

A Quantitative Inquiry of College Student-Athletes' Self-Concept and Mental Toughness

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Abstract

This study examined the self-concept and mental toughness of collegiate student-athletes and determined the significant relationship between these two psychological constructs. Anchored on the concepts of self-concept and mental toughness, the study focused on self-fulfillment, autonomy, honesty, and emotional self-concept, as well as control, commitment, challenge, and confidence. A descriptive-correlational research design was employed among 106 randomly selected student-athletes from Isabela State University, Echague, Philippines, who qualified for the 2025 University games. The study used the Personal Self-Concept Questionnaire and the Mental Toughness Questionnaire, with data analyzed using mean scores and Kendall Tau-b. Findings revealed that the student-athletes had a high level of self-concept specifically honesty as the highest-rated dimension. However, their overall mental toughness was interpreted to be on a moderate level, in terms of challenge and control were rated on a moderate level, while confidence and commitment were at a high level. Results further showed a significant relationship between self-concept and mental toughness. The study concludes that although student-athletes possess a high self-concept, the need to strengthen mental resilience to better manage pressure, demanding tasks, self-criticism, and anxiety in sports situations is essential. It recommends collaboration with a sports psychologist in designing a Psychological Skill Training program to incorporate personality enhancement seminar as well as building self-confidence, focus, and resiliency. By emphasizing student-athletes' psychological well-being, academic-athletic balance, and holistic development, this study supports Sustainable Development Goal (SDG) 3: Good Health and Well-Being, and SDG 4: Quality Education. Its sustainability impact lies in strengthening institutional support systems that promote resilience, self-awareness, performance, and well-being among student-athletes.

Keywords: Academic-Athletic Balance, Collegiate Student-Athletes, Mental Toughness, Psychological Skill Training, Self-Concept, Sports Performance, Student-Athlete Development

1. Introduction

Student-athletes occupy a distinct position in educational institutions because they are expected to perform both academically and athletically (Gomez et al., 2018; Rutledge, 2023). Their dual role requires balance, discipline, and continuous development, particularly because academic achievement and athletic performance create overlapping demands. This study focuses on two psychological constructs relevant to student-athletes' performance and success: self-concept and mental toughness. Specifically, it determines the level of self-concept and mental toughness of collegiate student-athletes and examines the significant relationship between these variables.

1.1 Dual Academic and Athletic Demands of Collegiate Student-Athletes

Student-athletes are required to pursue academic success while also developing and performing as athletes. This dual responsibility creates pressure to excel in both areas, making it necessary to maintain a healthy balance between academic achievement and athletic development (Gomez et al., 2018; Rutledge, 2023; Uier & Yousuf, 2010). Being a student-athlete is demanding yet rewarding, and it requires continuous development, adjustment, and growth in intercollegiate sports (Gomez et al., 2018; Rutledge, 2023). In this context, understanding student-athletes' sports performance and success require attention to how they perceive their own abilities, particularly through self-concept and mental toughness.

1.2 Self-Concept and Mental Toughness in Student-Athlete Development

Self-concept refers to one's understanding of the self and answers the question "Who am I?" (Ackerman, 2018; Cherry, 2024; Yahaya, 2008). It involves awareness of one's inclinations, thoughts, preferences, habits, hobbies, skills, and weaknesses (Ackerman, 2018; Cherry, 2024). It also includes the conscious recognition of one's thoughts, feelings, behaviors, and traits. Self-concept is further described as the totality of a multifaceted, organized, and dynamic set of

learned principles, attitudes, and views that a person accepts as true about oneself (Yahaya, 2008). It is shaped by personal experiences and interpretations of the environment, as well as by interactions with significant people, including family members and close friends who contribute to one's self-identity (Cherry, 2024; Yahaya, 2008). Mental toughness, meanwhile, refers to the athlete's ability to maintain an optimal state of performance during competition (Coulter et al., 2010; Gumusdag, 2023). It includes values, attitudes, emotions, cognitions, and behaviors that influence how athletes manage, respond to, and evaluate both positive and negative demands in order to achieve sport objectives (Aryanto & Larasati, 2020; Cowden, 2017). Mentally tough athletes are deliberate thinkers who remain calm, focused, and empowered under pressure (Coulter et al., 2010; Juan, 2015). They are also capable of responding effectively to adverse situations in sports and performing consistently despite challenging competitive conditions.

1.3 Collegiate Student-Athletes in the State University Context

The study is situated within the context of collegiate student-athletes in a state university. While self-concept and mental toughness have been studied separately, many prior studies have used foreign samples and elite athletes (Coulter et al., 2010; Hsieh et al., 2023; Tian & Sun, 2023). This study extends the discussion by focusing on student-athletes in a collegiate setting, where academic responsibilities and athletic expectations intersect. The local institutional context is important because student-athletes must manage both educational and sports-related demands while developing the psychological qualities needed for performance and success.

1.4 Conceptual Dimensions of Self-Concept and Mental Toughness

The conceptual basis of the study is anchored on self-concept and mental toughness as psychological constructs that may influence student-athletes' performance and development. Self-concept is examined in terms of self-fulfillment, autonomy, honesty, and emotional self-concept (Goñi et al., 2011). Mental toughness is examined in terms of control, commitment, challenge, and confidence (Coulter et al., 2010; Gumusdag, 2023; Juan, 2015). These constructs provide the basis for understanding how student-athletes perceive themselves and how they respond to competitive and academic pressures.

1.5 Research Gap on the Relationship Between Self-Concept and Mental Toughness

Although self-concept and mental toughness have been studied in previous research, they have often been examined separately and commonly with foreign samples or elite athletes (Meggs et al., 2013; Tian & Sun, 2023). This creates a gap in understanding how these two variables relate among collegiate student-athletes in a state university. Thus, the study seeks to assess the level of self-concept of student-athletes in terms of self-fulfillment, autonomy, honesty, and emotional self-concept; determine their level of mental toughness in terms of control, commitment, challenge, and confidence; and analyze the significant relationship between the two variables.

1.6 Alignment with SDG 3 and SDG 4 in Student-Athlete Well-Being and Education

This study aligns with SDG 3 – Good Health and Well-Being because it focuses on the psychological qualities of student-athletes, particularly self-concept and mental toughness, which are connected to mental and physical performance. It also supports SDG 4 – Quality Education because student-athletes must balance academic achievement with athletic development, making their holistic growth relevant to educational success and institutional support.

1.7 Multidisciplinary Sustainability Relevance of Student-Athlete Development

The study contributes to educational sustainability by emphasizing the need to support student-athletes in balancing academic and athletic responsibilities. It also relates to public health and well-being sustainability by focusing on mental toughness and self-concept as psychological dimensions that may affect performance, coping, and development. In an institutional context, the study may help strengthen understanding of student-athletes' needs and support more responsive academic and athletic environments.

2. Material and methods

2.1 Research Design

The study employed a descriptive-correlational research design to answer its objectives. This design was used to describe the levels of self-concept and mental toughness among student-athletes and determine the significant relationship between the two variables.

2.2 Locale of the Study

The study was conducted at Isabela State University, Echague, Philippines. The participants were student-athletes who qualified for the 2025 University games.

2.3 Respondents of the Study

The respondents of the study were one hundred six (106) student-athletes from Isabela State University, Echague, Philippines. They were selected from various sporting events and had qualified for the 2025 University games.

2.4 Sample and Sampling Procedure

The study used a sample of one hundred six (106) student-athletes who were randomly selected from various sporting events. Only those who qualified for the 2025 University games were included in the study.

2.5 Research Instrument

The study used the Personal Self-Concept Questionnaire to measure the self-concept of student-athletes (Goñi et al., 2011). The questionnaire consists of twenty-two (22) items and measures overall self-concept through four subcategories: self-fulfillment, which refers to realizing one's deepest ambitions and capabilities; autonomy, which refers to the ability to act on one's values and interests; honesty, which refers to moral character showing integrity and transparency; and emotional self-concept, which refers to the ability to understand one's own emotions. The responses used a four-point Likert scale ranging from totally disagree to totally agree, with 1.00–1.75 interpreted as low, 1.76–2.50 as moderate, 2.51–3.25 as high, and 3.26–4.00 as very high.

The Mental Toughness Questionnaire was also used to measure student-athletes' mental toughness (Haqiyah, *et al*, 2023). It consists of twenty-seven (27) items categorized into control, commitment, challenge, and confidence. Control refers to having authority over anything; commitment refers to engaging in something significant; challenge refers to an action that tests the individual; and confidence refers to having little doubt about oneself and one's abilities. The questionnaire used a four-point Likert scale: 1 for never, 2 for only occasionally, 3 for usually, and 4 for always. To ascertain the total level of mental toughness, calculate subscale averages and find the mean score for each of the four domains where total Mental Toughness level is low if score ranges between 27-54; moderate level is between score ranges between 54.01-81 while a high-level means having a score ranging between 81.01-108. Specific dimensions such as control are low with score ranges between 5-10; moderate level with score ranges between 10.01-15 and high with score ranges from 15.01-20. Commitment is low between score ranges 4-8; moderate with score ranges between 8.01-12 and high with score ranges between 12.01-16. Challenge is low between score ranging from 9-18; moderate with scores 18.01-27 and high between scores ranging from 27.01-36. Confidence is low between scores 9-18; moderate level with scores ranging from 18.01-27 and at a high level with scores ranging from 27.01-36.

2.6 Data Gathering Procedure

The researchers coordinated with the Campus Sport Director for approval of the gathering of data. Before the administration of the survey questionnaires to the target participants, the objectives of the study were discussed thoroughly, after which, an informed consent was distributed and discussed with the student-athletes specifying that their participation in the study is voluntary and their identity will remain confidential. To preserve anonymity, results would be presented in aggregate form. No participants were physically or psychologically harmed during the conduct of the study.

2.7 Data Analysis Techniques

The data gathered were computed and analyzed using mean scores to determine the levels of self-concept and mental toughness among the student-athletes. Kendall Tau-b was used to analyze the significant relationship between self-concept and mental toughness.

2.8 Ethical Considerations

The study observed ethical considerations by distributing and discussing informed consent before survey administration. The objectives of the study were explained to the participants, and anonymity was protected by presenting the results in aggregate form. The study also ensured that no participant was physically or psychologically harmed during the conduct of the research.

3. Results and Discussion

3.1 Psychological Profile of Student-Athletes

3.1.1 Level of Self-Concept

The findings showed that student-athletes had a high level of self-concept, with an overall mean score of 3.12. Among the dimensions, honesty obtained the highest mean of 3.26, followed by self-fulfillment with a mean of 3.20, emotional self-concept with a mean of 3.01, and autonomy with a mean of 3.0. These results indicate that the student-athletes generally agreed with the statements measuring their self-concept, while honesty emerged as the strongest dimension. The result suggests that student-athletes have high levels of self-fulfillment, autonomy, emotional self-concept, and honesty, indicating a strong regard for their capacity to achieve life goals, make decisions, regulate emotions, and view themselves as decent individuals. Athletes who experience fulfillment in sports tend to show resilience and motivation to perform (Ivtzan et al., 2013). Autonomy in sports is also linked to sport enjoyment, sport commitment, and reduced athlete burnout (Amorose & Anderson, 2015; Mossman et al., 2022; Pedreno et al., 2015; Pulido et al., 2014; Pulido et al., 2018). Moreover,

coach support for autonomy may predict favorable athlete performance (Amorose & Anderson, 2015; Mossman et al., 2022).

Given the physical and psychological demands of sports, emotional regulation is important for managing stress, achieving optimal performance, and improving well-being (Robazza et al., 2023). Personal values such as honesty also promote fair play, integrity, credibility, respect, and sportsmanship, which help shape athletes' character and create a healthy competitive environment (Ring et al., 2023). Thus, a high level of self-concept may also reflect self-actualization or self-realization, although further improvement may still strengthen student-athletes' awareness, understanding, and clarity of self-concept (Ivtzan et al., 2013). The result of the present study may seem to be favorable, however, a room for improvement can still be done to attain better awareness, understanding and clarity of the student-athletes' self-concept.

3.1.2 Level of Mental Toughness

The findings revealed that student-athletes' level mental toughness ranged from moderate to high across the four dimensions. Challenge and control obtained mean scores of 23.37 and 14.30 respectively which refer to a moderate level on these dimensions. Student-athletes' generally views pressures, setbacks, and changes as opportunities to learn, though remains slightly vulnerable to heavy competitive strain. Additionally, they Usually exerts strong emotional control and maintains a solid belief in controlling life/game outcomes under stress. Conversely, the student-athletes' level of confidence and commitment were reported to be at a high level with mean scores of 28.53 and 12.90 respectively. This suggest that they possess robust self-belief in athletic skills and high interpersonal confidence when dealing with opponents or officials and they are consistently goal-oriented by routinely sticks to training regimens and maintains discipline despite obstacles.

The four C's of mental toughness include control, commitment, challenge, and confidence (Coulter et al., 2010; Gumusdag, 2023) define Control as refers to the extent to which a person feels in control of life, while commitment refers to persistence in achieving goals and completing tasks successfully. Challenge reflects the extent to which student-athletes view difficulties as opportunities for self-development, and confidence refers to self-belief in completing difficult tasks. The findings suggest that student-athletes are coping with control and challenge indicates low self-trust and greater difficulty in viewing challenges as opportunities for growth.

Overall, the student-athletes may show a strong, resilient profile as seen in their moderate level of mental toughness indicated in the mean score of 79.10 suggests a room for improvement to be able to deal with sports-related challenges at an optimum level. Athletes need psychological attributes to cope with the challenges of sports, and mental toughness has been recognized as an important factor in optimal sports performance (Cowden, 2017; Hsieh et al., 2023; Pandian et al., 2022). Previous authors also acknowledged the positive association between mental toughness and sport performance, emphasizing that mentally tough athletes can handle pressure, persist despite adversity, and demonstrate superior mental skills (Cowden, 2017; Guskowska & Wojcik, 2021; Hsieh et al., 2023).

3.2 Relationship Between Self-Concept and Mental Toughness

The findings showed a significant relationship between student-athletes' self-concept and mental toughness, as indicated by a tau-b value of 0.28 and a p-value of 0.02. This result implies that the two variables were significantly associated among the student-athletes. The significant relationship indicates that self-concept and mental toughness may influence and strengthen one another (Meggs et al., 2013; Tian & Sun, 2023).

A stronger understanding of the self may contribute to greater mental resilience, self-belief, and certainty in achieving goals. Similarly, documented literature affirmed that self-concept is an internal factor affecting mental toughness (Aryanto & Larasati, 2020; Meggs et al., 2013). This suggests that developing mentally tough student-athletes requires opportunities for them to understand their strengths and weaknesses. Strengthening mental toughness may therefore be connected to maintaining and promoting clarity in one's self-concept (Tian & Sun, 2023).

4. Conclusion & Recommendations

The study concludes that although the student-athletes demonstrated a high level of self-concept, they still need to strengthen their mental resilience in order to better manage pressure, handle demanding tasks, and reduce tendencies toward self-criticism and anxiety in sports situations. Achieving mental toughness requires a clear understanding of one's abilities and the capacity to use this self-awareness toward optimum sports performance.

It is recommended that the school's sports development office consider collaborating with a sports psychologist in designing a Psychological Skill Training program alongside physical activities (Juan, 2015; Pandian et al., 2022). This program may focus on reflection, enhancement of self-concept, and strengthening of mental toughness. A personality enhancement seminar may also be conducted to help athletes recognize their strengths and weaknesses, develop a stable self-concept, and engage in activities that build self-confidence, focus, and resiliency.

Compliance with ethical standards

The study observed ethical considerations during the conduct of the research. The objectives of the study were explained to the student-athletes, anonymity was protected by presenting the results in aggregate form, and the study ensured that no participant was physically or psychologically harmed.

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