



# Examining the mediating role of perceived psychosocial support in the relationship between sport grit and psychological well-being among high school student-athletes

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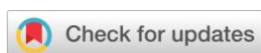
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## ABSTRACT

**Background:** Psychological well-being is essential for student-athletes because they must simultaneously cope with competitive sport demands and academic responsibilities. Although both sport grit and perceived psychosocial support have been associated with positive psychological outcomes, the mediating role of psychosocial support in the relationship between sport grit and psychological well-being remains insufficiently understood.

**Objectives:** This study examined whether perceived psychosocial support mediates the relationship between sport grit and psychological well-being among high school student-athletes.

**Methods:** A quantitative cross-sectional correlational design with a mediation analysis framework was employed. A total of 362 high school student-athletes from the first district of La Union, Philippines, participated using total enumeration sampling. Data were collected using standardized questionnaires assessing sport grit, psychological well-being, and perceived psychosocial support. Descriptive statistics, regression analysis, and bias-corrected bootstrap mediation analysis (5,000 resamples) were performed using JASP.

**Results:** Student-athletes reported high levels of sport grit, psychological well-being, and perceived psychosocial support. Sport grit significantly and positively predicted psychological well-being, whereas it did not significantly predict perceived psychosocial support. Perceived psychosocial support demonstrated a significant but negative association with psychological well-being. Furthermore, the indirect effect of sport grit on psychological well-being through perceived psychosocial support was not statistically significant, indicating the absence of a mediating effect.

**Conclusions:** Sport grit is an important direct psychological resource associated with psychological well-being among high school student-athletes. Although perceived psychosocial support contributes to athletes' psychological functioning, it does not explain the relationship between sport grit and psychological well-being. These findings highlight the importance of strengthening athletes' internal psychological resources while maintaining supportive sport environments.

**Keywords:** psychological well-being, psychosocial support, sport grit, student-athletes.

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## INTRODUCTION

Participation in sport provides substantial physical, psychological, and social benefits throughout the lifespan (Eather et al., 2023). Beyond physical performance, athletes must cope with ongoing competitive demands, intensive training schedules, academic responsibilities, and social expectations that collectively place substantial strain on their psychological functioning. Student-athletes are particularly vulnerable because they must simultaneously balance educational commitments with athletic performance, exposing them to unique dual-career demands that may adversely affect their mental health and psychological well-being (Kegelaers et al., 2024; Stambulova & Wylleman, 2019). Consequently, maintaining psychological well-being has become an essential component of athlete development, as it influences not only performance but also long-term mental health and overall quality of life (Kuettel & Larsen, 2020; Henriksen et al., 2020). Despite increasing recognition of mental health in sport, competitive environments continue to emphasize mental toughness, often discouraging athletes from seeking psychological assistance when needed (Alberto et al., 2021).

Among the personal characteristics that contribute to positive psychological functioning, sport grit has attracted increasing attention in sport psychology. Sport grit refers to athletes' perseverance and sustained passion for achieving long-term sport-related goals despite setbacks and challenges (Cormier et al., 2025). Participation in sport naturally cultivates grit because athletes are regularly exposed to physical, psychological, and social demands that require persistence and self-regulation (Nothnagle & Knoester, 2022). Previous studies have shown that athletes with higher levels of grit demonstrate stronger motivation, adaptive coping strategies, emotional resilience, and greater life satisfaction, all of which contribute to healthier psychological functioning (Cormier et al., 2021; From et al., 2021; Gray et al., 2023). These findings suggest that grit serves as an important internal psychological resource that supports athletes' well-being.

Psychological well-being is increasingly recognized as a fundamental outcome of successful athlete development. Athletes frequently encounter stressors such as performance pressure, injuries, travel demands, uncertain career pathways, and public expectations, which may threaten their mental health if not effectively managed (Kuettel & Larsen, 2020). Previous evidence indicates that disruptions to regular sport participation, such as those experienced during the COVID-19 pandemic, were associated with reduced psychological well-being among student-athletes (Hagiwara et al., 2021). Similarly, athletic identity and psychological resilience have been identified as protective factors that help athletes adapt to stressful situations and maintain positive mental health (Graupensperger et al., 2020; Blando, 2024). These findings highlight that psychological well-being is influenced by multiple psychological resources rather than athletic performance alone.

In addition to individual characteristics, psychosocial support represents an important environmental resource that facilitates athletes' psychological adjustment. Support received from coaches, teammates, family members, and schools provides emotional encouragement, informational guidance, practical assistance, and a sense of belonging that enable athletes to cope more effectively with competitive stress (Maciel et al., 2021). Previous studies consistently report positive associations between perceived social support and athletes' psychological well-being, emphasizing

that supportive sport environments promote healthier psychological functioning and greater resilience (Hagiwara et al., 2021; Kuettel & Larsen, 2020). Although sport grit and psychosocial support have each been linked to psychological well-being, how these constructs interact to explain athletes' well-being remains insufficiently understood.

Previous research demonstrates a clear progression in understanding the role of psychosocial support in sport. Hagiwara et al. (2021) established that perceived social support positively predicts psychological well-being among university student-athletes, highlighting its protective role in mental health. Building on this evidence, Freeman & Rees (2022) broadened the perspective by demonstrating that social support enhances not only psychological functioning but also athletes' performance and adaptation within competitive sport environments. More recently, Lee & Oh (2025) extended this line of inquiry by identifying social support as a moderator of the relationship between grit and psychological well-being among collegiate athletes. Although these studies collectively confirm the importance of psychosocial support, they have primarily examined its direct or moderating role, leaving unanswered whether psychosocial support functions as an underlying mediating mechanism through which sport grit contributes to athletes' psychological well-being.

Therefore, an important research gap remains. Existing evidence has not adequately explained how sport grit contributes to psychological well-being through athletes' perceived psychosocial support, particularly among high school student-athletes. Adolescence represents a unique developmental stage during which athletes rely heavily on support from coaches, peers, family, and schools while simultaneously developing important psychological characteristics that facilitate adaptation and long-term achievement, including grit (Chu & Zhang, 2019; Duckworth et al., 2007). Understanding whether perceived psychosocial support functions as a mediator may therefore provide a more comprehensive explanation of the relationship between internal psychological resources and psychological well-being.

To the best of our knowledge, no previous study has specifically examined perceived psychosocial support as a mediating mechanism linking sport grit and psychological well-being among high school student-athletes. The present study addresses this gap by testing a mediation model that extends previous literature beyond direct and moderating relationships, thereby providing a more comprehensive understanding of the psychological processes underlying athletes' well-being.

The present study contributes to the growing literature on positive sport psychology by integrating sport grit, perceived psychosocial support, and psychological well-being into a single mediation framework. By examining the psychological mechanism through which grit may influence well-being, this study extends previous evidence that has primarily focused on direct or moderating relationships. This study contributes to the literature by clarifying whether perceived psychosocial support represents the psychological mechanism linking sport grit and psychological well-being. In practice, the results may assist coaches, schools, and sports organizations in designing evidence-based psychosocial interventions that strengthen student-athletes' mental health.

Therefore, this study aimed to examine the mediating role of perceived psychosocial support in the relationship between sport grit and psychological well-being among high school student-athletes. Based on the theoretical framework and previous empirical findings, the following hypotheses were proposed:

H1: Sport grit positively predicts psychological well-being among high school student-athletes.

H2: Sport grit positively predicts perceived psychosocial support among high school student-athletes.

H3: Perceived psychosocial support positively predicts psychological well-being among high school student-athletes.

H4: Perceived psychosocial support mediates the relationship between sport grit and psychological well-being among high school student-athletes.

## METHODS

### Study Design and Participants

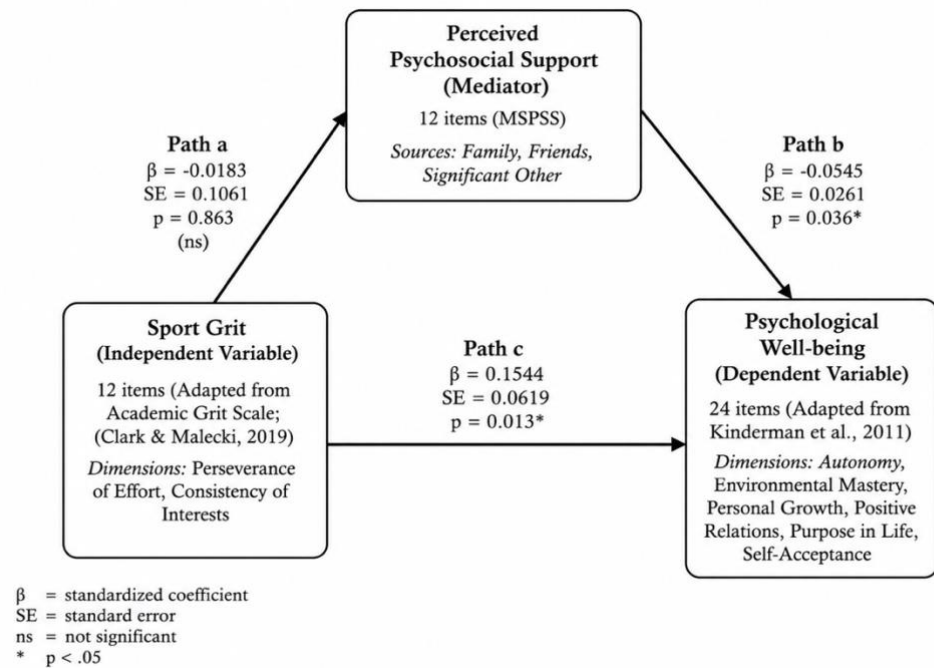
This study employed a quantitative cross-sectional correlational design to examine the relationships among sport grit, perceived psychosocial support, and psychological well-being among high school student-athletes. A mediation analysis framework was adopted to examine whether perceived psychosocial support explains the relationship between sport grit and psychological well-being.

A total of 362 eligible high school student-athletes from the first district of La Union were invited to participate, and all completed the survey, yielding a 100% response rate (Table 1). Because the target population consisted of only 362 student-athletes, total enumeration sampling was employed. Participants were eligible if they (1) were enrolled in either junior or senior high school and (2) had participated in the 2025 Provincial Meet in one of the following sports: basketball, volleyball, athletics, swimming, badminton, table tennis, softball, taekwondo, sepak takraw, chess, gymnastics, boxing, archery, and futsal.

The study was conducted in the first district of La Union, Philippines, which comprises the municipalities of Bacnotan, San Gabriel, Luna, Balaoan, Sudipen, Santol, and Bangar. These municipalities were included because the district contributed the largest delegation to the 2025 Provincial Meet.

**Table 1.** Number of Respondents per District or Municipalities

| District    | Number of respondents |
|-------------|-----------------------|
| Bacnotan    | 18                    |
| Balaoan     | 17                    |
| Luna        | 138                   |
| Santol      | 35                    |
| Bangar      | 98                    |
| Sudipen     | 21                    |
| San Gabriel | 15                    |
| San Juan    | 20                    |
| Total       | 362                   |



**Figure1.** Mediation Analysis Framework

## Ethical approval statement

The research adheres to the Declaration of Ethical Guidelines and has received approval from Saint Louis College, Lingsat, San Fernando, La Union, under the assigned approval number 2425-244 SAS.

## Research Instrument

Sport grit was assessed using an instrument adapted from the Academic Grit Scale developed by [Clark & Malecki \(2019\)](#) to reflect the sport context. Psychological well-being was measured using the 24-item Psychological Well-being Questionnaire developed by [Kinderman et al. \(2011\)](#), which assesses individuals' subjective well-being across multiple domains. Perceived psychosocial support was measured using the Multidimensional Scale of Perceived Social Support (MSPSS), a 12-item instrument that evaluates perceived support from family, friends, and a significant other.

All instruments employed a Likert-type response format, with higher scores indicating higher levels of the corresponding construct. The questionnaires used in this study were adopted from previously validated instruments and were administered in English.

Prior to hypothesis testing, the psychometric properties of the instruments were evaluated to ensure their reliability and validity. Internal consistency reliability was assessed using Cronbach's alpha, while Composite Reliability (CR) and Average Variance Extracted (AVE) were used to evaluate construct reliability and convergent validity, respectively. All instruments met the recommended psychometric criteria, with Cronbach's alpha and Composite Reliability exceeding 0.70 and Average Variance Extracted exceeding 0.50, indicating satisfactory internal consistency, construct reliability, and convergent validity. In addition, content validity was established through expert review by three specialists in sport psychology and

educational measurement, who evaluated the relevance, clarity, and appropriateness of each questionnaire item prior to data collection.

### **Data Collection**

Prior to data collection, formal approval was obtained from the Schools Division Superintendent of La Union, followed by permission from the respective cluster coordinators and school principals. Eligible participants were identified based on the following inclusion criteria: (1) enrollment as junior or senior high school students and (2) participation in the 2025 Provincial Meet. Because all participants were minors, written informed consent was obtained from both the participants and their parents or legal guardians before participation. Data were then collected using self-administered questionnaires distributed via Google Forms and supervised face-to-face administration at participating schools. During the on-site administration, participants completed the questionnaires individually under the supervision of the research team to ensure standardized data collection procedures and minimize missing responses.

Prior to the main survey, the adapted questionnaires underwent content validation by three experts comprising one senior MAPEH teacher and two licensed psychometricians with postgraduate qualifications and experience in educational assessment and student-athlete development. The experts evaluated the relevance, clarity, and appropriateness of each questionnaire item before data collection commenced.

### **Data Analysis**

Data were analyzed using JASP statistical software with a significance level of  $p < .05$ . Descriptive statistics (frequencies, means, and standard deviations) were computed to summarize participant characteristics and study variables. Simple regression analysis was performed to examine the direct effects among the constructs. Subsequently, mediation analysis was conducted using a bias-corrected bootstrap procedure with 5,000 resamples to test the indirect effect of perceived psychosocial support on the relationship between sport grit and psychological well-being. Statistical significance was determined using 95% bias-corrected confidence intervals, with an indirect effect considered significant when the confidence interval did not include zero.

## **RESULTS**

### **Mean of the Sport Grit, Perceived Psychosocial Support and Psychological Well-being of the Athletes**

This study examined the level of sport grit, psychological well-being, and perceived psychosocial support among student-athletes. [Table 2](#) presents the weighted mean scores and descriptive equivalents for each variable.

The results indicate that the student-athletes demonstrated a high level of sport grit, with a weighted mean of 3.98, which is interpreted as High Level (HL). This finding suggests that the athletes possess strong perseverance, determination, and sustained commitment toward achieving their long-term sports goals. Despite challenges encountered during training and competition, the athletes maintain effort and remain focused on improving their performance.

In terms of psychological well-being, the athletes obtained a weighted mean of 4.19, which is also interpreted as High Level (HL). This result indicates that the respondents generally experience positive mental and emotional states in relation to their sports participation. The athletes maintain optimism, emotional stability, and satisfaction in their athletic involvement, enabling them to cope effectively with pressure, training demands, and competitive challenges.

Regarding perceived psychosocial support, the findings reveal that athletes highly perceived the support they received across all dimensions, with an overall mean of 3.88, interpreted as Highly Perceived (HP).

**Table 2.** Descriptive statistics of sport grit, perceived psychosocial support, and psychological well-being

| Variable                       | Mean | SD    |
|--------------------------------|------|-------|
| Sport Grit                     | 3.98 | 0.131 |
| Psychological Well-being       | 4.19 | 0.105 |
| Perceived Psychosocial Support | 3.88 | 0.130 |
| – Emotional Support            | 3.79 | 0.098 |
| – Belonging Support            | 3.87 | 0.103 |
| – Informational Support        | 3.88 | 0.112 |
| – Tangible Support             | 3.88 | 0.095 |
| – Spiritual Support            | 3.91 | 0.115 |

Table 2 presents the descriptive statistics of the study variables. Participants reported high levels of sport grit ( $M = 3.98$ ,  $SD = 0.131$ ), psychological well-being ( $M = 4.19$ ,  $SD = 0.105$ ), and perceived psychosocial support ( $M = 3.88$ ,  $SD = 0.130$ ). Among the psychosocial support dimensions, spiritual support obtained the highest mean score ( $M = 3.91$ ,  $SD = 0.115$ ), whereas emotional support showed the lowest mean score ( $M = 3.79$ ,  $SD = 0.098$ ). Overall, the findings indicate that the respondents perceived strong psychosocial support and demonstrated favorable levels of sport grit and psychological well-being.

### Direct Effects of Sport Grit and Perceived Psychosocial Support on Psychological Well-Being

Table 3 presents the direct path estimates of the proposed mediation model. Sport grit did not significantly predict perceived psychosocial support ( $\beta = -0.018$ ,  $SE = 0.106$ ,  $Z = -0.172$ ,  $p = .863$ , 95% CI  $[-0.239, 0.193]$ ), indicating that athletes' perseverance and passion for long-term sport goals were not associated with their perceived psychosocial support. In contrast, perceived psychosocial support significantly predicted psychological well-being ( $\beta = -0.055$ ,  $SE = 0.026$ ,  $Z = -2.092$ ,  $p = .036$ , 95% CI  $[-0.106, -0.003]$ ). However, the negative regression coefficient indicates an inverse association between the two variables. Furthermore, sport grit significantly predicted psychological well-being ( $\beta = 0.154$ ,  $SE = 0.062$ ,  $Z = 2.494$ ,  $p = .013$ , 95% CI  $[0.039, 0.284]$ ), suggesting that athletes with higher levels of sport grit tended to report better psychological well-being.

Overall, the findings indicate that only sport grit showed a positive direct association with psychological well-being, whereas perceived psychosocial support showed a statistically significant negative association. Unexpectedly, the association between perceived psychosocial support and psychological well-being was negative, contrary to the proposed hypothesis. Accordingly, H1 was supported, H2 was not supported, and H3 was not supported because the observed association between perceived psychosocial support and psychological well-being was statistically significant but opposite to the hypothesized positive direction ( $\beta = -0.055$ ,  $p = .036$ ).

**Table 3.** Direct Path Estimates of the Mediation Model

| Path                                            | $\beta$ | SE    | 95% CI         | Z      | p     |
|-------------------------------------------------|---------|-------|----------------|--------|-------|
| Sport Grit → Psychosocial Support               | -0.018  | 0.106 | -0.239, 0.193  | -0.172 | .863  |
| Psychosocial Support → Psychological Well-being | -0.055  | 0.026 | -0.106, -0.003 | -2.092 | .036* |
| Sport Grit → Psychological Well-being           | 0.154   | 0.062 | 0.039, 0.284   | 2.494  | .013* |

\* $p < .05$

### Mediation Analysis of Sport Grit, Psychosocial Support and Psychological Well-being

Table 4 presents the mediation analysis examining whether perceived psychosocial support mediates the relationship between sport grit and psychological well-being. The indirect effect of sport grit on psychological well-being through perceived psychosocial support was not statistically significant ( $\beta = 0.001$ ,  $SE = 0.007$ ,  $Z = 0.150$ ,  $p = .881$ , 95% CI [-0.013, 0.016]). Because the confidence interval included zero, the proposed mediating effect of perceived psychosocial support was not supported. Therefore, H4 was not supported.

**Table 4.** Mediation Effects of Perceived Psychosocial Support

| Effect                                                                         | $\beta$ | SE    | 95% CI        | Z     | p     |
|--------------------------------------------------------------------------------|---------|-------|---------------|-------|-------|
| Indirect effect (Sport Grit → Psychosocial Support → Psychological Well-being) | 0.001   | 0.007 | -0.013, 0.016 | 0.150 | .881  |
| Direct effect (Sport Grit → Psychological Well-being)                          | 0.154   | 0.062 | 0.039, 0.284  | 2.494 | .013* |
| Total effect                                                                   | 0.155   | 0.062 | 0.038, 0.286  | 2.514 | .012* |

Note. 95% bias-corrected bootstrap confidence intervals based on 5,000 bootstrap samples. \* $p < .05$ .

The direct effect of sport grit on psychological well-being remained statistically significant ( $\beta = 0.154$ ,  $SE = 0.062$ ,  $Z = 2.494$ ,  $p = .013$ , 95% CI [0.039, 0.284]), indicating that athletes with higher levels of sport grit tended to report better psychological well-being independently of perceived psychosocial support. Likewise, the total effect was statistically significant ( $\beta = 0.155$ ,  $SE = 0.062$ ,  $Z = 2.514$ ,  $p = .012$ , 95% CI [0.038, 0.286]). These findings suggest that sport grit contributes directly to psychological well-being, whereas perceived psychosocial support does not explain the mechanism through which this relationship occurs. Taken together, the findings indicate that the relationship between sport grit and psychological well-being operates primarily through a direct pathway rather than through perceived psychosocial support.

Based on the regression analysis, H1 was supported, as sport grit significantly and positively predicted psychological well-being ( $\beta = 0.154$ ,  $p = .013$ ). H2 was not supported because sport grit did not significantly predict perceived psychosocial support ( $\beta = -0.018$ ,  $p = .863$ ). H3 was not supported because the observed association between perceived psychosocial support and psychological well-being was statistically significant but opposite to the hypothesized positive direction ( $\beta = -0.055$ ,  $p = .036$ ). Furthermore, H4 was not supported because the indirect effect of sport grit on psychological well-being through perceived psychosocial support was not statistically significant ( $\beta = 0.001$ ,  $p = .881$ ).

## DISCUSSION

In general, this study highlights the complementary roles of internal psychological characteristics and external social resources in shaping the psychological well-being of high school student-athletes. The findings showed that participants reported high levels of sport grit, psychological well-being, and perceived psychosocial support. More importantly, sport grit emerged as a significant positive predictor of psychological well-being, whereas perceived psychosocial support did not mediate this relationship. Although psychosocial support was significantly associated with psychological well-being, its indirect effect was not statistically significant. These findings suggest that perseverance and sustained commitment toward long-term sport goals constitute an important internal psychological resource that contributes directly to athletes' well-being.

Contrary to the proposed hypothesis, sport grit did not significantly predict perceived psychosocial support among student-athletes. This finding suggests that athletes' perseverance and passion for long-term sport goals develop independently of the level of psychosocial support they perceive from coaches, teammates, family members, or schools. One possible explanation is that grit is primarily regarded as an individual psychological characteristic reflecting sustained perseverance of effort and consistency of interests toward long-term goals, rather than as a direct consequence of external social support (Duckworth et al., 2007; Duckworth & Gross, 2014). Although supportive coaching practices and positive team environments remain important for athlete development (Freeman & Rees, 2022), the present findings indicate that these external resources may not necessarily determine how gritty athletes perceive psychosocial support.

The present findings demonstrate that sport grit significantly and positively predicts psychological well-being among student-athletes. Athletes who consistently pursue long-term goals and remain resilient in the face of setbacks tend to report better psychological functioning and subjective well-being (Hou et al., 2022). Within competitive sport settings, perseverance, sustained effort, and long-term commitment may enable athletes to manage performance pressure, academic demands, and training challenges more effectively (Cormier et al., 2024). Athletes with higher levels of grit are also more likely to sustain intrinsic motivation, regulate emotional responses to adversity, and persist toward valued goals, thereby supporting positive psychological functioning (Duckworth & Gross, 2014; Datu, 2021). These findings are consistent with previous studies showing that athletes with higher levels of grit exhibit stronger psychological adjustment, adaptive coping strategies, and greater emotional resilience (Cormier et al., 2021; From et al., 2021).

Unexpectedly, perceived psychosocial support demonstrated a statistically significant but negative association with psychological well-being. This finding contrasts with the original hypothesis and previous studies reporting positive relationships between social support and athletes' mental health (Freeman & Rees, 2022; Luo et al., 2025). One possible explanation is that student-athletes experiencing greater psychological challenges may actively seek or receive more support from coaches, teammates, and family members, resulting in a negative statistical association. Another possibility is that the relatively high levels of psychosocial

support and psychological well-being observed across participants reduced variability, thereby influencing the direction of the regression coefficient. Consequently, this finding should be interpreted cautiously and verified in future longitudinal studies.

The mediation analysis further demonstrated that perceived psychosocial support did not mediate the effect of sport grit on psychological well-being. Although psychosocial support was independently associated with psychological well-being, it did not transmit the effect of grit on psychological well-being. This finding suggests that grit's contribution operates primarily through direct psychological processes rather than through perceived external support. Athletes with strong perseverance and sustained commitment may rely more heavily on self-regulation, intrinsic motivation, and adaptive coping strategies when responding to sport-related challenges (Cormier et al., 2021; From et al., 2021; Lundqvist, 2022). One possible explanation is that grit functions as a relatively stable personality trait, whereas perceived psychosocial support is context-dependent and may fluctuate with situational experiences. Consequently, psychosocial support may contribute independently to psychological well-being rather than serving as the mechanism linking grit with well-being.

From a practical perspective, these findings emphasize the importance of developing athletes' internal psychological resources alongside maintaining supportive sport environments. Coaches, teachers, and sports organizations should implement interventions to strengthen perseverance, resilience, self-regulation, and commitment to long-term goals through mental skills training and structured goal-setting programs. Although psychosocial support did not function as a mediator in the present study, maintaining positive relationships with coaches, teammates, and family members remains essential for fostering healthy athlete development and promoting adaptive psychological functioning (Chu & Zhang, 2019; Harwood & Knight, 2015).

Overall, this study contributes to the growing literature in sport psychology by demonstrating that sport grit is a stronger direct predictor of psychological well-being than perceived psychosocial support in this sample of high school student-athletes. Furthermore, this study extends previous research by empirically testing perceived psychosocial support as a mediator rather than solely as a direct predictor or moderator. The absence of a significant mediation effect suggests that the relationship between grit and psychological well-being is primarily driven by athletes' internal psychological resources, providing new evidence regarding the psychological mechanisms underlying well-being in adolescent athletes.

### **Limitations of the study**

Several limitations of the study should be acknowledged. First, although the sample size was adequate for the planned analyses, it was drawn from a single educational district, which may have limited the variability of participant characteristics and reduced the ability to detect more complex relationships among the study variables. Future studies should include more heterogeneous samples across different regions and educational contexts.

Second, the sample was restricted to athletes who participated in the Provincial Athletic Meet, which limits the generalizability of the findings to other athletic populations. Future research may benefit from including athletes from municipal,

regional, or national competitions to examine whether similar patterns emerge across varying levels of competition.

Third, restricted variability across measures suggests a possible ceiling effect, which may have limited the detection of significant relationships among variables. Employing more sensitive measurement instruments or including participants with a more diverse range of performance levels may increase variability and analytic sensitivity.

Fourth, reliance on self-report questionnaires introduces potential response biases, including social desirability and contextual influences in team or coaching environments. Future studies may strengthen validity by incorporating multi-method approaches, such as qualitative interviews or observational data, to provide a more comprehensive understanding of athletes' experiences.

Another limitation concerns the unexpected negative association between perceived psychosocial support and psychological well-being. Although statistically significant, this finding was inconsistent with theoretical expectations and previous empirical evidence. Unmeasured contextual factors, measurement characteristics, or restricted variability within the sample may have influenced it. Future studies should examine additional psychological, social, and environmental variables to explain this unexpected relationship better.

Finally, the cross-sectional design precludes causal inferences regarding the relationships among sport grit, perceived psychosocial support, and psychological well-being. Longitudinal research designs are recommended to capture developmental changes better and clarify the directional pathways among these constructs over time.

## CONCLUSION

This study demonstrated that sport grit is a significant direct predictor of psychological well-being among high school student-athletes, whereas perceived psychosocial support did not mediate this relationship. Although student-athletes reported high levels of sport grit, psychological well-being, and psychosocial support, the findings suggest that psychological well-being is more strongly associated with internal psychological resources than with indirect psychosocial mechanisms. These results highlight the importance of fostering perseverance, resilience, and long-term commitment to goals while maintaining supportive sports environments. Future research should employ longitudinal designs and broader athlete populations to clarify the complex interplay between psychological resources and psychosocial support across different sporting contexts.

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## AI DISCLOSURE STATEMENT

During the preparation of this manuscript, the authors used DeepL Translate to assist with language translation and Grammarly to improve grammar, spelling, punctuation, and language clarity. All outputs were carefully reviewed, revised, and verified by the authors to ensure the accuracy, originality, and integrity of the manuscript. The authors assume full responsibility for the content of this manuscript.

## DATA AVAILABILITY

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## FUNDING

This research does not receive external funding.

## CONFLICT OF INTEREST

The authors declare no conflict of interest.

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