these programs are anticipated to elevate individuals' sense of available resources. A second set of strategies addresses the cognitive threat pathway. Cognitive-behavioral techniques that target fear of negative evaluation can be implemented, including video feedback to rectify inaccurate self-images (Rapee & Hayman, 1996; Wild et al., 2023), behavioral experiments to challenge pessimistic predictions (Clark & Wells, 1995; Leigh et al. 2022; Leigh & Clark, 2023; Clark et al., 2022), and attention training to curtail self-monitoring (Wells, 1990; Tomita et al., 2024). For first-year students, embedding these techniques into introductory seminar courses may help destigmatize conversations about social anxiety. A complementary strategy utilizes mindfulness oriented interventions, which cultivate adaptive forms of self-focused attention such as nonjudgmental self-observation while simultaneously reducing evaluative self-focus. These interventions have

been shown to be effective in enhancing emotion regulation and social attunement (Tan et al., 2014; Jazaieri et al., 2015; Noda et al., 2022; Alvarado-García et al., 2025). Brief mindfulness exercises can be woven into peer-mentoring programs or dormitory-based wellness activities tailored for freshmen. By concurrently tackling both the positive and negative pathways and customizing approaches to the transitional phase, such interventions may avert the emergence of maladaptive self-focus and social anxiety during the pivotal first year of university.

Limitations and future directions

Despite clarifying the dual mechanisms linking self-focused attention to social competence, the present investigation has several shortcomings. The cross-sectional nature of the data prevents any causal conclusions. While the observed associations align with our proposed mediation framework, alternative explanatory models remain possible. For instance, people who possess stronger interpersonal skills might receive more support and consequently cultivate an adaptive form of self-focus. To establish temporal ordering, subsequent studies should adopt longitudinal or experimental approaches. A further concern pertains to the sample. All participants came from a convenience sample of Chinese university students, with first-year students representing more than half of the group. Freshmen undergo a crucial transitional phase, during which their social abilities and perceived support depend heavily on contextual factors. These features restrict the applicability of our results to senior undergraduates, non-academic populations, different cultural settings, and clinical groups. Therefore, cross-cultural validation and samples with greater diversity are required. These should encompass individuals from different academic years, various universities, and adults living in the community. Regarding measurement, the three instruments yielded exceptionally high Cronbach's alpha coefficients, suggesting potential item redundancy. Although this may partly stem from the length of the scales, later research ought to explore abbreviated versions or item-reduction strategies such as confirmatory factor analysis. The comparatively lower alpha coefficient for the fear of negative evaluation measure suggests that findings concerning this variable should be treated with prudence; future work could benefit from employing alternative or refined editions of this scale. Finally, additional moderator variables should be incorporated into the model to enhance its precision and to explore its boundary conditions as well as potential applications in intervention contexts.

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Availability of Data and Materials: The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics Approval: This study involving humans was approved by the ethics committee of Zhejiang Agricultural Business College (IRB-ZABC-25JDSZ3156) and was conducted in accordance with the local legislation and institutional requirements. Informed consent was obtained from all individual participants included in the study.

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References

- Adamis, A. M., Walske, S., & Olatunji, B. O. (2025). Attention mechanisms of social anxiety in daily life: Unique effects of negative self-focused attention on post-event processing. *Behaviour Research and Therapy*, 191, 104759. <https://doi.org/10.1016/j.brat.2025.104759>
- Alvarado-García, P. A. A., Soto-Vásquez, M. R., Infantes Gomez, F. M., Guzman Rodriguez, N. M., & Castro-Paniagua, W. G. (2025). Effect of a mindfulness program on stress, anxiety, depression, sleep quality, social support, and life satisfaction: A quasi-experimental study in college students. *Frontiers in Psychology*, 16, 1508934. <https://doi.org/10.3389/fpsyg.2025.1508934>
- Antonucci, T. C., Fiori, K. L., Birditt, K., & Jackey, L. M. H. (2010). Convoys of social relations: Integrating life-span and life-course perspectives. In: Lamb, M. E., Freund, A. M., & Lerner, R. M. (Eds.), *The handbook of life-span development* (pp. 434–473). Hoboken, NJ, USA: John Wiley & Sons, Inc. <https://doi.org/10.1002/9780470880166.hlsd002012>
- Bollen, K. A., & Stine, R. (1990). Direct and indirect effects: Classical and bootstrap estimates of variability. *Sociological Methodology*, 20(1), 115–140. <https://doi.org/10.2307/271084>
- Buhrmester, D., Furman, W., Wittenberg, M. T., & Reis, H. T. (1988). Five domains of interpersonal competence in peer relationships. *Journal of Personality and Social Psychology*, 55(6), 991–1008. <https://doi.org/10.1037//0022-3514.55.6.991>
- Carver, C. S., & Scheier, M. F. (1981). *Attention and Self-Regulation: A Control-Theory Approach to Human Behavior*. New York, NY, USA: Springer.
- Chen, Z. Y. (2002). Fear of negative evaluation and test anxiety in middle school students. *Chinese Mental Health Journal*, 16(12), 855–857. <https://doi.org/10.3321/j.issn:1000-6729.2002.12.020>
- Chen, X., Wen, R., & Chen, C. X. (2024). The influence of self-concept and perceived social support on the interpersonal relationship of social corrections personnel. *Advances in Psychology*, 14(4), 391–399. <https://doi.org/10.12677/ap.2024.144233>
- Cheng, G., Zhang, D., & Ding, F. (2015). Self-esteem and fear of negative evaluation as mediators between family socioeconomic status and social anxiety in Chinese emerging adults. *International Journal of Social Psychiatry*, 61(6), 569–576. <https://doi.org/10.1177/0020764014565405>
- Clark, D. M., & Wells, A. (1995). A cognitive model of social phobia. In: Heimberg, R. G., Liebowitz, M. R., Hope, D. A., & Schneier, F. R. (Eds.), *Social phobia: Diagnosis, assessment, and treatment* (pp. 69–93). New York, NY, USA: The Guilford Press.
- Clark, D. M., Wild, J., Warnock-Parkes, E., Stott, R., Grey, N., et al. (2022). More than doubling the clinical benefit of each hour of therapist time: A randomised controlled trial of internet cognitive therapy for social anxiety disorder. *Psychological Medicine*, 53(11), 5022–5032. <https://doi.org/10.1017/S0033291722002008>
- Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98(2), 310–357. <https://doi.org/10.1037/0033-2909.98.2.310>
- Diener, E., & Wallbom, M. (1976). Effects of self-awareness on antinormative behavior. *Journal of Research in Personality*, 10(1), 107–111. [https://doi.org/10.1016/0092-6566\(76\)90088-X](https://doi.org/10.1016/0092-6566(76)90088-X)
- Dominguez, M. G., & Brown, L. D. (2025). Exploring pathways to recovery and psychological well-being: Examining the role of empathic and social self-efficacy, social support and social isolation. *Frontiers in Psychology*, 16, 1552827. <https://doi.org/10.3389/fpsyg.2025.1552827>
- Duke, D., Krishnan, M., Faith, M., & Storch, E. A. (2006). The psychometric properties of the brief fear of negative evaluation scale. *Journal of Anxiety Disorders*, 20(6), 807–817. <https://doi.org/10.1016/j.janxdis.2005.11.002>
- Duval, S., & Wicklund, R. A. (1972). *A Theory of Objective Self-Awareness*. New York, NY, USA: Academic Press.
- Evans, T. C., Esterman, M., & Britton, J. C. (2023). Social avoidance behavior modulates motivational responses to social reward-threat conflict signals: A preliminary fMRI study. *Cognitive, Affective & Behavioral Neuroscience*, 23(1), 42–65. <https://doi.org/10.3758/s13415-022-01031-x>
- Gohm, C. L., & Clore, G. L. (2002). Four latent traits of emotional experience and their involvement in well-being, coping, and attributional style. *Cognition and Emotion*, 16(4), 495–518. <https://doi.org/10.1080/02699930143000374>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis*. 7th ed. Upper Saddle River, NY, USA: Prentice Hall.
- Hayes, A. F. (2022). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. 3rd ed. New York, NY, USA: The Guilford Press.
- Heimberg, R. C., Brozovich, F. A., & Rapee, R. M. (2014). A cognitive-behavioral model of social anxiety disorder. In: Hofmann, S. G., & DiBartolo, P. M. (Eds.), *Social anxiety: Clinical, developmental, and social perspectives* (3rd ed., pp. 705–728). London, UK: Academic Press.
- Ingram, R. E. (1990). Self-focused attention in clinical disorders: Review and a conceptual model. *Psychological Bulletin*, 107(2), 156–176. <https://doi.org/10.1037/0033-2909.107.2.156>
- Ismailova, A., Naubayeva, K., Zheldibayeva, R., & Kontrimienė, S. (2025). Self-esteem, social comparison, and interpersonal communication competence as predictors of students' psychological well-being. *Frontiers in Education*, 10, 1679209. <https://doi.org/10.3389/feduc.2025.1679209>
- Jazaieri, H., Morrison, A. S., Goldin, P. R., & Gross, J. J. (2015). The role of emotion and emotion regulation in

- social anxiety disorder. *Current Psychiatry Reports*, 17(1), 531. <https://doi.org/10.1007/s11920-014-0531-3>
- Jiang, Q. J. (2001). Perceived the social support scale. *Chinese Behavioral Medicine Science*, 10(10), 41–43. https://doi.org/10.1207/s15327752jpa5201_2
- Jin, Y., Gu, R., Feng, C., Zhang, C., & Zhou, Y. (2025). Cooperation patterns in depression: Insights from a meta-analysis of responsive and expressive social interactive paradigms. *Clinical Psychology Review*, 120, 102624. <https://doi.org/10.1016/j.cpr.2025.102624>
- Jourard, S. M. (1971). *The Transparent Self*. 2nd ed. New York, NY, USA: Van Nostrand Reinhold.
- Lahey, B., & Orehek, E. (2011). Relational regulation theory: A new approach to explain the link between perceived social support and mental health. *Psychological Review*, 118(3), 482–495. <https://doi.org/10.1037/a0023477>
- Leary, M. R. (1983). A brief version of the fear of negative evaluation scale. *Personality and Social Psychology Bulletin*, 9(3), 371–375. <https://doi.org/10.1177/0146167283093007>
- Leigh, E., Chiu, K., & Clark, D. M. (2022). Cognitive and behavioural processes in adolescents with social anxiety disorder. *Behaviour Research and Therapy*, 149, 104015. <https://doi.org/10.1016/j.brat.2021.104015>
- Leigh, E., & Clark, D. M. (2023). Internet-delivered therapist-assisted cognitive therapy for adolescent social anxiety disorder (OSCA): A randomised controlled trial addressing preliminary efficacy and mechanisms of action. *Journal of Child Psychology and Psychiatry*, 64, 145–155. <https://doi.org/10.1111/jcpp.13680>
- Lewis, J. A., Himmelberger, Z. M., & Elmore, J. D. (2021). I can see myself helping: The effect of self-awareness on prosocial behaviour. *International Journal of Psychology*, 56(5), 710–715. <https://doi.org/10.1002/ijop.12733>
- Li, Y., & Lu, G. Z. (2018). Development of the college students' self-focused attention questionnaire. *Psychology: Techniques and Applications*, 6(4), 225–231. <https://doi.org/10.16842/j.cnki.issn2095-5588.2018.04.005>
- Luthans, F., Youssef-Morgan, C. M., & Avolio, B. J. (2015). *Psychological Capital and Beyond*. Oxford, UK: Oxford University Press.
- Man, X., & Jing, Z. (2025). The role of prosocial tendencies in the relationships between gratitude, perceived social support, and psychological well-being among Chinese university students: A structural equation modeling approach. *Frontiers in Psychology*, 16, 1510543. <https://doi.org/10.3389/fpsyg.2025.1510543>
- Noda, S., Shiotsuki, K., & Sasagawa, S. (2022). Self-focused attention, cost/probability bias, and avoidance behavior mediate the relationship between trait mindfulness and social anxiety: A cross-sectional study. *Frontiers in Psychology*, 13, 942801. <https://doi.org/10.3389/fpsyg.2022.942801>
- Nunnally, J. C. (1978). *Psychometric Theory*. 2nd ed. New York, NY, USA: McGraw-Hill.
- Pfattheicher, S., & Keller, J. (2015). The watching eyes phenomenon: The role of a sense of being seen and public self-awareness. *European Journal of Social Psychology*, 45(5), 560–566. <https://doi.org/10.1002/ejsp.2122>
- Pfeiffer, P. N., Heisler, M., Piette, J. D., Rogers, M. A., & Valenstein, M. (2011). Efficacy of peer support interventions for depression: A meta-analysis. *General Hospital Psychiatry*, 33(1), 29–36. <https://doi.org/10.1016/j.genhosppsych.2010.10.002>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>
- Rapee, R. M., & Hayman, K. (1996). The effects of video feedback on the self-evaluation of performance in socially anxious subjects. *Behaviour Research and Therapy*, 34(4), 315–322. [https://doi.org/10.1016/0005-7967\(96\)00003-4](https://doi.org/10.1016/0005-7967(96)00003-4)
- Rapee, R. M., & Heimberg, R. G. (1997). A cognitive-behavioral model of anxiety in social phobia. *Behaviour Research and Therapy*, 35(8), 741–756. [https://doi.org/10.1016/S0005-7967\(97\)00022-3](https://doi.org/10.1016/S0005-7967(97)00022-3)
- Rimes, K. A., & Watkins, E. (2005). The effects of self-focused rumination on global negative self-judgements in depression. *Behaviour Research and Therapy*, 43(12), 1673–1681. <https://doi.org/10.1016/j.brat.2004.12.002>
- Rubin, K. H., & Rose-Krasnor, L. (1992). Interpersonal problem-solving and social interaction abilities in children. In: Van Hasselt, V. B., & Hersen, M. (Eds.), *Handbook of social development: A lifespan perspective* (pp. 283–323). Plenum Press.
- Scheier, M. F., & Carver, C. S. (1977). Self-focused attention and the experience of emotion: Attraction, repulsion, elation, and depression. *Journal of Personality and Social Psychology*, 35(9), 625–636. <https://doi.org/10.1037/0022-3514.35.9.625>
- Silvia, P. J., & Phillips, A. G. (2013). Self-awareness without awareness? Implicit self-focused attention and behavioral self-regulation. *Self and Identity*, 12(2), 114–127. <https://doi.org/10.1080/15298868.2011.639550>
- Snyder, M. (1974). Self-monitoring of expressive behavior. *Journal of Personality and Social Psychology*, 30(4), 526–537. <https://doi.org/10.1037/h0037039>
- Spurr, J. M., & Stopa, L. (2002). Self-focused attention in social phobia and social anxiety. *Clinical Psychology Review*, 22(7), 947–975. [https://doi.org/10.1016/s0272-7358\(02\)00107-1](https://doi.org/10.1016/s0272-7358(02)00107-1)
- Tan, L. B. G., Lo, B. C. Y., & Macrae, C. N. (2014). Brief mindfulness meditation improves mental state attribution and empathizing. *PLoS One*, 9(10), e110510. <https://doi.org/10.1371/journal.pone.0110510>
- Taylor, S. E. (2011). Social support: A review. In: Friedman, H. S. (Ed.), *The Oxford handbook of health psychology* (pp. 189–214). Oxford, UK: Oxford University Press.
- Tomita, N., Katayama, H., Kurihara, Y., Takahashi, T., Shibata, S., et al. (2024). Tackling social anxiety with targeted brain stimulation: Investigating the effects of transcranial static magnetic field stimulation on self-focused attention. *Frontiers in Behavioral Neuroscience*, 18, 1373564. <https://doi.org/10.3389/fnbeh.2024.1373564>
- Tonder, J. I. V., Jordaan, J., & Esterhuysen, K. (2023). Self-esteem, interpersonal communication competence, and media and technology usage as predictors of loneliness among university students. *Sage Open*, 13(1), 227. <https://doi.org/10.1177/21582440221148379>
- Villarsa-Hurlocker, M. C., Whitley, R. B., Capron, D. W., & Madson, M. B. (2018). Thinking while drinking: Fear of negative evaluation predicts drinking behaviors of students with social anxiety. *Addictive Behaviors*, 78, 160–165. <https://doi.org/10.1016/j.addbeh.2017.10.021>
- Vriends, N., Meral, Y., Bargas-Avila, J. A., Stadler, C., & Bögels, S. M. (2017). How do I look? Self-focused attention during a video chat of women with social anxiety (disorder). *Behaviour Research and Therapy*, 92, 77–86. <https://doi.org/10.1016/j.brat.2017.02.008>
- Wang, Y. C., Zou, H., & Qu, Z. Y. (2006). The revision of interpersonal competence questionnaire in middle school

- students. *Chinese Mental Health Journal*, 20(5), 306–308. <https://doi.org/10.3321/j.issn:1000-6729.2006.05.009>
- Weeks, J. W., Heimberg, R. G., & Rodebaugh, T. L. (2008). The fear of positive evaluation scale: Assessing a proposed cognitive component of social anxiety. *Journal of Anxiety Disorders*, 22(1), 44–55. <https://doi.org/10.1016/j.janxdis.2007.08.002>
- Weeks, J. W., & Howell, A. N. (2012). The bivalent fear of evaluation model of social anxiety: Further integrating findings on fears of positive and negative evaluation. *Cognitive Behaviour Therapy*, 41(2), 83–95. <https://doi.org/10.1080/16506073.2012.661452>
- Wells, A. (1990). Panic disorder in association with relaxation induced anxiety: An attentional training approach to treatment. *Behavior Therapy*, 21(3), 273–280. [https://doi.org/10.1016/S0005-7894\(05\)80330-2](https://doi.org/10.1016/S0005-7894(05)80330-2)
- Wen, Z. L., & Ye, B. J. (2014). Analyses of mediating effects: The development of methods and models. *Advances in Psychological Science*, 22(5), 731–745. <https://doi.org/10.3724/SP.J.1042.2014.00731>
- Wild, J., Warnock-Parkes, E., Stott, R., Kwok, A. P. L., Lissillour Chan, M. H., Powell, C. L. Y. M., Leung, P. W. L., Clark, D. M., & Thew, G. R. (2023). Video feedback to update negative self-perceptions in social anxiety disorder: A comparison of internet-delivered vs face-to-face cognitive therapy formats. *Journal of Affective Disorders*, 331, 139–144. <https://doi.org/10.1016/j.jad.2023.03.017>
- Wood, A. M., Maltby, J., Gillett, R., Linley, P. A., & Joseph, S. (2008). The role of gratitude in the development of social support, stress, and depression: Two longitudinal studies. *Journal of Research in Personality*, 42(4), 854–871. <https://doi.org/10.1016/j.jrp.2007.11.003>
- Yang, Z., Zhang, J. W., Tan, Y., & Liu, L. S. (2022). The influence of mobile phone dependency on university students' study engagement: The chain intermediary role of social support and delay of gratification. *Journal of Southwest University (Natural Science Edition)*, 44(2), 178–184. <https://doi.org/10.13718/j.cnki.xdzk.2022.02.021>
- Zhang, Y., Liu, J. Y., Jiang, Y. Y., Zheng, L. G., & Peng, Y. (2023). Relationship between interpersonal problems and depression in higher vocational students: A chain mediating effect of general self-efficacy and perceived social support. *China Journal of Health Psychology*, 31(6), 942–948. <https://doi.org/10.13342/j.cnki.cjhp.2023.06.028>
- Zhou, H., & Long, L. R. (2004). Statistical remedies for common method biases. *Advances in Psychological Science*, 12(6), 942–950. <https://doi.org/10.3969/j.issn.1671-3710.2004.06.018>
- Zhu, Y., Yan, Y., & Zhang, D. (2025). The effects of observed ostracism on social avoidance: The role of fear of negative evaluation and rumination. *Personality and Individual Differences*, 238, 113080. <https://doi.org/10.1016/j.paid.2025.113080>
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52(1), 30–41. https://doi.org/10.1207/s15327752jpa5201_2