



## Mindfulness and its relationship with psychological well-being among gifted student-athletes

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### Abstract

**Background:** This study examined the level of mindfulness and its relationship with psychological well-being among gifted student-athletes in Jordan, in light of the growing interest in the psychological role of mindfulness in supporting academic and athletic performance, as well as emotional balance, among this population.

**Aims:** The study aimed to identify levels of mindfulness and psychological well-being among gifted student-athletes, to explore the nature of the relationship between these two variables, and to examine whether statistically significant differences in psychological well-being exist by gender.

**Methods:** The study sample consisted of 145 male and female gifted student-athletes, selected using simple random sampling. Ryff's Psychological Well-Being Scale – Short Form was employed. Data were analyzed using appropriate statistical methods, including means and standard deviations, tests of difference, and correlation coefficients.

**Results:** The findings indicated moderate levels of mindfulness ( $M = 3.22$ ,  $SD = 0.35$ ) and psychological well-being ( $M = 3.17$ ,  $SD = 0.54$ ). No statistically significant gender differences in psychological well-being were found ( $p > 0.05$ ). In contrast, a strong, positive, and statistically significant correlation was identified between mindfulness and psychological well-being.

**Conclusion:** The results highlight the practical value of integrating mindfulness-based training programs within educational and athletic environments for gifted students, as these programs enhance emotional balance, psychological resilience, and athletic performance. The study also provides a theoretical contribution by clarifying the relationship between mindfulness and psychological well-being within the Arab context, thereby supporting the development of evidence-based educational and athletic practices.

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## INTRODUCTION

Mindfulness is typically defined as a non-judgmental awareness of the present moment, characterized by intentional attention to and acceptance of internal experiences. In recent years, mindfulness-based approaches have received growing empirical attention in sport and performance psychology as complementary or alternative frameworks to traditional psychological skills training (PST). The available evidence suggests that these approaches may support athletic performance, facilitate the development of attentional and emotional self-regulation, and contribute to more favorable mental health outcomes, particularly in high-demand athletic environments (Piasecki et al., 2025; Martinent et al., 2024).

Although psychological coping strategies such as imagery, relaxation, and confidence training have long been used to reduce anxiety and improve performance, recent systematic reviews have reported mixed and, at times, inconsistent evidence regarding their effectiveness, particularly in high-pressure competitive contexts (Kara et al., 2025; Nogueira et al., 2025). In contrast, a growing body of contemporary research consistently demonstrates the positive effects of mindfulness on emotional balance, stress reduction, and psychological adaptability (Goldberg et al., 2022).

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Within this framework, mindfulness has been increasingly proposed as a valuable psychological resource for gifted individuals, including athletically gifted students, who often experience heightened academic, emotional, and performance-related pressures that require flexible and adaptive coping strategies. Recent literature highlights that mindfulness interventions support attention control, self-regulation, social skills, and academic engagement among gifted learners, making it particularly relevant for addressing their complex psychological demands (Lialiou, 2025).

Over the past two decades, advances in positive psychology have further reinforced this perspective by emphasizing optimal functioning, psychological well-being, and human flourishing as central outcomes of performance-related research. More recent developments have accelerated the integration between psychological science and sport performance research, underscoring the fundamental role of cognitive-emotional processes such as emotion regulation, attentional control, resilience, and adaptive self-awareness in facilitating athletic success, sustained excellence, and effective coping under competitive pressure (Ryff, 2014; Goldberg et al., 2022).

Gifted student-athletes represent a distinct population characterized by the coexistence of high athletic potential and elevated academic expectations, necessitating the integration of physical, cognitive, and socio-emotional competencies. Competencies such as emotional regulation, attentional control, resilience, and self-awareness have been identified as essential for balancing athletic development with academic adjustment, particularly within dual career contexts where athletes simultaneously pursue sport and education (Ramón-Arbués et al., 2025). Athletic giftedness is characterized not only by superior motor abilities, neuromuscular coordination, and physical fitness, but also by psychological attributes such as motivation, perseverance, and emotional regulation (Jafari et al., 2025). Empirical evidence indicates that gifted athletes tend to acquire sport-specific skills more rapidly and demonstrate greater efficiency in adapting to increasing training demands, thereby enhancing their ability to cope with escalating performance requirements and, consequently, increasing their likelihood of attaining advanced competitive levels. In this context, mindfulness training is associated with notable improvements in psychological health-related quality of life by supporting emotional regulation, present-moment awareness, and adaptive psychological functioning under high competitive demands. (Anderson et al, 2025 ; Augustus & Zizzi, 2023).

Within athletic contexts, psychological skills including relaxation, imagery, goal setting, and mindfulness play a central role in optimizing attentional focus, emotional balance, stress tolerance, and performance consistency (Singh et al., 2024). Among these skills, mindfulness has received particular attention due to its demonstrated capacity to enhance intrinsic motivation, present-moment awareness, attentional control, emotional regulation, and resilience, thereby enabling athletes to perform more effectively under conditions of competitive pressure. Empirical findings further indicate that mindfulness strengthens self-confidence and perceived control, which are recognized predictors of optimal athletic performance (Ptáček et al., 2024). More recent conceptualizations describe mindfulness as a multidimensional construct integrating cognitive, affective, and motivational processes, contributing to higher-order functioning such as self-regulation, emotional stability, creativity, and sustained focus (Leroy et al., 2025).

A substantial and expanding body of literature supports the role of mindfulness in enhancing vitality, calmness, perseverance, intrinsic motivation, and confidence among athletes (Wu et al., 2021). Research has also demonstrated mindfulness as a mediating factor between mental training and athletic courage, as well as between athletic performance and psychological well-being (Singh et al., 2025). Beyond sport settings, recent evidence indicates that mindfulness is positively associated with key indicators of academic success. It also contributes to enhancing academic persistence by sustaining learning motivation and allocating greater cognitive resources to academic tasks, which in turn is reflected in improved academic performance and achievement (Mao et al., 2024). Recent educational research further underscores the effectiveness of mindfulness-based interventions among school-aged students, with a comprehensive systematic review reporting significant improvements in emotional regulation, mental health, and socio-emotional development across P-12 settings (D'Souza & Smyth, 2025). Consistent with these findings, recent empirical evidence indicates that the cognitive facets of mindfulness, particularly intentional attention and moment-to-moment awareness, play a key role in enhancing students' concentration, executive functioning, and sustained engagement, thereby supporting improved academic outcomes. Studies across higher and

secondary education contexts have shown that higher mindfulness levels are associated with better academic performance, increased learning motivation, and reduced stress, even under demanding conditions (Jafari et al., 2025; Tran, 2025).

Sport psychology research has predominantly focused on general athlete populations within Western cultural contexts (Wang et al., 2024). Although recent studies indicate that higher levels of trait mindfulness are positively associated with quality of life and psychological well-being among student-athletes, the available empirical evidence suggests that these benefits are largely consistent across genders, with most studies reporting minimal or non-significant gender differences in mindfulness-related outcomes (Li et al., 2024).

Compared with other groups, relatively little attention has been devoted to gifted student-athletes as a distinct group experiencing compounded academic and athletic pressures. This limitation is particularly evident in Arab contexts, where cultural, educational, and social factors may further shape psychological well-being, yet remain underrepresented in empirical research.

Accordingly, a clear research gap exists regarding the relationship between mindfulness and psychological well-being among gifted student-athletes in Arab countries. Addressing this gap, the present study examines the levels of mindfulness and psychological well-being among gifted student-athletes. It investigates the extent to which mindfulness is statistically associated with psychological well-being within the Jordanian context. By situating this inquiry within a culturally specific educational and sporting environment, the study aims to generate context-sensitive evidence aligned with the applied orientation of coaching and sport science research. Furthermore, by exploring the cognitive-emotional mechanisms underlying this association and considering potential gender differences, the study contributes to the development of culturally responsive, evidence-based educational and coaching practices, while enabling meaningful comparison with international findings.

## METHOD

### *Research Design*

The present study adopted a quantitative, descriptive-correlational research design. This design was appropriate for examining the nature and strength of the relationship between mindfulness and psychological well-being among gifted student-athletes, as well as for exploring the predictive role of mindfulness and investigating potential gender differences.

### *Participants*

The study sample consisted of 145 male and female gifted student-athletes enrolled in educational institutions in Jordan. Participants were selected using simple random sampling to ensure adequate representation of the target population across both educational and athletic contexts. Inclusion criteria required participants to be formally identified as gifted and actively involved in organized athletic activities.

### *Population and Sampling Method*

The study population comprised all gifted student-athletes registered in educational and sports institutions in Jordan during the 2024/2025 academic year. Simple random sampling was employed to minimize selection bias and enhance the generalizability of the findings within the defined population.

### *Instruments*

#### *Mindfulness Measure*

Mindfulness was measured using the Five Facet Mindfulness Questionnaire-Short Form (FFMQ-10), a 10-item instrument covering five dimensions, rated on a 5-point Likert scale (1 = never true of me, 5 = always true of me). The scale was culturally adapted to the Arabic/Jordanian context through a forward-backward translation procedure and demonstrated acceptable internal consistency in the present study ( $\alpha = .83$ ), consistent with prior findings (Takahashi et al., 2022).

#### *Psychological Well-Being Measure*

Psychological well-being was assessed using the 18-item short form of Ryff's Psychological Well-Being Scale, which evaluates six core domains: self-acceptance, positive relations with others,

autonomy, environmental mastery, purpose in life, and personal growth. Items were rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scale was translated and culturally adapted to the Arabic/Jordanian context using a forward-backward translation procedure. In the present study, the instrument demonstrated good internal consistency (Cronbach's  $\alpha = .83$ ), consistent with recent empirical evidence confirming the reliability, cross-cultural applicability, and generalizability of Ryff-based psychological well-being measures across diverse populations and research contexts (Ryff, 2014).

#### Procedures

Following ethical approval, data were collected during the 2024/2025 academic year. Participants were informed of the study objectives, and informed consent was obtained before data collection. Questionnaires were administered in group sessions under standardized conditions, in coordination with the relevant educational and sports institutions.

#### Data Analysis Plan

Data were analyzed using the Statistical Package for the Social Sciences (SPSS), version 24. Descriptive statistics (means and standard deviations) were computed to determine levels of mindfulness and psychological well-being. Pearson's correlation coefficient was used to examine the relationship between mindfulness and psychological well-being. Regression analysis was conducted to assess the predictive role of mindfulness in psychological well-being. Independent-samples t-tests were used to examine gender differences. Statistical significance was set at  $p < .05$ .

#### Scope and Methodological Limitations

The findings of this study should be interpreted in light of several methodological limitations. First, the correlational design does not permit causal inferences. Second, reliance on self-report measures may introduce response bias. Third, the sample was limited to gifted student-athletes in Jordan, which may restrict the generalizability of the findings to other populations or cultural contexts.

## RESULTS AND DISCUSSION

### Results

#### Research Question 1: What is the level of Mindfulness among gifted student-athletes?

To answer this question, descriptive statistics were calculated for the five subscales of the Mindfulness Scale—Observing, Describing, Acting with Awareness, Non-judging of Inner Experience, and Non-reactivity to Inner Experience—as well as the total Mindfulness score for the entire sample.

**Table 1.** Descriptive Statistics for Mindfulness Domains and Total Score

No	Domain	M	SD
1	Observing	4.07	0.75
2	Describing	3.26	0.98
3	Acting with awareness	2.66	0.74
4	Non-judging of inner experience	3.18	0.96
5	Non-reactivity to inner experience	2.94	0.99
	Total	3.22	0.35

Table 1 presents the means and standard deviations of mindfulness levels across the five domains and the total score for the study sample ( $N = 145$ ) of gifted student-athletes. The findings indicate noticeable variation across the different mindfulness domains, highlighting the multidimensional nature of the construct. The highest mean was observed in the Observing domain ( $M = 4.07$ ,  $SD = 0.75$ ), suggesting that participants demonstrated a strong capacity to notice and attend to their internal and external experiences with clarity and awareness. The Describing domain yielded a moderate mean ( $M = 3.26$ ,  $SD = 0.98$ ), indicating an adequate ability to identify and verbally express mental and emotional experiences. In contrast, the Acting with Awareness domain showed a lower mean ( $M = 2.66$ ,  $SD = 0.74$ ), suggesting that some participants engaged in activities automatically, with limited awareness of the present moment. The Non-judging of Inner Experience domain recorded a moderate mean ( $M = 3.18$ ,  $SD = 0.96$ ), suggesting a reasonable level of self-

acceptance and a non-critical stance toward personal experiences. Finally, the Non-reactivity to Inner Experience domain demonstrated a moderate mean ( $M = 2.94$ ,  $SD = 0.99$ ), indicating a moderate ability to maintain emotional balance and to refrain from overreacting to emerging thoughts or feelings.

*Research Question 2: Are there statistically significant gender differences in Mindfulness levels among gifted student-athletes?*

To address this question, independent samples t-tests were conducted to examine potential gender differences across the five domains of the Mindfulness Scale Observing, Describing, Acting with Awareness, Non-judging of Inner Experience, and Non-reactivity to Inner Experience as well as the overall Mindfulness score.

**Table 2.** Independent Samples t-Test Results by Gender for Mindfulness Domains

N	Domain	M (M)	SD (M)	M (F)	SD (F)	t	p
1	Observing & Describing	4.13	0.50	3.97	0.60	1.57	0.12
2	Acting with Awareness	3.26	0.48	3.24	0.61	0.18	0.86
3	Non-judging of Inner Experience	2.67	0.56	2.63	0.49	0.45	0.65
4	Non-reactivity to Inner Experience	3.19	0.77	3.17	0.92	0.11	0.92
5	Self-Regulation & Focus	2.93	0.56	2.97	0.62	-0.36	0.72
	Total	3.22	0.35	3.22	0.35	0.57	0.57

Note. \*M\* = Mean; \*SD\* = Standard Deviation; \*ns\* = not significant ( $p > .05$ ).

As shown in [Table 2](#), the results indicated that no statistically significant gender differences were found across any domain or in the total Mindfulness score. This suggests that male and female gifted student-athletes exhibit comparable levels of Mindfulness across all dimensions, reflecting similar cognitive-emotional processing and awareness skills regardless of gender.

*Research Question 3: What is the level of psychological well-being among gifted student-athletes?*

To answer this question, descriptive statistics were calculated for the six subscales of the Psychological Well-Being Scale Self-Acceptance, Positive Relations with Others, Autonomy, Environmental Mastery, Purpose in Life, and Personal Growth as well as the total psychological well-being score for the entire sample, as presented in [Table 3](#).

**Table 3.** Descriptive Statistics for Psychological Well-Being Domains and Total Score

No	Domain	M	SD
1	Self-Acceptance	3.42	0.63
2	Positive Relations	3.34	0.66
3	Autonomy	3.31	0.68
4	Environmental Mastery	2.47	0.36
5	Purpose in Life	3.18	0.66
6	Personal Growth	3.28	0.96
	Total	3.17	0.54

Descriptive and Interpretive Results ([Table 3](#)) Descriptive statistics were calculated to determine the mean scores and standard deviations for each domain of psychological well-being, as well as the overall score. As shown in [Table 3](#), the means ranged from 2.47 to 3.42, indicating moderate to high levels of psychological well-being among gifted student-athletes.

[Table 3](#) presents the means and standard deviations of psychological well-being across its six domains and the total score for the study sample ( $N = 145$ ) of gifted student-athletes. The results indicate variations in psychological well-being across domains, reflecting the multidimensional structure of this construct and the diverse experiences of gifted student-athletes in maintaining emotional balance and life satisfaction.

The Self-Acceptance domain recorded a mean score of  $M = 3.42$  ( $SD = 0.63$ ), indicating that participants generally held a positive self-concept and a sense of satisfaction with themselves. The Positive Relations with Others domain had a mean of  $3.34$  ( $SD = 0.66$ ), reflecting most participants' ability to establish supportive, trusting, and meaningful social relationships. The Autonomy domain yielded a mean of  $M = 3.31$  ( $SD = 0.68$ ), suggesting a moderate level of independence and self-determination, with participants capable of making their own decisions while considering social expectations. In contrast, the Environmental Mastery domain recorded the lowest mean ( $M = 2.47$ ,  $SD = 0.36$ ), indicating that some participants experienced difficulties in effectively managing or adapting to environmental demands. The Purpose in Life domain had a mean of  $3.18$  ( $SD = 0.66$ ), indicating a moderate sense of meaning, motivation, and goal orientation. The Personal Growth domain recorded a mean of  $M = 3.28$  ( $SD = 0.96$ ), suggesting that participants perceived ongoing personal development, openness to new experiences, and a desire for self-improvement. Overall, the mean level of psychological well-being was ( $M = 3.17$ ,  $SD = 0.54$ ), indicating a moderate level of well-being among the participants. In summary, the findings suggest that gifted student-athletes exhibit a balanced psychological profile, characterized by stronger self-acceptance and interpersonal relationships, alongside relatively weaker environmental control. This pattern suggests that, while participants demonstrate inner stability and positive social functioning, they may face situational challenges in managing external demands in competitive and academic environments.

*Research Question 4: Are there statistically significant gender differences in psychological well-being among gifted student-athletes?*

To address this question, independent samples t-tests were conducted to examine potential gender differences across the six domains of the Psychological Well-Being Scale: Self-Acceptance, Positive Relations with Others, Autonomy, Environmental Mastery, Purpose in Life, and Personal Growth, as well as the total psychological well-being score.

To further explore this aspect, independent samples t-tests were conducted to examine potential gender differences in psychological well-being across each domain and the overall score. The results of these analyses are summarized in [Table 4](#) below.

**Table 4.** Independent Samples t-Test Results by Gender for Psychological Well-Being

N	Domain	M (M)	SD (M)	M (F)	SD (F)	t
1	Self-Acceptance	3.41	0.52	3.42	0.50	-0.07
2	Positive Relations	3.34	0.48	3.34	0.46	-0.03
3	Autonomy	3.29	0.57	3.35	0.59	-0.53
4	Environmental Mastery	2.45	0.61	2.50	0.63	-0.73
5	Purpose in Life	3.20	0.49	3.14	0.51	0.49
6	Personal Growth	3.25	0.54	3.35	0.56	-0.53
	Total	3.16	0.42	3.18	0.40	-0.26

Note. \*M\* = Mean; \*SD\* = Standard Deviation; \*ns\* = not significant ( $p > .05$ ).

[Table 4](#) shows that no statistically significant gender differences were found in any of the psychological well-being dimensions or in the overall score. The statistical analysis indicated that all p-values exceeded the significance threshold ( $p > .05$ ), confirming the absence of meaningful differences between males and females in psychological well-being. These findings suggest that gifted student-athletes of both genders exhibit comparable levels of psychological well-being across all dimensions and demonstrate similar perceptions of their personal and emotional well-being.

*Research Question 5: What is the nature of the relationship between Mindfulness and psychological well-being among gifted student-athletes?*

To examine the relationship between total Mindfulness and psychological well-being among gifted student-athletes, Pearson's correlation analysis was conducted to determine the strength and direction of the association between the two variables. As shown in [Table 5](#).

**Table 5.** Correlation Between Total Mindfulness and Psychological Well-Being

Variables	r	p	Sig.
Total Mindfulness × Total Psychological Well-Being	0.75	0.00	p < .05

The results presented in [Table 5](#) revealed a strong positive correlation ( $r = 0.75$ ,  $p < .05$ ) between total Mindfulness and psychological well-being among gifted student-athletes. This finding indicates that higher levels of mindfulness reflected in focus, emotional stability, and self-regulation are significantly associated with greater psychological well-being, including greater life satisfaction, self-acceptance, and emotional balance.

## Discussion

The statistical analyses (Tables 1 and 2) indicated that the overall level of Mindfulness among gifted student-athletes was moderate, with the Observing facet showing the highest mean score among the five dimensions. This pattern suggests that participants demonstrate an adequate level of attentional awareness, particularly in their ability to notice internal experiences and external stimuli relevant to academic and athletic performance. The prominence of the Observing facet highlights its role as a core component of attentional awareness within psychological and mental preparation processes.

The relatively elevated level of the Observing facet may be associated with the characteristics and demands of athletic training, which require sustained attention to bodily sensations, environmental cues, and various performance indicators. These characteristics may contribute to the development of heightened sensory awareness and present-moment attention among athletes. This interpretation is consistent with recent literature indicating that mindfulness particularly the Observing dimension is associated with key performance-related indicators, such as attentional control, emotional regulation, and situational responsiveness within dynamic sporting environments ([Aslam et al., 2025](#)). Furthermore, evidence from systematic reviews and meta-analyses suggests that higher levels of mindfulness are associated with more adaptive patterns of focus and responsiveness during competitive situations, without implying direct causal relationships ([Ptáček et al., 2024](#)).

Nevertheless, it must be emphasized that this explanation is theoretical rather than causal, as the correlational design of the present study does not permit causal inferences. The remaining mindfulness facets Describing, Acting with Awareness, Non-Judging of Inner Experience, and Non-Reactivity to Inner Experience were also observed at moderate levels. This pattern suggests that although gifted student-athletes may demonstrate adequate attentional awareness, they may experience relative challenges in maintaining a consistently non-evaluative, non-reactive stance toward internal experiences, particularly under conditions of heightened cognitive load and performance pressure. From a theoretical perspective, this pattern may be understood in terms of the dual nature of giftedness, in which high levels of cognitive and athletic ability often coexist with increased psychological pressure, heightened self-expectations, and performance-related stress. Importantly, this interpretation should be viewed as a conceptual explanation informed by existing literature, rather than as a conclusion directly supported by empirical evidence from the present study, and therefore warrants cautious interpretation. Contemporary research conceptualizes mindfulness as a dynamic and trainable psychological resource that supports emotional regulation, attentional control, and adaptive functioning in athletic contexts, particularly by fostering present-moment awareness and flexible self-regulation under competitive demands ([Al Alwan et al., 2025](#); [Jaurequi et al., 2025](#); [Bühlmayer et al., 2017](#)).

Empirical evidence indicates that higher levels of specific Mindfulness facets particularly Acting with Awareness and Non-Reactivity are associated with improved concentration under pressure and more rapid emotional recovery following failure ([Singh et al., 2024](#)). Recent evidence links lower mindfulness levels to diminished academic, psychological, and social functioning. In this context, the present findings indicate that gifted student-athletes exhibit strong internal observation and situational awareness, supporting sustained focus, emotional regulation, and integrated cognitive-motor performance. Accordingly, mindfulness-based training may offer an effective means of enhancing mindfulness and sustaining attention in gifted populations, consistent with

contemporary views of mindfulness as mental energy that supports efficient cognition, emotional regulation, and optimal performance under pressure (Leroy et al., 2025).

Furthermore, Mindfulness is widely recognized as a malleable construct, amenable to development through structured psychological and mindfulness-based interventions (Yıldız et al., 2020). Beyond individual training effects, highlight the influence of motivational, social, and educational environments particularly self-efficacy beliefs, family support systems, and access to meaningful engagement opportunities in fostering mindfulness and psychological well-being. Within the framework of positive psychology, mindfulness is increasingly regarded as a core psychological mechanism underpinning emotional balance, academic functioning, and athletic success, with evidence suggesting that psychological resources may, in certain contexts, outweigh physical capabilities in predicting performance outcomes (Siyahtaş et al., 2026; Cai et al., 2025).

Regarding gender, the results revealed no statistically significant differences between male and female participants in overall mindfulness or its subdimensions. This consistency may be attributed to the fact that male and female gifted student-athletes in the present sample were exposed to comparable academic and athletic environments characterized by equal opportunities, psychological safety, and supportive learning conditions. Such equitable contexts are likely to foster balanced development of mindfulness and psychological well-being across genders. This interpretation is consistent with contemporary research emphasizing the role of psychologically supportive educational and sport climates in promoting student well-being and adaptive functioning irrespective of gender (Alag, & Poralan, 2025).

Furthermore, contemporary research underscores that consistent participation in physical activity contributes substantially to the development of emotional resilience and the improvement of cognitive functioning in students, affirming the enduring positive effects of regular physical activity on psychological and cognitive well-being (Chekroud et al., 2018).

At the same time, alternative explanations should be considered. Sample characteristics, such as homogeneity among gifted students, as well as sample size and gender distribution, may have limited the statistical power to detect subtle differences. From a cultural perspective, social and educational values emphasizing self-discipline and emotional regulation irrespective of gender may further attenuate gender differences reported in some Western contexts. The possibility of a ceiling effect cannot be ruled out, particularly if Mindfulness scores were relatively clustered, thereby limiting variability. Overall, the mixed findings in the literature regarding gender differences in Mindfulness suggest that such differences are likely context-dependent, influenced by sample composition, measurement tools, and cultural and educational settings, rather than reflecting a stable or universal pattern (D'Souza & Smyth, 2025). Therefore, the present findings should be interpreted with caution. Future research is encouraged to employ larger and more diverse samples, incorporate additional psychological variables related to giftedness, stress, and performance expectations, and adopt longitudinal or experimental designs to more fully capture the developmental and contextual dynamics of Mindfulness among gifted student-athletes and to guide evidence-based psychological interventions.

The results presented in Tables 3 and 4 indicate that gifted student-athletes exhibited a moderate level of psychological well-being, characterized by relatively high self-acceptance and positive social relationships, alongside comparatively lower environmental mastery. This pattern suggests that gifted student-athletes are generally successful in establishing supportive peer networks grounded in shared academic and athletic goals, which in turn promote emotional stability, social adjustment, and a sense of belonging. Recent empirical evidence supports this interpretation, demonstrating that supportive university sport environments particularly those characterized by cooperation, mutual support, and a strong group identity play a critical role in enhancing emotional well-being and social integration among student-athletes (Sabiston et al., 2024; Martin et al., 2023).

In contrast, lower levels of environmental mastery may reflect the challenges of managing external demands and contextual pressures arising from the simultaneous pursuit of academic excellence and athletic commitments. Contemporary research in sport and educational psychology indicates that even high-performing student-athletes may experience difficulties in exerting control over organizational, temporal, and contextual stressors within high-expectation environments, which may negatively affect their perceived environmental mastery and overall adjustment (Martinent et al., 2024).

The elevated levels of self-acceptance and emotional regulation observed in the present study are consistent with recent findings indicating that gifted individuals tend to report higher levels of psychological well-being, which can be attributed to stronger self-efficacy, clearer goal orientation, and the use of more adaptive coping strategies (Özcan Kara & Aydoğan, 2025). Moreover, contemporary research in physical education and sport psychology increasingly supports the view that regular engagement in structured physical activity is closely associated with the development of social-emotional competencies, the enhancement of self-confidence, and the promotion of social integration among university students. Accumulating empirical evidence further suggests that participation in organized physical activity contexts contributes not only to physical health but also to psychological adjustment and interpersonal functioning. Collectively, these findings challenge the persistent marginalization of physical education in certain academic settings, where its broader psychological, social, and developmental contributions continue to be underestimated or insufficiently recognized (Martinent et al., 2024).

Recent studies further demonstrate that structured physical activity contributes simultaneously to the development of bodily-kinesthetic intelligence and psychological well-being by enhancing body awareness, emotional regulation, and perceptions of competence and control. These findings support an integrative perspective of cognitive, emotional, and physical development as interconnected dimensions of human growth (Han et al., 2025). In this context, large-scale contemporary analyses suggest that emotional differences often attributed to gender tend to diminish or disappear altogether within supportive athletic environments that offer positive training climates, strong social support, and a high degree of psychological safety. Such environments appear to function as equalizing contexts that promote comparable emotional regulation and well-being across male and female athletes (Alecú & Onea, 2025).

From a theoretical perspective, the present findings are consistent with contemporary developmental frameworks that conceptualize human development as a dynamic, integrated system in which cognitive capacities, emotional regulation, and bodily experience interact reciprocally to shape adaptive functioning and performance outcomes in sport and educational settings (Lerner et al., 2024). This perspective is further reinforced by contemporary research in positive and sport psychology, which emphasizes that psychological well-being is shaped not only by biological and environmental factors, but also by cognitive patterns, emotion-regulation skills, and motivational resources that can be strengthened through evidence-based psychological and educational interventions (Li et al., 2024). Within this integrative framework, the current study supports the view that Mindfulness is a dynamic and modifiable psychological resource that directly contributes to academic excellence, athletic performance, and long-term psychological well-being. This conclusion is consistent with recent evidence highlighting the role of Mindfulness in ... enhancing emotional regulation, psychological resilience, and adaptive responses to stress, particularly among gifted and athletic populations (Li et al., 2024). Regarding gender, the findings indicated no statistically significant differences between male and female participants in overall psychological well-being or its subdimensions. This pattern is consistent with recent research suggesting that differences in mental health and well-being among university students and athletes are more strongly associated with contextual and environmental factors such as perceived social support, the quality of the training and learning climate, and institutional practices related to fairness and inclusion than with gender per se (Martinent et al., 2024). Collectively, these results highlight the critical role of equitable, supportive, and psychologically safe educational and athletic environments in promoting balanced psychological well-being across genders.

#### *The Relationship Between Mindfulness and Psychological Well-Being (Integrated with Recent Studies)*

The analysis presented in Table 5 revealed a statistically significant positive correlation between mindfulness and psychological well-being, suggesting that these constructs operate within an integrated, mutually reinforcing system. Gifted student-athletes exhibiting higher levels of mindfulness tend to demonstrate more adaptive psychological functioning, including positive cognitive appraisals, enhanced emotional regulation, and greater flexibility in coping with combined academic and athletic demands. These adaptive characteristics are reflected in their social interactions, decision-making processes, and self-perception, which collectively support psychological balance and sustained performance. This relationship can be understood through

mindfulness's role in optimizing the use of cognitive and emotional resources, such as sustained attention, mental alertness, and emotional awareness. By fostering present-moment focus and self-regulatory capacity, mindfulness facilitates social adjustment and psychological resilience, particularly in high-demand performance contexts. Consistent with this interpretation, recent meta-analytic and empirical evidence indicate that individuals with higher mindfulness levels demonstrate stronger executive functioning, improved emotional control, and more adaptive stress responses, especially among high-performing and gifted populations (Li et al., 2024).

Moreover, the present findings align with contemporary literature that emphasizes the essential contributions of physical education and regular physical activity to the development of both mindfulness and psychological well-being. Empirical studies consistently report that students who engage in structured, regular physical activity display higher levels of mental energy, attentional focus, self-discipline, and emotional stability than their less active peers (White et al., 2024). Correlational evidence further demonstrates robust positive associations among physical activity, mindfulness, and psychological well-being, suggesting that physically active students are better equipped to manage cognitive load, emotional demands, and academic stressors (Alecú & Onea, 2025).

From a theoretical standpoint, the present findings can be effectively interpreted within mind-body integration perspectives, which suggest that optimal cognitive, emotional, and psychological functioning emerges through the continuous interaction of neural, emotional, and motor systems activated during structured physical activity. Within this framework, physical education should be conceptualized not merely as a context for physical fitness development, but as an essential educational domain that supports mindfulness, emotional regulation, and stress reduction. Consistent with this view, recent empirical studies indicate that regular engagement in physical education and organized sport is associated with enhanced executive functions, including attentional control, working memory, and emotional self-regulation. These cognitive and affective processes are closely linked to improved psychological well-being and academic functioning, particularly among students exposed to cognitively demanding and emotionally supportive physical activity environments. Accordingly, the findings underscore the educational value of physical education as a holistic contributor to students' mental health and learning outcomes (Diamond & Ling, 2024; Aslam et al., 2025; Qi, 2025).

Taken together, the findings support the proposition that physical education operates as an effective mediating pathway linking physical health, mindfulness, and psychological well-being, particularly among gifted students, who tend to be highly responsive to cognitive and physical stimulation. Accordingly, the study recommends the systematic integration of structured, targeted physical education programs into gifted education systems to foster mindfulness and promote holistic psychological health. Overall, the results, supported by recent empirical evidence, underscore the central role of mindfulness as a dynamic and trainable psychological resource essential for sustaining motivation, performance, and psychological well-being across both academic and athletic domains.

### *Research Contribution*

This study contributes to the literature on gifted education and sport psychology by providing descriptive correlational evidence on the relationship between mindfulness and psychological well-being among gifted student-athletes. The study conceptualizes mindfulness as a dynamic and developable psychological resource associated with adaptive functioning in both academic and athletic contexts. The findings also offer practical implications for integrating mindfulness-informed practices into academic and athletic support programs, while remaining consistent with the boundaries of a descriptive design and avoiding causal claims.

### *Limitations*

Despite its contributions, this study has several methodological limitations. The use of a descriptive correlational design restricts causal interpretation of the relationships among variables. In addition, the sample size and characteristics may limit the generalizability of the findings. The reliance on self-report measures may also introduce response bias. Furthermore, the cross-sectional

nature of the study does not allow for examination of developmental changes in mindfulness and psychological well-being over time.

### *Suggestions*

Future research is encouraged to adopt longitudinal, experimental, or quasi-experimental designs to examine causal relationships and the effectiveness of mindfulness-based interventions. Studies with larger and more diverse samples are recommended to enhance generalizability. Future investigations should also examine moderating variables, such as gender, sport type, training intensity, and levels of family and institutional support. Additionally, greater attention should be given to cultural context, particularly in Arab educational settings, when designing and implementing mindfulness-based programs to support sustainable psychological well-being among gifted student-athletes.

### **CONCLUSION**

This study highlights a positive association between mindfulness and psychological well-being among gifted student-athletes, framing mindfulness as a dynamic and developable resource rather than a fixed trait. The findings indicate that athletic excellence alone does not guarantee optimal psychological functioning, emphasizing the importance of intentional psychological support. Practically, the results support integrating mindfulness-informed practices with structured physical activity in gifted education programs. While causal inferences cannot be made, the study provides a basis for future longitudinal and intervention-based research.

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### **AUTHOR CONTRIBUTION STATEMENT**

KA designed the study, performed the data analysis, and drafted the initial version of the manuscript. MA contributed to data collection, literature review, and interpretation of findings. AS supervised the research process, provided critical revisions, and approved the final version of the manuscript for publication. All authors read and agreed to the published version of the manuscript.

### **AI DISCLOSURE STATEMENT**

The authors declare that artificial intelligence tools were used exclusively for language editing and to improve the clarity and style of the manuscript. The use of these tools had no impact on the scientific content, data analysis, results, or conclusions of the study. The authors assume full responsibility for the originality, accuracy, and scientific integrity of the work.

### **CONFLICT OF INTEREST**

The authors declare that there are no financial, personal, or professional relationships that could be construed as a potential conflict of interest in relation to this study.

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