

Mindfulness as a Mediator Between Neurotic Perfectionism, Fear of Negative Evaluation, and Competitive State Anxiety in Anxious Adolescent Athletes

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Article Info

Article type:
Research Article

Article history:
Received 05 October 2025
Received in revised form 04 December 2025
Accepted 21 December 2026
Available online 21 March 2026

Keywords:
Mindfulness, Neurotic Perfectionism, Fear of Negative Evaluation, Competitive state anxiety, Adolescent Athletes.

ABSTRACT

Objective: The present study aimed to examine the mediating role of mindfulness in the relationship between neurotic perfectionism, fear of negative evaluation, and competitive state anxiety in anxious adolescent athletes.

Methods: This research employed a descriptive–correlational design using path analysis. The statistical population consisted of adolescent athletes aged 15 to 18 in Meybod, Iran, from which 305 participants were voluntarily selected based on inclusion and exclusion criteria. The research instruments included the Competitive State Anxiety Inventory-2, the Neurotic Perfectionism Questionnaire, the Fear of Negative Evaluation Scale, and the Mindfulness Questionnaire.

Results: The results indicated that neurotic perfectionism did not show a significant direct relationship with competitive state anxiety; however, it indirectly predicted higher competitive state anxiety through mindfulness. Fear of negative evaluation directly and indirectly through mindfulness predicted competitive state anxiety. Furthermore, mindfulness was found to be negatively and significantly associated with competitive state anxiety.

Conclusion: These findings highlight the protective role of mindfulness against the adverse effects of neurotic perfectionism and fear of negative evaluation, suggesting its potential as a moderating mechanism for anxiety in adolescent athletes. From an applied perspective, mindfulness-based training programs could be implemented as effective strategies to reduce competitive state anxiety and improve athletic performance.

Cite this article: Rezapour Mirsaleh, Y., Emami, F. Mindfulness as a Mediator Between Neurotic Perfectionism, Fear of Negative Evaluation, and Competitive State Anxiety in Anxious Adolescent Athletes. *Functional Research in Sport Psychology*, 2026;3(1):71-89. [10.22091/frs.2025.14096.1117](https://doi.org/10.22091/frs.2025.14096.1117)



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Publisher: University of Qom.

DOI: [10.22091/frs.2025.14096.1117](https://doi.org/10.22091/frs.2025.14096.1117)

Introduction

Adolescence is one of the most sensitive stages of life, a period during which individuals strive to form their identity, gain independence, and strengthen social skills (1). Sports, as one of the key activities in this stage, can have numerous positive effects, including improving physical and mental health, reducing anxiety and depression, and enhancing self-esteem and self-confidence (2). Moreover, adolescents' participation in team sports helps foster their social skills and group interaction (3).

Despite these benefits, professional sports may also be accompanied by considerable psychological pressures—particularly when expectations from coaches, families, and schools are excessively high. Such pressures may increase anxiety among adolescents and, consequently, affect their mental health (4). Additionally, the risk of physical injuries in professional sports can further contribute to stress and anxiety. In competitive environments, when athletes feel unable to meet expectations or fear social rejection in case of failure, performance anxiety tends to intensify (5).

Anxiety is defined as an emotional response characterized by tension, worry-related thoughts, and physiological changes (6). Competitive state anxiety is conceptualized as a transient emotional response to competitive sport situations, comprising both cognitive and somatic components. Within

the context of competitive state anxiety, two major components are usually identified: somatic anxiety (physical reactions) and cognitive anxiety (worrying thoughts, negative mental imagery). Specifically, cognitive anxiety in competitive settings includes concerns about performance, fear of failure, and negative self-evaluations (7). Cognitive anxiety is defined as the mental component of state anxiety, involving negative expectations about performance, worry, and concerns about failure or negative social evaluation (7). In adolescent sports, competitive state anxiety may arise from various factors such as competitive pressure, perfectionism, fear of injury, or social judgment (8).

One variable that has received attention in relation to competitive state anxiety is neurotic perfectionism (9). Perfectionism refers to the tendency to set extremely high standards and strive for flawless performance. While certain aspects of perfectionism may foster motivation and achievement, maladaptive or neurotic perfectionism occurs when individuals become excessively preoccupied with mistakes and tie their self-worth to flawless performance (9). Neurotic Perfectionism conceptualized as a maladaptive form of perfectionism characterized by setting excessively high personal standards, preoccupation with mistakes, harsh self-criticism, and linking self-worth to flawless performance (9). Athletes with neurotic perfectionism are likely to engage in

cognitive distortions, persistent self-criticism, and heightened performance anxiety (10). Previous studies have reported a positive association between neurotic perfectionism and anxiety (11-13). In turn, competitive state anxiety may negatively affect sports performance through impaired concentration and negative self-evaluations (10).

In addition to perfectionism, fear of negative evaluation is another potential factor influencing competitive state anxiety. This fear refers to individuals' concerns about how others will judge their performance (14). Avoidance of evaluative situations is often driven by fear of being negatively judged by others (15). Fear of negative evaluation defined as apprehension about others' evaluations, distress over their negative judgments, and the expectation that others will evaluate oneself negatively. According to cognitive models of anxiety, fear of negative evaluation can act as a trigger for anxiety in social or performance contexts (16). Anxious adolescent athletes are often more sensitive to social evaluation, which in turn may heighten their competitive state anxiety. Several studies have demonstrated a positive relationship between fear of negative evaluation and components of anxiety (14, 17-19).

Although the direct relationships of neurotic perfectionism and fear of negative evaluation with competitive state anxiety have been studied, an important question remains: Why do not all athletes with neurotic perfectionism or fear of negative evaluation experience the

same level of competitive state anxiety? The presence of a mediating variable may help explain this relationship. One such variable discussed in applied psychology literature is mindfulness. Mindfulness refers to a non-judgmental awareness of present-moment experiences, with acceptance rather than automatic reactivity (20). Strengthening mindfulness skills may buffer the negative effects of perfectionism and reduce anxiety (21-22). Mindfulness is a skill that focuses the thought process on the present, thereby reducing the entry and processing of intrusive thoughts, and strengthening inhibition skills, resulting in improved focus and ultimately strengthening concentration skills. Recent studies have found negative associations between mindfulness and anxiety, particularly competitive state anxiety. For instance, Brenner (23) reported that adolescent athletes with higher levels of mindfulness demonstrate greater ability to focus and regulate anxiety. Similarly, Röthlin et al. (24) showed that mindfulness is inversely correlated with both cognitive and somatic anxiety, and in a mediation model, competitive state anxiety may act as a mediator between mindfulness and perceived sports performance.

Drawing on cognitive-behavioral and mindfulness-based stress reduction frameworks (4, 13), we propose a theoretical model in which mindfulness mediates the relationship between neurotic perfectionism, fear of negative evaluation, and competitive state anxiety. Specifically, it is hypothesized that: a) Neurotic perfectionism and fear of

negative evaluation are negatively associated with mindfulness, as maladaptive cognitive patterns (e.g., self-criticism, rumination, evaluative concerns) reduce present-moment awareness (13). b) Mindfulness, in turn, is negatively associated with competitive state anxiety by reducing cognitive intrusions and promoting non-judgmental acceptance. c) Thus, mindfulness serves as a mechanism through which neurotic perfectionism and fear of negative evaluation exert their influence on competitive anxiety, rather than these relationships being merely correlational (23). While prior studies have established correlations between these constructs, few have tested mindfulness as a mediator that explains how neurotic perfectionism and fear of negative evaluation lead to heightened anxiety. A mediation model moves beyond correlation by specifying the psychological process through which predictor variables influence the outcome.

Based on this evidence, the present study hypothesizes that mindfulness may mediate the relationship between neurotic perfectionism and fear of negative evaluation with competitive state anxiety in anxious adolescent athletes. While the direct links between neurotic perfectionism, fear of negative evaluation, and competitive anxiety are established, and mindfulness is recognized as a beneficial trait for athletes, the precise mechanism by which mindfulness operates within this specific constellation of factors in anxious adolescents remains underexplored. Previous research has often examined these variables in isolation or in

pairwise relationships (e.g., perfectionism and anxiety (11-13), mindfulness and anxiety (23, 24), or perfectionism and mindfulness (21)). Few studies have integrated all four constructs—neurotic perfectionism, fear of negative evaluation, mindfulness, and competitive state anxiety—into a single, comprehensive explanatory model for a clinically relevant population such as anxious adolescent athletes. Specifically, there is a paucity of research investigating whether mindfulness serves as a critical mediating pathway that explains how the maladaptive tendencies of neurotic perfectionism and the social-evaluative concerns inherent in fear of negative evaluation ultimately translate into heightened pre-competitive anxiety. Understanding this mediating mechanism is crucial for moving beyond correlational findings to inform targeted interventions. If mindfulness attenuates the impact of these vulnerability factors, it would highlight a potent, modifiable target for psychological skills training. Accordingly, the aim of this study is to examine whether mindfulness, as a mediating variable, can explain the relationship between neurotic perfectionism, fear of negative evaluation, and competitive state anxiety in anxious adolescent athletes.

While the relationships between perfectionism, evaluative fears, mindfulness, and anxiety have been explored individually in sport psychology, the present study offers a novel integration in several key respects. First, it focuses specifically on a clinically relevant subgroup of anxious adolescent athletes, rather than athletes in general, to

understand the mechanisms of anxiety in those most affected. Second, it concurrently examines two potent cognitive vulnerabilities—neurotic perfectionism and fear of negative evaluation—within a single mediation model to disentangle their shared and unique pathways to competitive anxiety via mindfulness. This allows for a nuanced comparison, testing whether these factors operate through similar or different mechanisms (full vs. partial mediation). Finally, it provides data from a non-Western (Iranian) athletic context, contributing to the cross-cultural understanding of these psychological processes. Therefore, this study aims not merely to replicate past findings but to extend them by clarifying the specific mediating role of mindfulness within a high-risk population and a more comprehensive causal model.

Materials and Methods

The present study employed a descriptive–correlational methodology and was specifically conducted using path analysis. Given the research objective, the study is classified as applied–basic research and was designed using a quantitative approach. The statistical population comprised all adolescent athletes (professional and non-professional) aged 15 to 18 years in Meybod city, with an approximate population size of 1,200.

In this study, a non-professional athlete was defined as an individual who had participated regularly in sporting activities for at least six months prior to the study (minimum three

sessions per week, each session at least 60 minutes). Professional athletes were defined as those who were members of official teams (club or provincial) and had a history of participation in official competitions. Non-professional athletes included individuals who engaged in sport only at recreational or informal levels and had no history of participation in official competitions. Using voluntary sampling, 305 participants were selected as the study sample. Following Kline’s recommendation (25), a minimum sample size of 200 is suggested for structural equation models. Additionally, according to Hair et al. (26), given the number of items in the study instruments, a sample size of 300 is considered sufficient. To reduce the impact of potentially contaminated questionnaires, the sample size was controlled by applying entry and exit criteria. Inclusion criteria were: (a) being an athlete (professional or non-professional); (b) scoring above the mean on the Competitive State Anxiety questionnaire (score > 28); a cutoff established in prior research to indicate clinically significant or high competitive state anxiety (27–28) (c) aged 15–18 years; and (d) willingness to participate in the study. Exclusion criteria were: (a) inattentive or careless responding; and (b) incomplete questionnaires. The questionnaires were administered online and made available to athletes via a virtual link.

Instruments

Competitive State Anxiety Inventory-2 (CSAI-2): The CSAI-2 (27) was used to assess state anxiety. This inventory contains

17 items and is divided into three subscales: cognitive 4-point Likert scale (1 = not at all, 2 = a little, 3 = moderately, 4 = very much). Cox et al. (27) reported construct validity using confirmatory factor analysis with factor loadings above .40 and favorable psychometric indices. In Iran, Mehrsefr et al. (28) evaluated construct validity using exploratory factor analysis to determine the number of factors and confirmatory factor analysis to assess measurement model fit; their results confirmed the three-factor structure (cognitive, somatic, and self-confidence), with all factor loadings above .40 and satisfactory psychometric indices. Test-retest reliability (intraclass correlation) ranged from 0.74 to 0.81. Internal consistency (Cronbach's alpha) for the three subscales was reported as 0.75 for competitive state anxiety, 0.83 for somatic anxiety, and 0.80 for self-confidence (28). In the present study, Cronbach's alpha of the CSAI was 0.83.

Neurotic Perfectionism Questionnaire:

This self-report instrument was developed by Mitzman et al. (29) to measure neurotic perfectionism and was standardized for the Iranian population by Gandomkar, Liaqat, and Shahryari Ahmadi (30). The questionnaire uses a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Scores range from 42 to 210, with higher scores indicating greater neurotic perfectionism. Mitzman et al. (29) reported high internal consistency (Cronbach's alpha = 0.95). The Iranian normalization study by Gandomkar et al. (30) also demonstrated

good reliability (Cronbach's alpha = 0.87) and acceptable construct validity via factor analysis. In the present study, Cronbach's alpha of this questionnaire was 0.91.

Fear of Negative Evaluation (FNE) scale:

The FNE was developed by Leary (1983) to assess worry and fear-related beliefs; it comprises 12 items rated from 1 (does not apply to me at all) to 5 (applies to me very much). Leary (31) reported high internal consistency ($\alpha = 0.96$) and a test-retest reliability of 0.75 after four weeks. The scale has been validated in Iranian populations, with demonstrated convergent validity with social anxiety measures. Test-retest reliability in Iranian samples was reported between 0.77 and 0.79 over a two-week interval (32). Rezaeipour, Jabbari Far, and Barzegar Bafroui (33) also reported a Cronbach's alpha of 0.78. In the present study, the FNE demonstrated excellent internal consistency (Cronbach's alpha = 0.952). In the present study, Cronbach's alpha of the FNE scale was 0.92.

Mindfulness scale: The 15-item unidimensional Mindful Attention Awareness Scale (MAAS) was used to assess the level of present-moment attention and awareness (34). Items are rated on a 6-point Likert scale (1 = almost always to 6 = almost never). The total score ranges from 15 to 90, with higher scores indicating greater mindfulness. Reported internal consistency (Cronbach's alpha) for the MAAS ranges from 0.80 to 0.87. Validity evidence includes negative correlations with measures of depression and anxiety and positive correlations with

measures of positive affect and self-esteem; test-retest reliability has been reported as stable over a one-month interval (34). Nejati et al. (35) reported a Cronbach's alpha of 0.81 for the Persian version in a sample of 723 students. Heydari et al. (36) evaluated the Persian MAAS via confirmatory factor analysis and found all item loadings acceptable ($\geq .40$) and reported Cronbach's alpha = 0.87. Amin-al-Sadat et al. (37) also reported satisfactory internal consistency ($\alpha = 0.83$). In the present study, Cronbach's alpha of the mindfulness scale was 0.87.

Data analysis

Path analysis was conducted to test the research model using AMOS. Preliminary analyses were performed with SPSS-21. Model fit was evaluated using indices including CFI, TLI, RMSEA, and χ^2/df . Bootstrap procedures were applied to assess

mediation and indirect effects. The hypothesized paths and indirect effects were theory-driven; therefore, no alpha correction was applied to minimize Type II error risk in testing the a priori model. All statistical values are reported with consistent formatting: β for standardized coefficients, two decimal places for correlations and coefficients, and exact p-values except where $p < .001$.

Results

After removing outliers and respondents who did not meet the inclusion criteria, 305 participants remained in the final analysis. The frequency distribution of participants by gender, grade level, academic status, and type of sport is presented in Table 1.

Table 1. Demographic characteristics of participants

Variable	Category	Frequency	%	Variable	Category	Frequency	%
Gender	Female	162	53.1	Sport status	Professional athlete	73	23.9
	Male	143	46.9		Non-professional	232	76.1
Academic status	Excellent (18–20)	100	32.8	Grade level	10th grade	102	33.4
	Good (15–18)	124	40.7		11th grade	100	32.8
	Average (12–15)	69	22.6		12th grade	103	33.8
	Below 12	12	3.9				
Sport Type	Team	185	60.7	Competiti on Level (if Prof.)	Local/Club	45	61.6
	Individual	120	39.3		Provincial/National	28	38.4

Approximately half of the participants were female. The distribution across grade levels was nearly even. Most participants had “good” academic performance, and the majority engaged in sports at a non-professional level. The mean and standard deviation of the Years in Sport were 5.2 and 2.8 respectively, and for the Training Hours/Week were 8.5 and 3.8 respectively. The mean, standard deviation, skewness, and kurtosis of the main study variables are presented in Table 2. All indices fell within the acceptable range (± 2), indicating normal distribution of the data. In addition, the Kolmogorov–Smirnov test confirmed

normality. The skewness for Fear of Negative Evaluation (FNE) was elevated (-1.903); however, the Kolmogorov-Smirnov test confirmed that the distributions for all variables did not significantly deviate from normality: Competitive State Anxiety ($D_{(305)} = 0.056, p > .05$), Fear of Negative Evaluation ($D_{(305)} = 0.085, p > .05$), Neurotic Perfectionism ($D_{(305)} = 0.048, p > .05$), and Mindfulness ($D_{(305)} = 0.028, p > .05$). Consequently, parametric analysis assumptions were met. Furthermore, bootstrapping (5,000 resamples) was used to validate the robustness of the path model and mediation effects.

Table 2. Descriptive statistics and bivariate correlations among variables

Variable	M	SD	Skewness	Kurtosis	1	2	3
1. Competitive state anxiety	35.20	5.27	0.654	-0.728	1		
2. Fear of negative evaluation	30.41	8.54	-1.903	1.031	.440**	1	
3. Neurotic perfectionism	118.50	22.19	0.244	-0.439	.363**	.284**	1
4. Mindfulness	43.13	8.37	0.339	0.028	-.412**	-.313**	-.654**

Note. * $p < .01$; $p < .05$

Table 2 shows that neurotic perfectionism and fear of negative evaluation were positively correlated with competitive state anxiety, while mindfulness had a significant negative relationship with competitive state anxiety. Prior to path analysis, collinearity was assessed. All Variance Inflation Factor (VIF) values were below 2, and correlations among predictors were below .70 (see Table 2), indicating no problematic multicollinearity. Also, data were screened

for missing values and outliers. Missing data were minimal (<1%) and handled using listwise deletion. Outliers were identified as scores exceeding ± 3 standard deviations from the mean; 21 cases were removed to preserve data integrity. The final sample for analysis consisted of 305 participants.

Path analysis results indicated that the initial hypothesized model, which included a direct path from neurotic perfectionism to competitive state anxiety, demonstrated suboptimal fit. Examination of the

modification indices suggested a substantial improvement in model fit would be achieved by removing this non-significant direct path (Modification Index, $MI \approx 7.38$). Consequently, this theoretically plausible but statistically non-significant path was

Table 3. Model fit indices

Fit index	Criterion	Value	Fit index	Criterion	Value
Chi-square (χ^2)	< 3	1.725	Goodness-of-fit index (GFI)	> 0.90	0.946
Significance level (p)	> 0.05	p = .189	Normed fit index (NFI)	> 0.90	0.939
Degrees of freedom (df)	–	1	Incremental fit index (IFI)	> 0.90	0.970
χ^2 / df	< 3	1.725	Tucker–Lewis index (TLI)	> 0.90	0.963
Comparative fit index (CFI)	> 0.90	0.969	RMSEA	< 0.08	0.049

As shown in Table 3, the chi-square value was non-significant ($p > .05$), and all other indices were within acceptable ranges,

removed post hoc to achieve a more parsimonious and well-fitting model. The revised model, excluding the NP→CSA path, yielded acceptable fit indices (Table 3).

indicating a good model fit. The structural model showing the relationships among neurotic perfectionism, fear of negative evaluation, mindfulness, and competitive state anxiety is presented in Figure 1.

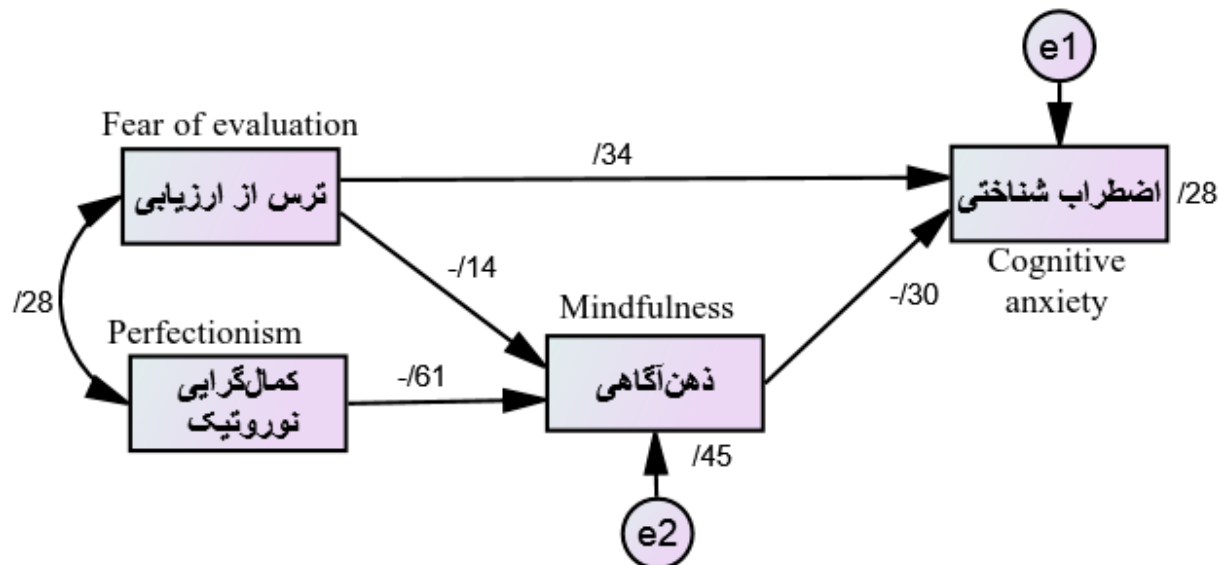


Fig 1. Path coefficients between variables

The standardized path coefficients (Figure 1) show that neurotic perfectionism did not have a significant direct effect on competitive state anxiety; rather, it influenced competitive state anxiety indirectly through mindfulness. In contrast, fear of negative evaluation affected competitive state anxiety both directly and indirectly. Mindfulness had a significant negative and protective effect on competitive state anxiety. Given the direct

path from fear of negative evaluation to competitive state anxiety, its indirect effect via mindfulness was further tested using the bootstrap method with 5000 resamples (95% bias-corrected bootstrap confidence intervals, and exact p-values). The results indicated that the indirect effect was significant, supporting the mediating role of mindfulness. The standardized direct and indirect effects are presented in Table 4.

Table 4. Standardized direct and indirect effects using bootstrap method

Predictor	Mediator	Outcome	Direct effect β	B (Unstd.)	SE	p	Indirect effect	p	Total effect	p
FNE	–	CSA	0.344	0.015	0.04	.001	–	–	0.344	.001
FNE	–	Mindf	-0.138	-0.22	0.09	.011	–	–	-0.138	.011
FNE	Mindf	CSA	–	--	--	–	0.042	.008	0.386	.001
NP	–	Mindf	-0.615	-0.31	0.03	.001	–	–	-0.615	.001
Mindf	–	CSA	-0.304	-0.18	0.04	.001	–	–	-0.304	.001

Discussion

The findings of the present study revealed multiple dimensions of the relationships among neurotic perfectionism, fear of negative evaluation, mindfulness, and competitive state anxiety in anxious adolescent athletes. The results are discussed in detail as follows. The results indicated that the direct relationship between neurotic perfectionism and competitive state anxiety in the structural model was not confirmed, although their simple correlation was positive and significant. This finding highlights the

complexity of the relationship between perfectionism and anxiety. Several studies (12, 38-40) have reported a positive relationship between perfectionism and anxiety. However, in the present study, the direct path was not significant, which may be attributable to the mediating role of variables such as mindfulness. Neurotic perfectionism is characterized by unrealistic standards and harsh self-criticism, which can potentially contribute to competitive state anxiety; nevertheless, athletes with mindfulness skills may be able to buffer against these negative

effects. Therefore, the influence of perfectionism on competitive state anxiety emerges indirectly in the presence of mindfulness as a mediator. This is consistent with cognitive-behavioral theories, which emphasize that mediating processes can explain the relationship between personality traits and anxiety (41-42). Another possible explanation for the nonsignificant direct path may be the characteristics of the sample, as participants were not drawn from a clinical population and their perfectionism may not have reached fully neurotic or maladaptive levels. Consequently, perfectionism alone did not exert a direct effect on competitive state anxiety but influenced it indirectly through reduced mindfulness.

The results indicated that the direct relationship between neurotic perfectionism and competitive state anxiety in the structural model was not confirmed, although their simple bivariate correlation was positive and significant. It should be noted that the removal of this direct path was a data-driven decision based on modification indices, and the resulting model should be validated through confirmatory studies with independent samples. This finding is of particular theoretical importance, as it clarifies the mechanism through which neurotic perfectionism operates. While the initial hypothesis and prior literature (12, 38-40) suggested a direct pathway, our integrated model reveals that neurotic perfectionism's primary deleterious effect on anxiety is not direct, but rather fully channeled through its erosion of mindful

awareness. In other words, for the adolescent athletes in this sample, possessing perfectionistic tendencies did not automatically translate into heightened pre-competitive anxiety. Instead, it was the associated reduction in present-moment, non-judgmental awareness—a core component of mindfulness—that served as the critical link. This suggests that the cognitive distortions and persistent self-criticism characteristic of neurotic perfectionism (10) may first impair the metacognitive capacity for mindfulness, and it is this impairment that subsequently fuels competitive anxiety. This finding aligns with and extends cognitive-behavioral theories (41-42) by specifying mindfulness as a key mediating cognitive process. It implies that interventions targeting anxiety in perfectionistic athletes might be most effective not by challenging perfectionistic standards directly as a first step, but by first bolstering mindfulness skills to disrupt the pathway that leads from those standards to anxious apprehension.

Path analysis further indicated that fear of negative evaluation predicts competitive state anxiety among athletes. This result is consistent with several studies (43-45), all of which reported that fear of negative evaluation is a strong predictor of anxiety in social and competitive contexts. In sports, adolescents are frequently subject to the judgment of coaches, teammates, and spectators; thus, it is unsurprising that fear of negative evaluation is directly linked to competitive state anxiety. Such fear predicts ruminations, worries about failure, and

anticipation of others' judgments, processes that heighten competitive state anxiety. These findings also align with Beck's cognitive theory (46), which posits that automatic negative thoughts about others' evaluations can elevate anxiety levels.

The findings also demonstrated that mindfulness was negatively and significantly associated with competitive state anxiety. This result is consistent with several studies (47-49), which showed that mindfulness training can reduce athletes' competitive state anxiety. Mindfulness, by fostering present-moment focus and non-judgmental acceptance of experiences, reduces rumination and intrusive thoughts, thereby lowering anxiety. Kabat-Zinn's mindfulness-based stress reduction framework (20) also explains how mindfulness moderates emotional responses to stressors. This effect is particularly important for adolescent athletes, who are often exposed to performance pressures; by focusing on the present moment, they can avoid disruptive thoughts and improve performance.

Path analysis also revealed that neurotic perfectionism is linked to low mindfulness among participants. This is consistent with the findings of previous studies (12-21), which emphasized that maladaptive perfectionism is associated with rumination and self-criticism, factors that diminish mindful awareness. Athletes with neurotic perfectionism tend to focus excessively on mistakes and worry persistently about performance, which limits their ability to accept experiences non-judgmentally. This

reduction in mindfulness is linked to their vulnerability to anxiety.

Additionally, a significant negative relationship was observed between fear of negative evaluation and mindfulness. This finding is consistent with previous findings (43-44), who reported that fear of judgment is associated with worry and low concentration. Fear of negative evaluation prompts threat appraisals and rumination, which undermine the ability to remain present. According to Lazarus's cognitive appraisal theory (50), such negative evaluations generate cognitive stress, which disrupts conscious information processing. Therefore, athletes who experience higher levels of fear of negative evaluation tend to report lower levels of mindfulness.

The results further indicated that the direct effect of neurotic perfectionism on competitive state anxiety was nonsignificant, but its indirect effect through mindfulness was significant. This aligns with previous studies (21-47), which reported that mindfulness can buffer the negative effects of perfectionism. In this regard, neurotic perfectionism predicts self-criticism and worries about mistakes, thereby reducing mindfulness, which in turn elevates competitive state anxiety. Thus, mindfulness functions as a "protective shield" that mitigates the detrimental effects of perfectionism.

Finally, the findings showed that mindfulness partially mediated the relationship between fear of negative evaluation and competitive

state anxiety. In other words, fear of negative evaluation exerted both direct and indirect effects (via mindfulness) on competitive state anxiety. This is consistent with previous studies (44-51). According to mindfulness-based stress reduction theory, mindfulness reduces the impact of threatening appraisals and fosters non-judgmental acceptance of experiences, thereby buffering against the negative consequences of fear of negative evaluation. Accordingly, mindfulness plays a crucial mediating role in reducing anxiety stemming from fear of others' judgments.

Conclusion

The present study contributes to understanding the mediating role of mindfulness in the relationship among neurotic perfectionism, fear of negative evaluation, and competitive state anxiety in anxious adolescent athletes. The findings suggest that mindfulness is a fundamental mechanism that can moderate the adverse effects of maladaptive personality traits, thereby reducing competitive state anxiety in competitive contexts. It is important to note, however, that the sample consisted of a non-clinical population of adolescent athletes, and the levels of neurotic perfectionism may not have reached clinically significant or fully maladaptive thresholds. This may explain the absence of a significant direct path between neurotic perfectionism and competitive state anxiety in the model. Instead, neurotic perfectionism exerted its influence indirectly through mindfulness, highlighting that in community-based athletic samples,

perfectionism may primarily affect anxiety by diminishing present-moment awareness rather than through direct psychopathological pathways. Accordingly, mindfulness training may serve as an effective strategy to promote mental health and improve athletic performance among adolescents. Moreover, considering psychological factors such as neurotic perfectionism and fear of negative evaluation is of great importance in designing sport psychology interventions. From an applied perspective, it is recommended that mindfulness workshops be organized for adolescent athletes, that coaches and teachers receive training in managing perfectionism and reducing psychological pressure, and that families foster a supportive, non-judgmental environment. Schools and sports centers can also play a critical role in reducing adolescents' competitive state anxiety by incorporating mindfulness programs into routine activities.

The present study sought to extend previous research by testing an integrated mediation model in a specific population of anxious adolescent athletes. The findings provide a nuanced account of how two major cognitive vulnerabilities—neurotic perfectionism and fear of negative evaluation—relate to competitive state anxiety through the mechanism of mindfulness. The key novel insight is the differential mediation pattern: while the effect of neurotic perfectionism was fully mediated by mindfulness, fear of negative evaluation maintained a direct effect on anxiety alongside its indirect effect through mindfulness. This suggests distinct

psychological pathways for these two risk factors. This pattern of full mediation for neurotic perfectionism but partial mediation for fear of negative evaluation represents a meaningful theoretical nuance. It implies that for athletes with neurotic perfectionism, interventions might optimally target the mindfulness mechanism to disrupt the entire pathway to anxiety. In contrast, for athletes with high fear of negative evaluation, while mindfulness training is still beneficial, additional interventions directly addressing social-evaluative concerns (e.g., cognitive restructuring, exposure) may be necessary due to the persisting direct effect. This differential insight helps refine targeted intervention strategies. While the findings suggest mindfulness is associated with lower competitive anxiety, mindfulness-based interventions would require experimental validation in adolescent athletes to establish causal efficacy

Limitations and Suggestions for Future Research

Like all studies, this research was subject to limitations. First, the use of a correlational design limits causal inference about the relationships among the variables. Second, the sample was restricted to anxious adolescent athletes in Meybod, which limits the generalizability of the findings to other age groups, geographic regions, or cultural contexts. The psychological dynamics of perfectionism, evaluative fear, and anxiety may be influenced by local training cultures, coaching styles, family expectations, and

broader societal norms regarding achievement and competition in Iran, which may differ from those in other regions or countries. Third, data were collected using self-report questionnaires, which are subject to response biases. Fourth, potential moderating variables such as social support, coaching pressure, or type of sport (team vs. individual) were not included, although they may influence the relationships under study. Potential confounds such as BMI, prior mindfulness training, and socioeconomic factors were not measured. The use of self-report measures introduces potential biases such as social desirability. Additionally, unmeasured variables like general trait anxiety or specific coping styles could confound the observed relationships.

Future research is encouraged to examine the moderating roles of factors such as social support, coping styles, and coaching pressure in the relationships among fear of negative evaluation, neurotic perfectionism, and competitive state anxiety. Intervention studies evaluating the effectiveness of mindfulness-based programs in reducing competitive state anxiety among adolescent athletes would also be valuable. Phenomenological research exploring the lived experiences of anxious adolescent athletes could provide deeper insights into the factors influencing competitive state anxiety. Furthermore, investigating the effects of mindfulness training on neurotic perfectionism and fear of negative evaluation could inform the development of more targeted interventions. The use of the unidimensional MAAS limits our ability to examine how specific mindfulness facets (e.g., non-judgment, non-reactivity) may differentially relate to anxiety and the other

constructs. Future research should employ multidimensional mindfulness measures to identify which components are most protective in athletic contexts.

Author Contributions

YRM participate in Conceptualization, methodology, and writing—review and editing. FE participate in writing—original draft preparation, and formal analysis. All authors have read and agreed to the published version of the manuscript.” Please turn to the [CRediT](#) taxonomy for the term explanation. All authors contributed equally to the conceptualization of the article and writing of the original and subsequent drafts.

Data Availability Statement

All data generated or analyzed during this study are included in this published article.

Acknowledgements

The authors sincerely thank all the students who participated in this study and generously shared their time and experiences.

Ethical considerations

This study complied with the ethical standards of the Declaration of Helsinki. Participants were fully informed about the study objectives and procedures, signed written informed consent, and were assured of confidentiality and anonymity throughout the research process. The authors acknowledge the use of an AI-based language model (*ChatGPT*, OpenAI) for professional English translation, native-level editing, and text summarization of the original Persian draft. The authors take full responsibility for the final content, accuracy, and interpretation of the manuscript.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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