

EFFECTS OF SPORT PSYCHOLOGICAL CAPITAL AND ATHLETIC BURNOUT ON ATHLETIC PERFORMANCE AMONG COLLEGIATE TAEKWONDO ATHLETES

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Abstract:

This study examines the relationships among Sport Psychological Capital, athletic burnout, and Athletic Performance among collegiate Taekwondo athletes. An online questionnaire survey using convenience sampling was conducted with athletes competing in the collegiate open division in Taiwan. A total of 103 valid questionnaires were collected, resulting in a valid response rate of 98.09%. The results showed that Sport Psychological Capital had a significant

negative effect on athletic burnout, suggesting that athletes with higher levels of psychological capital, including hope, optimism, resilience, and self-efficacy, were less likely to experience physical and emotional exhaustion and sport devaluation. Sport Psychological Capital also had a significant positive effect on Athletic Performance, indicating that positive psychological resources were associated with better competitive performance and greater technical stability. In contrast, athletic burnout had a significant negative effect on Athletic Performance, indicating that physical and psychological exhaustion was associated with poorer Athletic Performance. In addition, athletic burnout partially mediated the relationship between Sport Psychological Capital and Athletic Performance. Overall, the findings suggest that Sport Psychological Capital is related to Athletic Performance both directly and indirectly through reduced athletic burnout. Thus, reducing athletic burnout may be an important pathway through which athletes can better translate their psychological resources into Athletic Performance. Coaches and sports teams are therefore encouraged to incorporate psychological capital development and systematic recovery management into regular training programs to help athletes maintain stable competitive performance.

Keywords: Taekwondo, Sport Psychological Capital, Psychological Resources, Competitive Performance, Mediation.

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INTRODUCTION

Collegiate Taekwondo athletes competing in the open division face demanding training schedules, frequent competitions, and academic pressure, which may increase their risk of emotional and psychological burnout (Hsieh et al., 2024; Jung & Koo, 2024; Jang & Lee, 2024). Sport Psychological Capital (PsyCap) refers to a developable positive psychological state rooted in positive organizational behavior and consists of four core components: hope, optimism, resilience, and self-efficacy (Batool et al., 2023). These psychological resources can help individuals maintain their psychological well-being and behavioral performance (Yu et al., 2025) and may serve as protective resources against prolonged stress while supporting competitive performance (Moon & Jung, 2023). In contrast, athletic burnout refers to a state of physical and psychological exhaustion caused by prolonged training demands and stress. It is commonly characterized by emotional/physical exhaustion, sport devaluation, and a reduced sense of accomplishment (Lee & Lee, 2023). Athletic burnout may also reduce athletes' engagement in training and competitive performance and negatively affect their psychological well-being (Jung & Koo, 2024).

Previous research has shown that Sport Psychological Capital can contribute to athletes' psychological well-being and Athletic Performance (Wang et al., 2024). However, empirical evidence remains limited among collegiate Taekwondo athletes in Taiwan, a group that regularly faces substantial training and competitive demands. It therefore remains important to understand whether Sport Psychological Capital can reduce athletic burnout and help athletes maintain stable performance. To address this issue, the present study draws on Conservation of Resources Theory (COR) and Social Cognitive Theory (SCT) to examine the relationships among positive psychological resources, resource depletion, and performance outcomes. Specifically, the study investigates how Sport Psychological Capital is associated with Athletic Performance through the reduction of athletic burnout.

Conservation of Resources Theory (COR) proposes that individuals strive to acquire, maintain, and protect resources that they value, while stress and burnout can emerge when these resources are threatened or lost. In competitive sport settings, Sport Psychological Capital can be viewed as an important internal psychological resource. Athletes with higher levels of PsyCap may have greater psychological resources and a stronger capacity to recover from demanding situations. These resources can help them cope with external stressors and, in turn, reduce the development of athletic burnout. Social Cognitive Theory (SCT), on the other hand, emphasizes the importance of human agency and self-regulatory beliefs, such as self-efficacy, in shaping behavior. Self-efficacy is not only an important component of Sport Psychological Capital but also plays an important role in Athletic Performance. Athletes with stronger self-efficacy may be more likely to view difficult technical tasks as manageable challenges and maintain their focus and technical performance under competitive pressure.

Accordingly, this study focuses on collegiate Taekwondo athletes and examines the relationships among Sport Psychological Capital, athletic burnout, and Athletic Performance. It also considers the four components of Sport Psychological Capital to provide a more detailed understanding of how these psychological resources may operate in competitive sport. By examining these relationships within a single framework, this study provides a clearer understanding of how positive psychological resources and athletic burnout are associated with Athletic Performance among collegiate Taekwondo athletes.

METHODS

1. Research Framework and Hypotheses

This study considers Sport Psychological Capital as an antecedent of athletic burnout and Athletic Performance and examines whether athletic burnout mediates the relationship between Sport Psychological Capital and

Athletic Performance. Based on the literature, the research framework includes three main constructs and four hypothesized relationships.

Athletes with higher levels of Sport Psychological Capital may be better able to cope with the demands and pressure associated with intensive training. In particular, psychological resources such as hope and self-efficacy can provide athletes with positive coping strategies, which may help reduce emotional and physical exhaustion under training pressure (Moon & Jung, 2023; Yu et al., 2025). Based on this reasoning, the following hypothesis is proposed:

H1. Sport Psychological Capital negatively affects athletic burnout among collegiate Taekwondo athletes.

Sport Psychological Capital may also play an important role in Athletic Performance. Its four components provide positive psychological resources that may help athletes maintain stable performance and make effective tactical decisions in highly demanding competitive environments (García-Naveira et al., 2025). Accordingly, the following hypothesis is proposed:

H2. Sport Psychological Capital positively affects Athletic Performance among collegiate Taekwondo athletes.

Athletic burnout, in contrast, may negatively affect athletes' ability to perform effectively. Previous research suggests that emotional and physical exhaustion may be associated with autonomic dysregulation and greater variability in complex movements (Glandorf et al., 2025; Zhou et al., 2026). A reduced sense of accomplishment may also weaken self-efficacy and contribute to performance difficulties under competitive pressure (Rajpoot, 2026). Together, these effects suggest that athletic burnout may impair athletes' competitive performance. Therefore, the following hypothesis is proposed:

H3. Athletic burnout negatively affects Athletic Performance among collegiate Taekwondo athletes.

Finally, drawing on Conservation of Resources Theory and Social Cognitive Theory, this study proposes that athletic burnout may serve as an important mechanism linking Sport

Psychological Capital to Athletic Performance. Under prolonged training pressure, the direct benefits of psychological resources for performance may be constrained when athletes experience high levels of burnout (Cai et al., 2025; Yu et al., 2025). Sport Psychological Capital may help reduce emotional/physical exhaustion and sport devaluation, allowing athletes to make better use of their existing physical and technical abilities. Based on this reasoning, the following hypothesis is proposed:

H4. Athletic burnout mediates the relationship between Sport Psychological Capital and Athletic Performance among collegiate Taekwondo athletes.

2. Participants and Data Collection

This study used convenience sampling to recruit collegiate Taekwondo athletes competing in the open division in Taiwan. Following the pretest, unsuitable questionnaire items were removed based on the analysis results, and the questionnaire was revised accordingly. The formal survey was conducted from March 1 to March 25, 2026. A total of 105 questionnaires were collected. After excluding two invalid responses, 103 valid questionnaires were retained for the final analysis, resulting in a valid response rate of 98.09%.

3. Measurement Instruments

Sport Psychological Capital. Sport Psychological Capital was measured using the scale developed by Luthans et al. (2007). The scale consists of 16 items covering four dimensions: self-efficacy, hope, optimism, and resilience. Self-efficacy refers to an individual's belief in their ability to invest the effort needed to complete challenging tasks and achieve a specific level of performance (Yu et al., 2025). Hope represents a positive motivational state that involves both the motivation to pursue goals and the ability to develop alternative pathways when needed to achieve those goals (Luthans et al., 2017; Snyder, 2002). Optimism reflects positive expectations about current and future success, including the tendency to expect positive outcomes and view setbacks as temporary (Sharma & Singh, 2025). Resilience refers to

the capacity to adapt and recover when facing adversity, uncertainty, or failure, and even to grow through challenging experiences (Tejero-González et al., 2023). All items were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Athletic burnout. Athletic burnout was measured using the Athlete Burnout Questionnaire (ABQ) developed by Raedeke and Smith (2001). To better fit the focus of this study, the original 15-item scale was reduced to 12 items covering three dimensions: emotional/physical exhaustion, reduced sense of accomplishment, and sport devaluation. Emotional/physical exhaustion refers to the exhaustion that may result from prolonged training demands and competitive pressure. Reduced sense of accomplishment reflects athletes' negative evaluations of their own abilities and achievements. Sport devaluation refers to a loss of interest in or reduced perceived value of the sport. All items were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Athletic Performance. Given the multidimensional nature of Athletic Performance, the measurement was developed based on the theoretical framework identified in the literature (Chen & Lee, 2024; Liu, 2025). Athletic Performance was assessed across four dimensions: physical fitness, technical skills, tactical/cognitive skills, and psychological skills, with a total of 16 items. All items were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

4. Data Analysis

SPSS 20.0 was used to conduct descriptive statistical analyses of the sample characteristics and study variables. Partial Least Squares Structural Equation Modeling (PLS-SEM) was then performed using SmartPLS 3.0 to assess the measurement and structural models. The measurement model was evaluated in terms of internal consistency reliability, convergent validity, and discriminant validity, followed by an assessment of the structural model to test the proposed hypotheses.

RESULTS

1. Sample Characteristics

A total of 103 valid responses were included in the analysis. Male athletes accounted for 54.37% of the sample. In terms of academic year, first- and second-year undergraduate students represented the largest group (44.66%), followed by third- to fifth-year undergraduate students (43.69%), while graduate students accounted for 11.65% of the sample. Regarding training experience, 51.46% of the athletes had trained in Taekwondo for 7–13 years, followed by 33.98% with 14–19 years of training experience, indicating that most participants had substantial experience in the sport. In terms of their highest competitive achievement, 54.37% had ranked among the top six in national competitions, while 30.10% had competed as city, county, or university team representatives. Approximately 15% had competed as national team members or ranked among the top six in international competitions. Overall, the sample consisted primarily of experienced collegiate Taekwondo athletes with competitive backgrounds.

2. Measurement Model Assessment

The measurement model was assessed in terms of internal consistency reliability, convergent validity, and discriminant validity. Sport Psychological Capital, athletic burnout, and Athletic Performance were modeled as second-order constructs based on their respective dimensions. The reliability and validity of these higher-order constructs were then assessed before testing the structural model.

As shown in Table 1, the factor loadings of the three constructs ranged from 0.927 to 0.961, exceeding the recommended threshold of 0.70 (Hair et al., 2021). Cronbach's alpha values ranged from 0.931 to 0.965, while composite reliability (CR) values ranged from 0.956 to 0.974. All values were above the recommended threshold of 0.70, indicating satisfactory internal consistency reliability. In addition, the average variance extracted (AVE) values ranged from 0.879 to 0.904, exceeding the recommended threshold of 0.50 (Fornell & Larcker, 1981). These results support the convergent validity of the measurement model.

Table 1. Measurement Model Assessment

Construct	No. of Di-mensions	Loading Range	Cronbach's α	CR	AVE
Sport Psychological Capital	4	0.947-0.955	0.965	0.974	0.904
Athletic burnout	3	0.927-0.958	0.931	0.956	0.879
Athletic Performance	4	0.944-0.961	0.963	0.973	0.901

Discriminant validity was assessed using the Fornell–Larcker criterion. The square root of the AVE for each construct should be greater than its correlations with the other constructs (Hair et al., 2021). As shown in Table 2, the square roots of the AVE values for Sport Psychological Capital, athletic burnout, and Athletic Performance were 0.951, 0.938, and 0.949,

respectively. Each value was greater than the corresponding inter-construct correlations, supporting the discriminant validity of the measurement model. Overall, the results demonstrated satisfactory reliability, convergent validity, and discriminant validity, supporting the use of the three constructs in the subsequent structural model analysis.

Table 2. Discriminant Validity

Construct	1	2	3
1. Sport Psychological Capital	0.951		
2. Athletic burnout	-0.646	0.938	
3. Athletic Performance	0.789	-0.761	0.949

3. Structural Model and Hypothesis Testing

Following the assessment of the measurement model, the structural model was examined to test the proposed relationships among Sport Psychological Capital, athletic burnout, and Athletic Performance. The standardized path coefficients, standard deviations, t-values, p-values, and hypothesis testing results are presented in Table 3.

The results showed that Sport Psychological Capital had a significant negative effect on athletic burnout ($\beta = -0.646$, $SD = 0.062$, $t = 10.406$, $p < .001$). This result indicates that higher levels of Sport Psychological Capital were associated with lower levels of athletic burnout among collegiate Taekwondo athletes. Therefore, H1 was supported.

Sport Psychological Capital also had a significant positive effect on Athletic Performance ($\beta = 0.557$, $SD = 0.120$, $t = 4.658$, $p < .001$). Athletes with higher levels of Sport Psychological Capital tended to report higher levels of Athletic Performance. Thus, H2 was supported. In addition, athletic burnout had a significant negative effect on Athletic Performance ($\beta = -0.479$, $SD = 0.112$, $t = 4.264$, $p < .001$), indicating that higher levels of athletic burnout were associated with lower levels of Athletic Performance. Therefore, H3 was supported.

The mediating role of athletic burnout was further examined. The indirect effect of Sport Psychological Capital on Athletic Performance through athletic burnout was positive and statistically significant ($\beta = 0.309$, $SD = 0.073$,

$t = 4.251$, $p < .001$). This result indicates that Sport Psychological Capital was indirectly associated with higher Athletic Performance through lower levels of athletic burnout. Since the direct relationship between Sport

Psychological Capital and Athletic Performance remained significant, athletic burnout partially mediated this relationship. Accordingly, H4 was supported.

Table 3. Structural Model Results and Hypothesis Testing

Hypothesized Relationship	β	SD	t-value	p-value	Result
Sport Psychological Capital → Athletic burnout	-0.646	0.062	10.406	< .001	Supported
Sport Psychological Capital → Athletic Performance	0.557	0.12	4.658	< .001	Supported
Athletic burnout → Athletic Performance	-0.479	0.112	4.264	< .001	Supported
Sport Psychological Capital → Athletic burnout → Athletic Performance	0.309	0.073	4.251	< .001	Supported

The explanatory power of the structural model was also assessed. The R^2 value for Athletic Performance was 0.751, indicating that Sport Psychological Capital and athletic burnout jointly explained 75.1% of the variance in Athletic Performance. The goodness-of-fit (GoF) index was calculated as the square root of the product of the average AVE and the average R^2 . The resulting GoF value was 0.721, exceeding the recommended threshold of 0.36 (Akter et al., 2011). Overall, the structural model demonstrated substantial explanatory power for Athletic Performance.

DISCUSSION

This study examined how Sport Psychological Capital and athletic burnout are related to Athletic Performance among collegiate Taekwondo athletes. The findings show that Sport Psychological Capital was negatively related to athletic burnout and positively related to Athletic Performance, while athletic burnout was negatively related to Athletic Performance. More importantly, athletic burnout partially mediated the relationship between Sport Psychological Capital and Athletic Performance. Together, these findings suggest that positive psychological resources are associated with Athletic Performance not only directly but also through

their relationship with athletic burnout.

The negative relationship between Sport Psychological Capital and athletic burnout is consistent with previous studies showing that psychological resources can help athletes cope with demanding training and competitive environments (Bojkowski, 2025; Liu et al., 2026). One possible explanation is that athletes with greater hope, optimism, resilience, and self-efficacy have more psychological resources available when facing intensive training, competitive pressure, or setbacks. Rather than allowing these demands to continuously drain their psychological resources, they may be better able to adjust to difficult situations and recover from them. This explanation is consistent with Conservation of Resources Theory, which suggests that individuals seek to protect and maintain resources that are important to them. From this perspective, Sport Psychological Capital may provide collegiate Taekwondo athletes with psychological resources that help them cope with continued demands and reduce the likelihood of athletic burnout.

The positive relationship between Sport Psychological Capital and Athletic Performance is also consistent with previous findings on the role of psychological resources in competitive



problematic in Taekwondo, where athletes need to maintain physical readiness, concentration, and rapid responses throughout competition.

Emotional and physical exhaustion may make it more difficult to sustain training quality and competitive intensity, while a reduced sense of accomplishment may weaken athletes'

performance (García-Naveira et al., 2025; Zhang & Han, 2026). Taekwondo requires athletes to respond quickly to changing competitive situations while maintaining concentration, confidence, and technical execution. Under such conditions, psychological resources may become particularly important. Athletes with stronger self-efficacy may have greater confidence in their ability to execute difficult techniques and deal with challenging opponents, while hope and optimism may help them remain goal-oriented when competition does not progress as expected. Resilience may further allow athletes to recover from mistakes or temporary disadvantages during competition. These processes are consistent with Social Cognitive Theory, which emphasizes the role of self-beliefs and self-regulation in shaping behavior and performance. Sport Psychological Capital may therefore support Athletic Performance by helping athletes maintain confidence, effort, and effective responses under competitive pressure.

Athletic burnout, in contrast, was negatively related to Athletic Performance, which is consistent with Saarinen et al. (2025) and Rajpoot (2026). Athletic burnout involves emotional/physical exhaustion, a reduced sense of accomplishment, and sport devaluation. These experiences may be particularly

confidence in their abilities. Sport devaluation may also reduce their willingness to remain fully engaged in training and competition. When these conditions occur together, athletes may find it increasingly difficult to maintain stable Athletic Performance.

The mediating role of athletic burnout provides a more complete explanation of the relationship between Sport Psychological Capital and Athletic Performance. Consistent with Cai et al. (2025) and Zhang (2025), the findings suggest that the benefits associated with Sport Psychological Capital may operate partly through lower levels of athletic burnout. Athletes with greater psychological resources may be better able to manage prolonged training and competitive demands, thereby experiencing less emotional/physical exhaustion, reduced sense of accomplishment, and sport devaluation. Lower levels of athletic burnout may, in turn, allow athletes to maintain the psychological and physical conditions needed for performance. This indirect pathway is particularly meaningful because it suggests that having positive psychological resources alone may not fully explain why some athletes perform better. How well these resources help athletes avoid psychological depletion may also matter. In this sense, athletic burnout provides an important link between athletes' positive psychological



resources and their Athletic Performance.

Taken together, these findings show that Sport Psychological Capital, athletic burnout, and Athletic Performance are closely connected among collegiate Taekwondo athletes. In particular, the partial mediating role of athletic burnout suggests that positive psychological resources are associated with performance not only directly but also through lower levels of burnout. These findings provide the basis for considering the theoretical and practical implications of the study.

CONCLUSION

1. Theoretical Implications

This study contributes to the understanding of psychological resources in collegiate sport by integrating Sport Psychological Capital, athletic burnout, and Athletic Performance within a single framework. The findings suggest that Sport Psychological Capital is related to Athletic Performance not only directly but also indirectly through lower levels of athletic burnout. This mediating role provides a more complete understanding of how athletes' positive psychological resources are associated with performance.

The findings also connect Conservation of

Resources Theory and Social Cognitive Theory in explaining these relationships. While Conservation of Resources Theory helps explain how Sport Psychological Capital may protect athletes from psychological resource depletion, Social Cognitive Theory explains how positive psychological resources can support confidence, self-regulation, and performance. Together, these perspectives suggest that Athletic Performance is related not only to the psychological resources athletes possess but also to their ability to maintain these resources under continued training and competitive demands.

2. Practical Implications

The findings provide practical implications for coaches and collegiate Taekwondo teams. Because Sport Psychological Capital was positively related to Athletic Performance and negatively related to athletic burnout, psychological development should be considered an important part of regular training. Coaches can incorporate activities that strengthen athletes' self-efficacy, hope, optimism, and resilience, such as goal setting, positive feedback, and psychological skills training. These practices may help athletes

better manage training and competitive pressure while maintaining stable performance.

The mediating role of athletic burnout also highlights the importance of burnout prevention and recovery management. Coaches and teams should pay attention to signs of emotional/physical exhaustion, reduced sense of accomplishment, and sport devaluation, particularly during periods of intensive training or competition. Regular monitoring of athletes' psychological condition, together with appropriate rest, recovery, and training adjustments, may help reduce athletic burnout and allow athletes to make better use of their psychological resources in training and competition.

3. Limitations and Future Research

This study has several limitations. First, the cross-sectional design limits the ability to determine causal relationships among Sport Psychological Capital, athletic burnout, and Athletic Performance. Future research could adopt longitudinal designs to examine how changes in psychological resources and athletic burnout are related to Athletic Performance over time. In addition, Athletic Performance was measured using athletes' self-reported perceptions, which may not fully reflect their actual competitive performance. Future studies could incorporate objective indicators, such as competition results or technical performance data, to provide a more comprehensive assessment of Athletic Performance.

Future research may also combine quantitative and qualitative approaches to better understand athletes' psychological experiences. For example, interviews could be used alongside quantitative data to explore how athletes experience and manage psychological resources and athletic burnout during different stages of training and competition. Such approaches may provide a more detailed understanding of the psychological processes associated with Athletic Performance.

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