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Mental toughness and its development among university student-athletes: implications for training interventions

Evaluación La fortaleza mental y su desarrollo en estudiantes-atletas universitarios: Implicaciones para intervenciones de entrenamiento

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Abstract

This study examined the level of mental toughness among university student-athletes at Batangas State University – The National Engineering University Pablo Borbon and identified key challenges to its development. Employing a descriptive-exploratory research design, both quantitative and qualitative data were gathered from 154 student-athletes representing various team and individual sports. A researcher-developed and expert-validated Mental Toughness Scale assessed five core dimensions: concentration, confidence, resilience (bouncing back), pressure management, and motivation. Results showed high overall mental toughness, particularly in motivation, concentration, and confidence. However, moderate scores in resilience and pressure management indicated difficulties in coping with setbacks and high-pressure situations. Qualitative findings revealed common barriers such as the absence of structured psychological training, academic stress, inconsistent coaching feedback, and limited access to mental health resources. Student-athlete recommendations emphasized the integration of mental skills training, stress management workshops, and emotionally intelligent coaching strategies. These findings underscore the need for comprehensive psychological support systems and athlete-centered interventions within university sports programs, contributing to broader efforts in promoting student-athlete welfare and mental resilience in higher education.

Keywords: mental toughness; student-athletes; psychological skills training; resilience; university sports

Resumen

Este estudio examinó el nivel de fortaleza mental entre los estudiantes-atletas universitarios de la Batangas State University – The National Engineering University Pablo Borbon e identificó los principales desafíos para su desarrollo. Empleando un diseño de investigación descriptivo-exploratorio, se recopilaron datos cuantitativos y cualitativos de 154 estudiantes-atletas que representan diversos deportes individuales y de equipo. Se utilizó una Escala de Fortaleza Mental, elaborada por el investigador y validada por expertos, para evaluar cinco dimensiones clave: concentración, confianza, resiliencia (capacidad de recuperación), manejo de la presión y motivación. Los resultados mostraron un alto nivel general de fortaleza mental, especialmente en motivación, concentración y confianza. Sin embargo, los puntajes moderados en resiliencia y manejo de la presión indicaron dificultades para afrontar fracasos y situaciones de alta exigencia. Los hallazgos cualitativos revelaron barreras comunes como la ausencia de entrenamiento psicológico estructurado, el estrés académico, la retroalimentación inconsistente de los entrenadores y el acceso limitado a recursos de salud mental. Las recomendaciones de los propios atletas destacaron la necesidad de integrar el entrenamiento en habilidades mentales, talleres de manejo del estrés y estrategias de entrenamiento emocionalmente inteligentes. Estos resultados subrayan la importancia de establecer sistemas integrales de apoyo psicológico e intervenciones centradas en el atleta dentro de los programas deportivos universitarios, contribuyendo así a los esfuerzos más amplios por promover el bienestar y la resiliencia mental de los estudiantes-atletas en la educación superior.

Palabras clave: fortaleza mental; estudiantes-atletas; entrenamiento psicológico; resiliencia; deportes universitarios

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Introduction

Mental toughness is increasingly recognized as a vital psychological construct in competitive sports, influencing not only athletic performance but also resilience and overall well-being (Kumbar & Patil, 2024). Defined as the capacity to remain confident, focused, and motivated while managing pressure and recovering from setbacks, mental toughness equips athletes with the psychological tools to perform consistently under challenging conditions (Yang & Endozo, 2025; Pandian et al., 2022).

Among university student-athletes, mental toughness plays a critical role in navigating the dual demands of academic and athletic life. In addition to maintaining physical performance, these individuals must manage coursework, training schedules, social expectations, and, at times, family responsibilities (Crocker & Duncan, 2020). Without sufficient psychological support, these overlapping pressures may result in stress, anxiety, or burnout, ultimately impairing performance (Haruna, 2023).

At Batangas State University – The National Engineering University Pablo Borbon, student-athletes represent the institution across various local and national competitions while upholding academic standards. However, despite institutional achievements in sports, there remains a noticeable gap in local research addressing their psychological preparedness and resilience. Although global literature supports the implementation of psychological skills training, such as goal-setting, self-talk, and stress regulation techniques (Lopes, 2024), few programs contextualize these strategies for Filipino student-athletes in public university settings.

Multiple studies have introduced frameworks and interventions for building mental toughness, yet these are often grounded in Western models that may not reflect the cultural and institutional realities of student-athletes in the Philippines (Stamatis et al., 2020). Without localized data and tailored strategies, universities may fail to provide effective support systems that meet the athletes' specific needs.

This study seeks to address that gap by assessing the levels of mental toughness among student-athletes in five dimensions—concentration, confidence, resilience, pressure management, and motivation—and by identifying the personal, academic, and institutional challenges that hinder its development. The study also compiles student-generated suggestions to guide the design of appropriate mental skills training programs.

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By clarifying the psychological strengths and challenges of collegiate athletes in this setting, the research aims to contribute to the advancement of athlete development programs that integrate mental toughness as a core component of sports training and academic support.

Conceptualizing Mental Toughness in Sport

Mental toughness has become a central construct in sports psychology due to its significant impact on performance consistency, emotional regulation, perseverance, and long-term success in competitive environments. It is widely regarded as the psychological capacity of athletes to perform optimally under conditions of pressure, fatigue, and adversity, while maintaining focus and emotional control (Ventaja-Cruz et al., 2025). This capability is not only vital during high-stakes competitions but also during training, injury recovery, and daily personal and academic challenges faced by student-athletes.

A foundational framework in understanding mental toughness is the “4Cs” model developed by Beattie et al. (2019), which identifies four interrelated attributes: Control (emotional and life regulation), Commitment (goal orientation and persistence), Challenge (perception of adversity as opportunity), and Confidence (belief in one’s abilities). This model offers a holistic lens for examining how athletes psychologically navigate stressors and maintain performance.

More recent perspectives emphasize that mental toughness is not solely an innate trait but a dynamic psychological skill that can be cultivated through deliberate training, experience, and supportive environments (Cowden et al., 2020). This paradigm shift has empowered coaches, sport psychologists, and institutions to design interventions aimed at building mental resilience among athletes across all levels—not just the elite.

In this study, mental toughness is conceptualized as a multidimensional construct composed of five core dimensions, grounded in established literature and adapted for the student-athlete context:

- **Confidence:** The athlete’s belief in their ability to succeed and perform well under pressure.
- **Concentration:** The ability to maintain focus on task-relevant cues while ignoring distractions.

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- **Resilience (Bouncing Back):** The capacity to recover quickly from failure, injury, or adversity.
- **Pressure Management:** The skill of regulating emotions and maintaining composure during high-stress situations.
- **Motivation:** The internal drive to pursue goals, sustain effort, and remain committed to improvement.

By clearly defining and operationalizing these dimensions, the study ensures consistency in interpretation across quantitative measurement and qualitative exploration. This approach aligns with contemporary views that mental toughness is a trainable skillset vital not only for peak athletic performance but also for enhancing well-being and reducing athlete burnout.

Components of Mental Toughness Among Athletes

Mental toughness is widely regarded as a multi-dimensional construct, composed of several interrelated psychological components that collectively influence an athlete's ability to perform consistently and adapt to competitive demands. These components do not function in isolation; rather, they interact dynamically, shaping how athletes respond to pressure, adversity, and performance expectations.

Concentration enables athletes to direct their attention toward relevant cues while filtering out distractions—whether from the environment, opponents, or internal thoughts. This skill is particularly vital in high-stakes situations where lapses in focus can lead to critical errors (Correa et al., 2023). Athletes with high levels of concentration are able to remain mentally present, make quick decisions, and maintain tactical awareness throughout competition.

Confidence refers to an athlete's belief in their own abilities and in their capacity to succeed, even in challenging or unpredictable conditions. It enhances risk-taking, reinforces resilience, and can serve as a buffer against performance anxiety (Dorling & Bahr, 2024). Confident athletes are more likely to persist through difficult moments and approach high-pressure situations with a positive mindset.

Resilience, often referred to as mental or emotional recovery, is the ability to bounce back from defeat, failure, or injury. It is essential for long-term athletic success

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and psychological endurance, particularly in sports where setbacks are common (Wang, 2024). Resilient athletes are better equipped to learn from negative experiences and reframe them as opportunities for growth.

Pressure management involves regulating anxiety, maintaining composure, and sustaining effective performance under emotionally charged conditions. Athletes who can manage pressure effectively are more likely to execute skills successfully during crucial moments, such as penalty shots or final plays. This component is closely linked to emotional intelligence and cognitive control.

Finally, motivation, whether intrinsic (driven by personal satisfaction and goals) or extrinsic (driven by external rewards and recognition), serves as the underlying force that sustains an athlete's effort, discipline, and commitment to continuous improvement. High levels of motivation promote consistency, goal adherence, and resilience in the face of setbacks (Kaygusuz, 2024).

Taken together, these five components—concentration, confidence, resilience, pressure management, and motivation—form the psychological foundation necessary for athletic excellence, adaptability, and personal development in sport. Understanding these dimensions allows coaches, psychologists, and educators to better support athletes in developing mental toughness across various stages of their careers.

University Student-Athletes and Mental Toughness Challenges

University student-athletes occupy a unique and demanding position as they simultaneously navigate the academic, athletic, and social dimensions of university life. The convergence of these responsibilities creates a high-pressure environment that can significantly impact both performance and psychological well-being (Harris & Maher, 2022). Unlike professional athletes whose primary focus is sport, student-athletes must meet academic deadlines, attend classes, and maintain academic eligibility while training, competing, and recovering from physical exertion. This dual burden often leads to time constraints, emotional fatigue, and chronic stress.

The transition from high school to university-level athletics intensifies these challenges. As athletes move into more competitive settings, they are expected to meet higher training demands, cope with more structured and outcome-oriented environments,

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and perform under greater scrutiny. These heightened expectations can affect their ability to maintain confidence, focus, and motivation, particularly in the absence of adequate institutional support (Haruna, 2023). For some athletes, this shift can also result in decreased self-efficacy and increased anxiety, making them more vulnerable to burnout and psychological withdrawal.

At Batangas State University The National Engineering University Pablo Borbon, student-athletes represent the institution in a wide range of competitive sports while managing their academic performance and personal obligations. This role not only brings pride and visibility but also amplifies pressure to perform consistently in both academic and athletic domains. However, similar to many public and state universities, there is often limited access to structured mental skills training programs and formal sports psychology services. While physical training programs are well-integrated, psychological preparation remains underdeveloped or inconsistently implemented.

This gap in psychological support can hinder the development of mental toughness, particularly in critical areas such as resilience and pressure management. Without intentional training in coping strategies and emotional regulation, student-athletes may find it difficult to recover from failure, manage high-stress scenarios, or maintain composure during competition. Furthermore, the absence of dedicated personnel such as sports psychologists, guidance counselors, or mental skills coaches within the athletic department may limit opportunities for early intervention and individualized support.

Finally, the combination of external demands and internal psychological stressors underscores the need for institutional investments in athlete mental health and development. A comprehensive approach that addresses both academic and athletic pressures is necessary to foster mental toughness and ensure the long-term retention and success of university student-athletes.

Psychological Skills Training and Interventions

A growing body of research supports the view that mental toughness is not a fixed trait, but rather a psychological skill set that can be cultivated through structured interventions. Among the most widely recognized approaches is Psychological Skills

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Training (PST), which includes a combination of cognitive-behavioral techniques and sport-specific routines designed to improve an athlete's focus, emotional control, and mental preparedness (Stamatis et al., 2020). These interventions have proven effective in enhancing athletes' ability to perform consistently under pressure, cope with adversity, and maintain psychological well-being throughout their athletic careers.

Core PST strategies include goal setting, imagery (visualization), positive self-talk, and relaxation techniques, all of which are designed to reinforce emotional regulation, boost self-confidence, and reduce performance anxiety (Hsieh et al., 2023). These skills equip athletes with mental tools to remain focused during high-pressure situations, recover from setbacks, and persist through training fatigue or competition stress. PST is particularly valuable for university student-athletes, who often face a complex mix of academic, athletic, and social demands without regular access to psychological support.

Evidence suggests that athletes who participate in PST programs report higher levels of resilience, improved motivation, and increased composure during competition, leading not only to enhanced sports performance but also to greater academic balance and life satisfaction (Kaygusuz, 2024). These psychological improvements are also linked to decreased burnout rates, better coping mechanisms, and stronger athlete retention—critical outcomes for institutions investing in the long-term development of student-athletes.

However, a significant limitation in the current literature is that most PST models have been developed in Western contexts, often reflecting cultural values, coaching styles, and educational systems that may not align with those found in Southeast Asia. As a result, there is a pressing need to culturally adapt mental skills training programs to better suit the needs, values, and lived experiences of student-athletes in the Philippines and other similar under-resourced or state-funded environments. For institutions like Batangas State University – The National Engineering University JPLPC-Malvar, such culturally relevant interventions could serve as powerful tools to bridge the gap between physical preparation and psychological readiness.

By embedding psychological training into regular sports practice, universities can ensure that athletes are not only physically conditioned but also mentally equipped to

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handle the evolving demands of student life and competitive sports. Doing so would represent a major step toward holistic athlete development in the collegiate setting.

Implications for Coaching and Athlete Support

The development of mental toughness among student-athletes is not solely an individual pursuit but rather a shared responsibility involving coaches, trainers, institutions, and families. These stakeholders collectively shape the psychological environment in which athletes train and compete. Among them, coaches play a particularly influential role, as they serve not only as technical guides but also as primary figures in the emotional and motivational lives of athletes. Through their leadership, communication style, and daily interactions, coaches significantly impact how athletes perceive challenges, regulate emotions, and build resilience (Strand et al., 2022).

Athlete-centered coaching practices, which emphasize autonomy, constructive feedback, empathy, and encouragement, have been shown to contribute to stronger mental toughness and greater overall well-being (Mossman et al., 2022). These approaches move beyond rigid, performance-only mindsets and foster environments where athletes feel psychologically safe, valued, and motivated to grow both on and off the field. Such an environment is particularly crucial for student-athletes who are still in the developmental stage of their athletic and academic careers.

Beyond coaching, institutional support systems play a critical role in reinforcing mental toughness. Universities can offer regular workshops on mental skills training, time and stress management, and goal-setting, equipping athletes with the tools to manage competing demands. Mentorship programs, wherein senior athletes or alumni provide guidance and emotional support, can further enhance a sense of community and motivation. Additionally, integrating mental training into routine practice—rather than treating it as a separate or optional activity—helps normalize psychological development as an essential part of sports training.

For institutions such as Batangas State University The National Engineering University Pablo Borbon, investing in these kinds of initiatives can yield long-term benefits. A structured, supportive environment not only cultivates mentally resilient athletes but also prepares them to excel academically and transition successfully into

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professional or competitive athletic careers. Moreover, such support can contribute to improved retention of athletes within programs, reduced risk of burnout, and a more positive athletic culture across the university.

In essence, the development of mental toughness should be viewed as a system-wide endeavor—one that requires coordination between sport science professionals, coaches, academic advisors, and institutional leaders. By aligning efforts across these domains, universities can ensure that their student-athletes are not only physically prepared but also psychologically equipped to face the diverse challenges of modern collegiate sports.

Methods

Research Design

This study employed a descriptive-exploratory research design, which was deemed appropriate for investigating the multifaceted nature of mental toughness among university student-athletes. The descriptive component allowed for the systematic measurement of mental toughness across five core dimensions—concentration, confidence, resilience (bouncing back), pressure management, and motivation—providing a baseline understanding of the psychological profiles of the participants within their respective sports contexts.

The exploratory component, on the other hand, was essential for uncovering the underlying challenges, barriers, and contextual factors that influence the development of mental toughness. This qualitative dimension is particularly valuable in addressing complex psychological phenomena shaped by lived experiences, institutional conditions, and sociocultural environments—factors not easily captured through quantitative data alone. Through this approach, the study aimed to gain deeper insight into issues such as lack of psychological training, limited support systems, academic pressures, and personal struggles.

Although no specific theoretical framework was adopted, the study was guided by established empirical constructs and multidimensional models of mental toughness found in prior literature. This flexible design allowed for both quantification and exploration,

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making it particularly suitable for a topic that remains under-researched in local university sport contexts.

The findings from both descriptive and exploratory strands were integrated to inform the development of practical, culturally responsive, and context-specific intervention strategies. These proposed interventions are intended to support coaches, trainers, and university administrators in fostering a psychologically resilient and performance-ready student-athlete population.

Participants, Sampling Technique, and Sample Size

The participants of this study were 154 student-athletes from Batangas State University – The National Engineering University Pablo Borbon, all of whom were actively involved in varsity sports during the academic year. Participants were selected using purposive sampling, a non-probability technique that ensured the inclusion of individuals with direct experience in collegiate-level athletic training and competition. This approach was considered appropriate given the study's aim to assess mental toughness among athletes currently exposed to the psychological and physical demands of organized sports.

The sample included representatives from the following sports disciplines: Basketball Men (15), Basketball Women (15), Volleyball Men (15), Volleyball Women (15), Baseball (15), Softball (15), Futsal (12), Sepaktakraw (12), Table Tennis Men (4), Table Tennis Women (4), Badminton Men (4), Badminton Women (4), Athletics Men (10), and Athletics Women (10). This composition ensured a balanced representation of male and female athletes across a variety of team and individual sports.

Although both male and female athletes were included, gender-related patterns in mental toughness were not the primary focus of this study and were therefore not analyzed in detail. Future research may benefit from comparative analysis by gender to explore potential psychological differences in coping mechanisms, confidence, or motivation.

The sample size of 154 participants was deemed sufficient for the mixed-methods approach. For the quantitative component, this number exceeds the minimum requirement for descriptive studies with moderate effect sizes, as determined by general power

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analysis recommendations (e.g., 95% confidence level, 5% margin of error). For the qualitative component, the open-ended responses provided by this number of participants were adequate for identifying recurring themes and reaching thematic saturation, where no new information or patterns emerged from additional data. Thus, the sample size was considered appropriate to ensure both statistical relevance and qualitative depth.

However, it is important to acknowledge that purposive sampling may limit the generalizability of findings. Since the sample was drawn from a single institution and selected based on relevance rather than randomization, results may not fully reflect the experiences of student-athletes in other contexts.

Instruments

To meet the study objectives, a researcher-made questionnaire was developed to gather both quantitative and qualitative data on mental toughness and its development among student-athletes. Content validity was established through expert review by five specialists in sports science, physical education, and psychology. Using a 4-point relevance scale, the experts evaluated each item for clarity and alignment with the study's goals. Items with an Item-CVI (I-CVI) of ≥ 0.80 were retained, and the final version achieved a Scale-CVI/Ave of 0.92, indicating excellent content validity.

The questionnaire had three parts: (1) the Mental Toughness Scale, which measured concentration, confidence, resilience, pressure management, and motivation using a 5-point Likert scale; (2) Challenges in Mental Toughness Development, with checklist and open-ended questions; and (3) Suggested Interventions, where participants provided recommendations to improve psychological support.

A pilot test with 20 student-athletes was conducted to ensure clarity and consistency. Feedback informed item revisions, and internal consistency was assessed using Cronbach's alpha, yielding an overall $\alpha = 0.89$. Subscale alphas ranged from 0.76 to 0.91, demonstrating acceptable to high reliability.

Data Analysis

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The data collected were analyzed using both quantitative and qualitative methods to comprehensively address the research objectives. For the quantitative data, descriptive statistics such as mean, standard deviation, frequency, and percentage were computed to determine levels of mental toughness across five dimensions: concentration, confidence, resilience, pressure management, and motivation. To explore group differences, inferential statistical tests such as independent samples t-tests (e.g., gender comparisons) and one-way ANOVA (e.g., by sport or year level) were planned and conducted using SPSS.

For the qualitative data, responses from the open-ended sections were analyzed through thematic analysis. The process involved several coding steps: (1) initial familiarization with the data, (2) open coding to identify significant concepts, (3) grouping of codes into categories, and (4) development of overarching themes. To ensure credibility, two independent coders reviewed the responses and compared interpretations. Inter-rater reliability was established through consensus discussions, and discrepancies were resolved through refinement of code definitions. Triangulation was applied by comparing qualitative insights with quantitative results to enrich interpretation and support convergence of findings.

The integration of both data types provided a holistic understanding of mental toughness and its development, grounded in both measurable trends and lived experiences of student-athletes.

Ethical Statement

Ethical considerations were upheld throughout all stages of the research process. Informed consent was obtained from all participants after providing a clear explanation of the study's purpose, procedures, potential risks, and benefits. Participation was entirely voluntary, and participants were assured of their right to withdraw at any time without consequence. Confidentiality and anonymity of responses were strictly maintained, and all data were used solely for academic and research purposes.

The study was reviewed and approved by a university research ethics committee, ensuring compliance with institutional research standards. Moreover, the research

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adhered to internationally recognized ethical guidelines, including the Declaration of Helsinki and the Singapore Statement on Research Integrity, to safeguard the protection, dignity, and well-being of all participants.

Results

This section summarizes the key findings based on the three objectives of the study: determining the level of mental toughness, identifying challenges in its development, and proposing relevant interventions. Overall, student-athletes exhibited high levels of mental toughness, particularly in motivation, concentration, and confidence, while resilience and pressure management were rated as moderate. The most commonly cited challenges included a lack of psychological training, academic stress, and inconsistent coaching support. Suggested interventions focused on integrating mental skills training, providing stress management workshops, and increasing access to sports psychologists and emotionally supportive coaching practices.

Level of Mental Toughness Among Student-Athletes

To determine the level of mental toughness among student-athletes, their responses to a structured questionnaire were analyzed based on five core components: concentration, confidence, resilience (bouncing back), pressure management, and motivation. Descriptive statistics were computed to evaluate the mean scores and provide a general interpretation of their mental toughness profiles.

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Table 1: *Level of Mental Toughness Among Student-Athletes by Component*

| Component | Mean | Standard Deviation | Verbal Interpretation |
|---------------------|-------------|--------------------|-----------------------|
| Concentration | 4.02 | 0.53 | High |
| Confidence | 3.85 | 0.61 | High |
| Resilience | 3.67 | 0.64 | Moderate |
| Pressure Management | 3.48 | 0.70 | Moderate |
| Motivation | 4.15 | 0.50 | High |
| Overall Mean | 3.83 | | High |

Table 1 presents the mean scores and interpretations of each component of mental toughness. Results show that the student-athletes scored highest in motivation ($M = 4.15$), followed by concentration ($M = 4.02$) and confidence ($M = 3.85$), all of which fall within the “High” category. These findings suggest that student-athletes are generally focused, driven, and self-assured in their athletic participation. However, resilience ($M = 3.67$) and pressure management ($M = 3.48$) were only rated as “Moderate,” indicating potential areas for growth in coping with failure and performing under pressure. The overall mental toughness level of the participants was interpreted as High ($M = 3.83$), reflecting a generally strong psychological disposition among the athletes.

Challenges Encountered by Student-Athletes in Developing Mental Toughness

To address the second objective, the study explored the common challenges that student-athletes face in building and sustaining mental toughness. Responses from the second section of the questionnaire—composed of checklist and open-ended items—were analyzed. The results identified several recurring psychological, academic, and environmental factors affecting their mental resilience.

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Table 2: *Common Challenges Encountered by Student-Athletes in Developing Mental Toughness*

| Challenges | Frequency | Percentage (%) |
|--|-----------|----------------|
| Lack of psychological training | 108 | 70.13% |
| Academic stress and time management difficulties | 96 | 62.34% |
| Inconsistent coaching feedback or support | 82 | 53.25% |
| Family and personal problems | 64 | 41.56% |
| Performance anxiety and fear of failure | 59 | 38.31% |
| Limited access to sports psychologists or counselors | 45 | 29.22% |

Table 2 presents the major challenges that student-athletes identified as barriers to developing mental toughness. The most frequently cited issue was the lack of psychological training (70.13%), indicating that most student-athletes do not receive structured mental skills instruction as part of their sports programs. Academic stress and time management difficulties were also prevalent (62.34%), reflecting the pressure of balancing academic and athletic responsibilities. Furthermore, more than half of the respondents (53.25%) pointed to inconsistent coaching support, which may impact athletes' confidence and stress regulation. Additional challenges such as family issues, performance anxiety, and limited access to mental health professionals further emphasize the need for a more integrated support system that addresses both the physical and psychological needs of athletes.

Proposed Interventions to Enhance Mental Toughness

To fulfil the third objective, the study asked student-athletes to suggest interventions that they believe would strengthen their mental toughness. These open-ended responses were analyzed for recurring themes and summarized into categories reflecting programmatic, institutional, and interpersonal strategies for improvement.

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Table 3: *Suggested Interventions to Enhance Mental Toughness Among Student-Athletes*

| Proposed Intervention | Frequency | Percentage (%) |
|---|-----------|----------------|
| Integration of mental skills training in regular practice | 110 | 71.43% |
| Time management and stress management workshops | 96 | 62.34% |
| Availability of sports psychologists or guidance counselors | 87 | 56.49% |
| Coach training on emotional intelligence and communication | 74 | 48.05% |
| Peer mentoring and team-building activities | 60 | 38.96% |
| Periodic performance reflection and mental check-ins | 51 | 33.12% |

Table 3 highlights the student-athletes' suggested interventions for improving mental toughness. The most prominent recommendation was the integration of mental skills training into regular practice (71.43%), which could include techniques such as visualization, positive self-talk, and emotional regulation exercises. This was followed by time and stress management workshops (62.34%), aimed at helping athletes cope with academic and athletic demands. A majority of respondents also emphasized the need for accessible sports psychologists or counsellors (56.49%) and coach training in emotional support and communication (48.05%), indicating that mental toughness is not only an individual responsibility but also a shared task within the athletic community. Other suggested interventions such as peer mentoring, team-building, and routine mental check-ins reflect the athletes' desire for a more holistic, supportive environment that nurtures both performance and well-being.

Discussion

This study aimed to assess the level of mental toughness among university student-athletes, identify challenges in its development, and propose interventions to strengthen psychological resilience and athletic performance. The findings provide critical insights into the psychological preparedness of athletes across various sports disciplines and reaffirm the vital role of mental toughness in achieving collegiate athletic success.

Importantly, this research contributes new and context-specific knowledge by exploring mental toughness within a Philippine state university—an academic setting that

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remains underrepresented in global sports psychology literature. While affirming widely recognized constructs from international studies, this investigation uniquely situates these within the lived realities, institutional constraints, and sociocultural nuances of Filipino student-athletes. This localized framing bridges the gap between theoretical understanding and practical application in Philippine higher education athletics.

Quantitative results revealed that student-athletes from Batangas State University – The National Engineering University Pablo Borbon exhibited high levels of mental toughness, particularly in motivation, concentration, and confidence. These strengths align with Ventaja-Cruz et al. (2025), who emphasized that elite athletes commonly demonstrate strong intrinsic drive and sustained focus—traits essential for consistent performance. In the present study, such motivation likely stems from personal ambition, institutional identity, and the desire to achieve recognition in competitive intercollegiate sports.

However, the study also revealed moderate scores in resilience and pressure management—dimensions that represent critical aspects of mental toughness. While athletes demonstrated confidence and focus, they reported challenges in bouncing back from setbacks and regulating emotions under pressure. These results resonate with Beattie et al.'s (2019) 4Cs model, particularly in the domains of Control (emotional regulation) and Challenge (viewing adversity constructively). The data suggest that while Confidence and Commitment are well developed, additional support is needed to cultivate emotional stability and adaptive coping.

Qualitative responses reinforced these findings, with over 70% of participants identifying the lack of structured psychological training as a major barrier to mental toughness development. This supports Aditya et al.'s (2024) assertion that mental toughness is a learned skill rather than an inherent trait—one that requires deliberate practice and professional guidance. However, the implementation of such programs remains limited due to financial constraints, lack of trained personnel, and the minimal prioritization of mental training in many university athletic departments.

Compounding these limitations is the scarcity of sports psychologists and mental health professionals within state-funded institutions. Compared to private or elite

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programs, public universities often face significant resource limitations, making it difficult to sustain consistent psychological services. As Hertting et al. (2023) noted, without adequate mental health support, student-athletes are more vulnerable to anxiety, emotional exhaustion, and performance decline—issues that can compromise both well-being and competitive outcomes.

The coach–athlete relationship also emerged as a key determinant of psychological development. Participants reported that emotionally distant or inconsistent coaching practices hindered their growth in mental resilience. This finding echoes Rathi (2019), who emphasized the importance of emotionally supportive coaching in creating a psychologically safe and trusting environment. Coaches who consistently offer constructive feedback, encouragement, and empathy can play a transformative role in developing athletes' emotional regulation and resilience.

To address these multifaceted challenges, participants proposed integrating mental skills training into regular practice routines, offering workshops on time and stress management, and expanding access to psychological support services. These proposals are aligned with Kaygusuz (2024), who highlighted evidence-based strategies such as goal-setting, visualization, positive self-talk, and relaxation as effective tools for building mental resilience. Beyond technical solutions, athletes also advocated for peer mentoring programs, emotionally intelligent coaching development, and structured team-building activities. These social and emotional dimensions underscore the need for holistic, athlete-centered approaches to mental toughness, as supported by Hunt et al. (2020) and Röthlin et al. (2023).

While these interventions are promising, their successful implementation requires institutional investment and long-term support. Integrating mental skills modules into team practice is feasible and cost-effective if guided by trained coaches or in-house counselors. Stress management workshops can be conducted in collaboration with campus wellness units, and partnerships with local psychology programs could provide supervised mental health services. Sustainability depends on administrative commitment, budget allocation, and policy alignment. For example, mental training could be institutionalized through athletics department mandates or embedded into coaching certification programs.

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In conclusion, while student-athletes at Batangas State University TNEU Pablo Borbon displayed strengths in motivation, concentration, and confidence—indicative of well-developed Commitment and Confidence—their moderate scores in resilience and pressure management expose areas needing targeted intervention. Challenges such as the lack of mental training infrastructure, limited psychological support, and inconsistent coaching reflect broader structural issues within Philippine collegiate athletics. Addressing these gaps requires systemic action, including capacity building, partnerships, and inclusive coaching practices. More importantly, this study underscores that mental toughness is not merely a competitive advantage—it is a foundation for holistic student-athlete development, fostering emotional balance, academic perseverance, and lifelong adaptability.

Limitations of the Study

While this study provides valuable insights into the mental toughness and psychological needs of university student-athletes, several limitations must be acknowledged.

First, although the researcher-made questionnaire underwent expert validation and pilot testing, it may still be subject to measurement limitations, including the potential omission of nuanced aspects of mental toughness not captured by the scale.

Second, the reliance on self-reported data introduces the possibility of response bias, particularly social desirability bias. Given that mental toughness is often associated with strength, resilience, and competence, some participants may have overstated their abilities or underreported psychological challenges in an effort to align with socially favorable perceptions.

Third, the study utilized a purposive sampling method limited to a single state university, which may affect the generalizability of findings. The experiences and psychological profiles of athletes from other universities, especially those with different institutional structures or support systems, may vary significantly.

Fourth, the qualitative data were collected exclusively through open-ended survey responses, without the benefit of follow-up interviews or focus group discussions. While

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useful for identifying themes, this approach limited the depth and richness of the qualitative insights that could have been gained through more interactive methods.

Finally, the absence of a formal theoretical framework may limit the interpretive depth of the study and its alignment with established psychological models, although it was guided by empirical constructs found in existing literature.

Future research is encouraged to incorporate triangulated data sources (e.g., coach assessments, behavioral observations), adopt standardized and culturally adapted instruments, and expand sampling across multiple institutions. Additionally, incorporating in-depth qualitative methods such as interviews or case studies would strengthen the contextual understanding of mental toughness and support more nuanced interpretation.

Conclusion

This study assessed the level of mental toughness among student-athletes at Batangas State University – The National Engineering University Pablo Borbon, identified the challenges they face in developing it, and explored athlete-informed strategies to enhance psychological resilience. The findings contribute new, context-specific insights to the growing body of literature on mental toughness in collegiate sports, particularly within underrepresented Philippine university settings.

While student-athletes demonstrated strong attributes in motivation, concentration, and confidence—qualities essential for sustained athletic performance—the study also revealed moderate levels of resilience and pressure management. These vulnerabilities highlight the need for targeted psychological support to help athletes recover from setbacks and regulate emotions under stress. Importantly, these gaps are not merely individual but stem from broader systemic issues such as the absence of structured mental training, heavy academic loads, limited access to sports psychologists, and inconsistent coaching approaches.

What makes this study unique is its grounding in the lived experiences of Filipino student-athletes, whose voices brought forth actionable recommendations. These include integrating mental skills training into regular practices, improving coach communication and emotional support, and forging partnerships with mental health professionals.

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Implementing these interventions—starting with pilot programs or peer-led workshops—is feasible within the university setting through collaboration among athletic departments, guidance offices, and academic units.

The athletes' own reflections present a compelling case for institutional change. Their recommendations can serve as the foundation for policy development, coaching reforms, and curriculum enhancements that prioritize mental well-being alongside physical preparation. For administrators and educators, this research underscores the long-term value of investing in athlete-centered mental health programs—not only to boost performance but to promote holistic student development.

Finally, nurturing mental toughness is not just a competitive advantage; it is a pathway to preparing student-athletes for life's pressures beyond the court or field. By addressing these psychological dimensions with intentional support, universities can foster environments where student-athletes thrive—mentally, physically, and socially.

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