

Sports Participation and Its Influence on the Mental Toughness of First-Class Cadets of PMA

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Abstract: *This quantitative study investigated the influence of sports participation on the mental toughness of first-class cadets at the Philippine Military Academy (PMA). The research aimed to determine the extent to which engagement in sports contributes to psychological resilience, discipline, and performance under pressure among cadets in a highly demanding military training environment. Using a correlational research design, data were collected through a standardized questionnaire measuring sports participation and mental toughness, and identified the relationship of the two identified variables. The study involved first-class cadets enrolled during the academic year of 2025–2026, with ethical considerations such as informed consent, confidentiality, and voluntary participation strictly observed. Results revealed that cadets exhibited a high level of sports participation (GWM = 3.69), emphasizing camaraderie, physical endurance, and motivation, and a very high level of mental toughness (GWM = 3.80), characterized by perseverance, confidence, adaptability, and emotional control. A Pearson's correlation analysis indicated a very strong direct relationship between sports participation and mental toughness ($r = 0.89$, $p < 0.05$), with 79% of the variance in mental toughness explained by sports participation. These findings highlight the critical role of structured sports activities in developing the psychological competencies necessary for effective leadership and operational success in military training. The study suggests that integrating more structured and competitive sports programs into the PMA curriculum could further enhance cadets' mental toughness, resilience, and stress management abilities. Future research may explore additional factors influencing mental toughness, including coaching styles, leadership exposure, and personal characteristics, to provide a more comprehensive understanding of cadet development.*

Keywords: Sports Participation, Mental Toughness, Philippine Military Academy, Cadet Development, Psychological Resilience

1. Introduction

The Philippine Military Academy (PMA) prepares future leaders of the Armed Forces of the Philippines. PMA cadets undergo training aimed at building military skills and character in a highly demanding environment. Within this environment, the strength of character and the ability to withstand considerable psychological strain are factors that set exceptional military leaders apart from their peers. At PMA, mental toughness is defined as the ability to perform under pressure, overcome adversity, and concentrate in the face of distractions.

The mental resilience developed during the academy's training program is indispensable. Sport participation is a well-known means of building character, discipline, and a competitive spirit. For the military, these traits are essential in operational effectiveness, leadership, and making sound decisions under pressure.

Psychological stress refers to a comprehensive mental state of continuous tension formed by an individual's response to stressful events in life practice (Hexia & Sagubo, 2023). Given the intensity of cadet life, psychological stress is a constant factor that requires cadets to develop strategies for resilience and endurance. Sport participation has long been recognized as a core component in the development of psychological skills that help manage stress and perform under high-pressure situations, such as those found in military school cadres.

Considerable literature has established that participation in sport contributes significantly to the development of mental toughness, which is essential for coping with stress and performing under pressure. A study by Jones et al. (2019) highlights that sport participation fosters mental toughness by enhancing psychological resilience, emotional control, and the ability to maintain focus during challenging situations. This is particularly relevant for military cadets, who require these qualities to succeed in demanding physical and mental environments. The structured challenges and teamwork inherent in sports create opportunities to develop persistence, confidence, and stress management skills that translate directly to improved performance under military training conditions. This evidence underscores the importance of integrating sports into cadet training programs to cultivate the mental toughness necessary for effective leadership and operational success.

Mental toughness has been conceptualized as a multidimensional construct characterized by higher commitment, higher confidence, higher control, and higher challenge. Studies in sport psychology consistently show that athletes possess greater mental toughness compared to non-athletes. In the case of team sport athletes, the social support combined with the demands of being in a team environment contributes to resilience (Cowden, 2017; Eather et al., 2023). Motivational features, such as autonomy-supportive coaching practices and exposure to challenging social contexts, have also been linked to the development of mental toughness (Mahoney, Gucciardi, Ntoumanis, & Mallett, 2014). More recently, research suggests that continued involvement in sports fosters persistence and coping skills, traits highly relevant in military training environments (Mendizabal, 2024; Saul et al., 2023).

Recent studies also highlight the role of coaching practices grounded in positive psychology in enhancing athletes' resilience and performance. For instance, Cantor, Dindin, Espiritu, Serrano, and Am-una (2023) found that the use of positive psychology in coaching fosters optimism, motivation, and adaptability among Zillennial athletes, enabling them to better cope with stress and challenges. This aligns with the military training context, where cadets likewise benefit from structured guidance that develops not only physical skills but also psychological strengths such as confidence, discipline, and mental toughness.

While these findings provided important insights into university athletes and general sports populations, there remained a significant gap in research regarding PMA cadets, particularly first-class cadets, and the effect of sports participation on their mental toughness. Although mental toughness had been studied extensively in athletic contexts, little was known about its development among cadets in military environments where the stakes and stressors differed from typical sports settings. Furthermore, the unique cultural and institutional environment of PMA may have mediated this relationship, yet it had not been systematically examined.

Addressing these gaps was essential in order to design interventions that enhanced the performance and resilience of cadets through structured training programs.

This study aimed to investigate the extent to which sports participation influenced the mental toughness of first-class cadets at the Philippine Military Academy. By focusing on this population, the research sought to clarify and quantify the relationship, providing evidence to support improved training methodologies within the PMA.

According to Cowden (2017), athletes who regularly participate in sports tend to show higher levels of mental toughness because they learn to stay focused, confident, and calm under pressure. Sports help individuals handle stress, build discipline, and develop a positive attitude toward challenges. Likewise, a study by Meggs, Ditzfeld, and Golby (2014) found that students with more sports experience and greater competitive achievement had stronger mental toughness than those with little or no participation in sports. These findings suggest that continuous involvement in sports can improve a person's ability to stay composed and resilient during demanding situations.

According to Mahoney et al. (2014), mental toughness includes four main traits, commitment, confidence, control, and challenge that help people perform well despite pressure or adversity. Training and coaching that focus on motivation and emotional control can strengthen these traits. A study by Gucciardi et al. (2015) also supports this idea, showing that supportive coaching and positive environments help athletes become more confident, resilient, and focused. This suggests that sports programs, especially those emphasizing teamwork and discipline, can help individuals like PMA cadets build the mental toughness needed for leadership and success in high-pressure settings.

This study was based on the idea that sports participation helps develop mental toughness among cadets of the Philippine Military Academy (PMA). Mental toughness refers to a person's ability to stay confident, focused, and in control when facing pressure or challenges. For PMA cadets, this trait was important because their training involved both physical and mental demands. Sports participation builds discipline, confidence, and resilience. Through regular training and teamwork, cadets learned to handle stress, improve self-control, and stay motivated. Positive coaching and supportive teammates also helped them manage pressure and perform better.

In this study, sports participation was the independent variable, and mental toughness was the dependent variable. It assumed that cadets who were more active in sports tended to have higher levels of mental toughness.

It was essential to understand how sports participation influenced the mental toughness of first-class cadets in the Philippine Military Academy (PMA) since both physical strength and psychological resilience were vital in military training. By identifying how involvement in sports contributed to traits such as confidence, discipline, and focus, this study could help improve cadet training programs. The findings may also serve as a basis for integrating more structured sports activities into the PMA curriculum to enhance not only physical fitness but also emotional stability and leadership readiness among cadets.

Moreover, this study was expected to be beneficial to PMA administrators, coaches, and trainers in developing programs that promote the mental well-being and performance of cadets. It could also guide educators and researchers in understanding the value of sports in building

psychological skills needed for demanding professions. Lastly, future researchers may use this study as a reference when exploring the connection between athletic participation and mental toughness in other military or academic institutions.

This study aimed to determine the extent to which sports participation influenced the mental toughness of first-class cadets at the Philippine Military Academy (PMA). Specifically, it sought to (1) identify the level of sports participation of first-class cadets, (2) assess their level of mental toughness, and (3) determine the relationship between sports participation and mental toughness.

2. Methodology

2.1. Research Design

The design that was used in this study was the correlational research design. This design was employed to determine the relationship between sports participation and mental toughness among first-class cadets of the Philippine Military Academy (PMA). It allowed the researcher to identify whether a higher level of sports participation was associated with a higher level of mental toughness without manipulating any variables. Data were gathered through a standardized questionnaire to ensure accurate and consistent responses from the participants.

The quantitative data that were collected helped determine the level of sports participation and the level of mental toughness of the respondents. It also identified the extent of the relationship between these two variables. The results provided valuable insights into how engagement in sports contributed to the development of psychological resilience and focus among PMA cadets. This design gave a clearer understanding of how sports participation influenced the mental preparedness and emotional strength of future military leaders.

2.2. Population and Locale

The population of the study consisted of one hundred seventy-two (172) first-class cadets of the Philippine Military Academy (PMA) who were enrolled during the academic year 2025–2026, in which data collection took place. These cadets represented the senior class of PMA and were the focus of the research because the study aimed to determine the extent to which sports participation influenced mental toughness specifically among first-class cadets. The exact number of first-class cadets was obtained from the official PMA enrollment records at the start of the data-collection period.

All cadets who held the rank or status of first-class cadet and who were present and eligible during data collection were included in the population. Cadets who were on official long-term leave, suspended, or medically unfit to participate during the data-collection period were excluded from the accessible population. This clear definition ensured that the study's results directly applied to the intended group (first-class PMA cadets) and guided the sampling procedure and sample-size calculation.

2.3. Research Instrument

The researchers used a standardized questionnaire as the primary data-gathering tool of the study. The questionnaire was divided into two parts: the first part measured the extent of sports participation, while the second part assessed the level of mental toughness among first-class cadets of the Philippine Military Academy (PMA). A four-point Likert scale was used to quantify the responses, ranging from 1 (Strongly Disagree) to 4 (Strongly Agree). The

instrument was validated by experts in physical education and psychology to ensure its reliability and accuracy before administration.

2.4. Data Gathering Procedure

Before the conduct of the study, approval was formally sought from the Philippine Military Academy administration to administer the survey among first class cadets. A written request outlining the purpose and objectives of the study was submitted to the Office of the Superintendent and other concerned departments. Upon approval, the researchers coordinated with designated officers and class leaders to facilitate the distribution of the questionnaires during the cadets' available schedules.

Prior to data collection, the purpose of the study and the instructions for answering the questionnaire were clearly explained to the participants. They were informed that their participation was voluntary and were assured that their responses would be treated with utmost confidentiality and used solely for academic purposes.

The questionnaires were personally distributed and retrieved by the researchers to ensure a high response rate and accuracy of the data. Respondents were given sufficient time to complete the survey. After retrieval, all questionnaires were checked for completeness and consistency. The collected data were then systematically compiled, organized, and prepared for statistical analysis.

2.5. Treatment of Data

Weighted mean was used to analyze the quantitative data. It was a statistical procedure for combining the means of two or more groups of different sizes, considering the size of each group when computing the overall or grand mean. The questionnaire included four-point Likert scale questions to determine the extent of sports participation and the level of mental toughness among first-class cadets of the Philippine Military Academy. To determine the relationship between sports participation and mental toughness, the Pearson's correlation coefficient (r) was used. This formula measured the strength and direction of the correlation between the two variables, providing statistical evidence on the extent of influence of sports participation on the cadets' mental toughness.

2.6. Ethical Consideration

Before the start of the data-gathering procedure, the researchers upheld the highest ethical standards to protect the rights, privacy, and well-being of all participants. The purpose, objectives, and significance of the study were clearly explained to the participants through an information sheet and a short briefing session prior to data collection. This ensured that the cadets fully understood what their participation entailed and that they could make an informed decision about joining the study.

Participation in the study was entirely voluntary. Each participant was asked to sign a written informed consent form, which outlined the purpose of the research, the type of data to be collected, the expected duration of participation, and their right to withdraw from the study at any time without any penalty or negative consequence. Participants were also informed that no financial or material incentives were provided, as their participation was for academic and research purposes only.

The estimated number of participants corresponded to the total population of first-class cadets of the Philippine Military Academy (PMA) during Academic Year 2025–2026, which was

expected to range between 100 to 200 cadets based on current enrollment figures. Only those who provided informed consent were included in the study.

All gathered data were treated with strict confidentiality and kept responsibly by the researchers. The responses remained anonymous, and no names, class numbers, or identifying details appeared in any part of the questionnaire or final report. Only the principal researcher and the research adviser had access to the raw data to ensure that privacy and ethical standards were maintained. After the study was completed and approved, the data were properly disposed of in accordance with research ethics guidelines.

The raw data were used solely for academic purposes to complete the research study entitled “The Influence of Sports Participation on the Mental Toughness of First-Class Cadets of the Philippine Military Academy.” The findings were utilized to enhance understanding of the relationship between sports participation and mental toughness and to provide recommendations for improving PMA training programs.

After the study was completed, a summarized report of the findings was shared with the PMA administration through a formal presentation or written feedback document. Participants were allowed to request a copy of the results from the researchers if they wished to learn about the outcomes of the study. This transparency ensured that the cadets and the institution benefited from the research while maintaining confidentiality and ethical integrity.

3. Results and Discussion

3.1. Extent of Sports Participation of First-Class Cadets

The extent of sports participation of first-class cadets was measured in terms of their level of involvement, frequency of engagement, and types of sports activities participated in. It highlights how regularly cadets take part in organized and physical sports activities as part of their training and daily routines, reflecting the role of sports in promoting physical fitness, discipline, teamwork, and overall well-being among first-class cadets.

Table 1 presents the first-class cadets’ responses regarding their level of sports participation. The table summarizes the frequency and extent of involvement in various sports-related activities, such as organized team and individual sports, physical conditioning, and competitive events. This data provides an empirical overview of the cadets’ engagement in sports, which is the independent variable of the study, and serves as the basis for analyzing its influence on their mental toughness.

Table 1: Extent of Sports Participation of First-Class Cadets

Statements	Mean	Level of Sports Participation
Sports participation helps me build camaraderie with my fellow cadets.	3.84	Very High
My involvement in sports has improved my physical endurance.	3.80	Very High
I find enjoyment and motivation in participating in sports.	3.80	Very High
I actively participate in organized sports activities within the academy.	3.75	Very High
I consider sports an important part of my daily routine in the academy.	3.73	Very High
I take part in both team and individual sports.	3.73	Very High
I regularly engage in physical training or sports outside of required classes.	3.67	Very High
I am consistent in attending sports practices or games.	3.61	Very High
I allot time weekly for sports practice or conditioning.	3.56	Very High

I participate in competitive sports events or tournaments.	3.43	High
General Weighted Mean	3.69	Very High

The results presented in Table 1 reveal that the sports participation of first-class cadets is assessed at a “Very High” level, as reflected in the General Weighted Mean (GWM) of 3.69. This indicates that cadets consistently engage in various sports activities and perceive sports as an integral component of their academy life. High involvement in sports is often associated with improved physical health, increased motivation, and enhanced social functioning, especially in structured environments such as military academies. Contemporary research supports that frequent participation in sports promotes better psychological well-being, social connectedness, and overall quality of life among young adults (Eather et al., 2023). This suggests that the strong participation of cadets in sports contributes positively to their physical and psychosocial development.

Among the indicators, the highest mean score was recorded for the statement “Sports participation helps me build camaraderie with my fellow cadets” (3.84). This implies that cadets view sports as a primary avenue for building relationships, strengthening social bonds, and enhancing group cohesion. Camaraderie is a critical component of military culture, as strong interpersonal connections foster trust, cooperation, and unity within a unit. Studies highlight that involvement in sports significantly enhances group cohesion and interpersonal relationships, particularly in team-based environments where collaboration and communication are essential (Evans et al., 2018). Thus, the strong agreement among cadets underscores the social value of sports in reinforcing unity and solidarity within the Corps of Cadets.

Conversely, the lowest mean score was reported for “I participate in competitive sports events or tournaments” (3.43), though it still falls within the “High” level. This suggests that while cadets are generally active in sports, participation in competitive-level events is relatively lower. Several factors may influence this, such as limited time due to academic and training demands, schedule conflicts, or personal preference for recreational rather than competitive sports. Research indicates that although sports participation is beneficial, the level of involvement often varies depending on workload, accessibility, and individual motivation (Crane & Temple, 2015). In highly structured institutions like the PMA, competing academic, military, and leadership responsibilities may reduce opportunities for cadets to engage in formally competitive tournaments.

The distribution of mean scores across all indicators suggests a consistent pattern of strong sports engagement among cadets, emphasizing the physical and social benefits they derive from participation. The findings imply that sports serve both as a physical conditioning tool and a psychosocial mechanism that strengthens camaraderie and resilience. While participation in competitive sports shows room for enhancement, the overall high levels of engagement demonstrate that sports remain a vital component of cadet development. Encouraging more structured opportunities for competitive play may further strengthen physical preparedness and performance motivation among cadets.

3.2. Extent of Mental Toughness of First-Class Cadets

The extent of mental toughness of first-class cadets was measured in terms of their ability to remain focused, resilient, and composed when facing physical, academic, and psychological challenges. It examines how cadets manage stress, maintain confidence, and persevere under

pressure, highlighting the role of mental toughness in supporting their performance, adaptability, and overall development.

Table 2 displays the first-class cadets’ self-assessed level of mental toughness. The table presents the mean scores across dimensions such as perseverance, confidence, adaptability, emotional control, and performance under pressure. These indicators constitute the dependent variable of the study, highlighting the cadets’ psychological resilience and ability to cope with the demands of military training.

Table 2: Extent of Mental Toughness of First-Class Cadets

Statements	Mean	Level of Mental Toughness
I view difficult tasks as opportunities to improve myself.	3.84	Very High
I continue to give my best effort even when success seems unlikely.	3.84	Very High
I adapt easily when situations or plans suddenly change.	3.83	Very High
I believe in my ability to perform well under pressure.	3.80	Very High
I stay motivated even when facing setbacks or fatigue.	3.79	Very High
I recover quickly from mistakes or failures.	3.78	Very High
I can control my emotions effectively during challenges.	3.78	Very High
I stay confident when competing or performing in front of others.	3.78	Very High
I stay focused and persistent even when training becomes difficult.	3.77	Very High
I remain calm and composed during stressful situations.	3.75	Very High
General Weighted Mean	3.80	Very High

The results in Table 2 show that the mental toughness of First-Class Cadets is rated at a “Very High” level, as reflected in the general weighted mean of 3.80. This high rating indicates that the cadets consistently demonstrate psychological resilience, confidence, and emotional control, which are essential traits in demanding training environments such as the Philippine Military Academy. Mental toughness is widely recognized as a crucial determinant of performance in high-pressure settings, as it enables individuals to remain focused, composed, and persistent despite challenges (Gucciardi, Hanton, & Fleming, 2017).

Among the indicators, “I view difficult tasks as opportunities to improve myself” and “I continue to give my best effort even when success seems unlikely” both obtained the highest mean score of 3.84, indicating that cadets display a strong growth mindset and a high level of perseverance. These findings are consistent with research emphasizing that mentally tough individuals tend to reframe adversity as a chance for development and maintain effort regardless of obstacles. This aligns with the concept of challenge appraisal, which has been shown to enhance motivation and improve performance in competitive and military contexts (Clough & Strycharczyk, 2015).

On the other hand, the lowest score, though still categorized as “Very High,” was observed for “I remain calm and composed during stressful situations” with a mean of 3.75. While still high, this suggests that maintaining composure under intense stress may be comparatively more challenging for cadets. This aligns with studies indicating that emotional regulation is often the most difficult component of mental toughness to sustain, especially in unpredictable or high-pressure environments. Even trained individuals may experience lapses in emotional control when confronted with acute stressors, emphasizing the need for continuous psychological skills training (Birrer & Morgan, 2010).

Overall, the results indicate that First-Class Cadets exhibit strong mental toughness across all indicators, demonstrating resilience, adaptability, and confidence, which are qualities essential for future leadership roles. The consistently high ratings suggest that the academy’s training system effectively fosters psychological skills that align with the demands of military performance. Continuing to strengthen stress management and emotional regulation programs may further enhance cadets’ ability to perform optimally under pressure.

3.3. Relationship between Sports Participation and Mental Toughness

Table 3 shows the Pearson correlation analysis examining the relationship between sports participation and mental toughness among first-class cadets. The table presents the correlation coefficient, significance level, and coefficient of determination, which together indicate the strength and direction of the relationship between the independent and dependent variables. This analysis provides statistical evidence of the extent to which sports participation contributes to the development of mental toughness in the cadets.

Table 3: Correlation of Sports Participation and Mental Toughness

<i>r</i>	<i>r</i> ²	<i>t</i>	<i>p</i>	Interpretation
0.89	0.79 or 79%	5.525*	0.001	Direct very strong relationship

Legend: *significant at $\alpha = 0.05$ level

Results reveal that there is a very strong direct ($r = 0.89$) relationship between sports participation and mental toughness ($t = 5.525$, $p < 0.05$). This implies that, on average, individuals who engage more frequently in sports tend to demonstrate higher levels of mental toughness. According to Gucciardi (2017), participation in structured physical activities helps individuals develop resilience, discipline, and the ability to cope with pressure—traits that are core components of mental toughness. Similarly, Jones, Hanton, and Connaughton (2007) emphasized that consistent involvement in sports promotes psychological skills such as confidence, emotional regulation, and perseverance.

Moreover, the computed $r^2 = 79\%$ indicates that 79% of the variation in mental toughness can be explained by sports participation. This means that athletes’ or students’ level of involvement in sports plays a major role in shaping their mental toughness. The remaining 21% may be influenced by other factors such as personality, training environment, coaching style, and socio-emotional experiences (Weinberg & Gould, 2019).

Overall, the results support existing literature stating that active participation in sports significantly contributes to psychological strength and adaptive coping skills.

4. Conclusion

This study aimed to determine the extent to which sports participation influences the mental toughness of first-class cadets at the Philippine Military Academy. The results indicate that cadets are highly engaged in sports activities, which positively contribute to their physical endurance, motivation, and social cohesion. Similarly, the cadets demonstrated very high levels of mental toughness, reflected in traits such as perseverance, confidence, adaptability, and emotional control, all of which are essential for successful performance in the demanding military training environment.

Moreover, the study revealed a strong and positive relationship between sports participation and mental toughness, suggesting that cadets who are more actively involved in sports tend to

develop greater psychological resilience, discipline, and coping skills. These results highlight the important role of structured sports programs in enhancing cadets' mental preparedness and overall effectiveness as future military leaders. In summary, participation in sports is a key factor in fostering the psychological competencies necessary for success at the Philippine Military Academy.

Based on the results and limitations of the study, it is recommended that the Philippine Military Academy strengthen and further integrate structured sports programs into the training curriculum to continuously develop the mental toughness of cadets. Opportunities for competitive sports participation may be expanded to enhance motivation, resilience, and stress management skills, as this was the area where cadets showed relatively lower participation. Additionally, programs that combine sports with psychological skills training, such as emotional regulation, goal setting, and confidence building, may be implemented to support aspects of mental toughness that remain more challenging during high-stress situations. Future research may also explore other factors influencing mental toughness, including coaching style, leadership exposure, and personal characteristics, to provide a more comprehensive understanding of cadet development.

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Conflict of Interest Statement

The authors declare that there is no conflict of interest regarding the publication of this study. The research was conducted independently and did not receive financial support or sponsorship from any commercial or external organization.

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