MENTAL TOUGHNESS AND ATHLETIC IDENTITY AMONG INJURED AND NON-INJURED COLLEGIATE STUDENT-ATHLETES

Dissertation Submitted to Kerala University in Partial Fulfillment of the Requirements for the Award of the Degree of

Master of Science in Counselling Psychology

Submitted by

THOMAS BIJU

(Reg No: LC24PCP15)

Under the Guidance of

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DEPARTMENT OF COUNSELLING PSYCHOLOGY LOYOLA COLLEGE OF SOCIAL SCIENCES (AUTONOMOUS).

THIRUVANANTHAPURAM

(2024-2026)

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CERTIFICATE

This is to certify that **Thomas Biju (Reg. No. LC24PCP15)** has successfully carried out the project entitled " ***Mental Toughness And Athletic Identity Among Injured And Non-Injured Collegiate Student Athletes***" in the **Department of Counselling Psychology, Loyola College of Social Sciences (Autonomous), Thiruvananthapuram**, under the supervision and guidance of **the Dr. Jesline Maria M. Mammen, Assistant Professor, Department of Counselling Psychology,** during the Fourth Semester of the M.Sc.Counselling Psychology programme in the academic year 2024–2026.

Dr. Jesline Maria M Mammen **Dr. Ammu Lukose**

Supervising teacher Head of the department in charge

Submitted for the examination held on:

Examiners:

DECLARATION

I **Thomas Biju** do hereby declare that the dissertation entitled *"Mental Toughness And Athletic Identity Among Injured And Non-Injured Collegiate Student Athletes"* submitted to the Department of Counselling Psychology, Loyola College of Social Sciences (Autonomous), Sreekariyam, Thiruvananthapuram, under the supervision and guidance of **Dr. Jesline Maria M. Mammen**, Assistant Professor, Department of Counselling Psychology, in partial fulfilment of the requirements for the award of the degree of Master of Science (M.Sc.) in Counselling Psychology of Kerala University, is a bona fide work carried out by me during the academic year 2024–2026

I further declare that this work has not been submitted either in part or in full for the award of any other degree, diploma, fellowship, or any other similar title in this or any other institution or university.

Place: Sreekariyam

Date:

THOMAS BIJU

M.Sc. Counselling Psychology

IV Semester

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THOMAS BIJU

Abstract

Sports injuries are common among collegiate athletes and may influence not only physical performance but also important psychological characteristics such as mental toughness and athletic identity. Understanding these psychological factors is essential for facilitating effective rehabilitation, enhancing athletic performance, and promoting athletes' overall psychological well-being. The present study examined mental toughness and athletic identity among injured and non-injured collegiate student-athletes. A quantitative, non-experimental, cross-sectional comparative-correlational design was adopted. The sample consisted of 141 collegiate student-athletes (65 injured and 76 non-injured), aged 18–26 years, selected through purposive sampling. Data were collected using the Mental Toughness Questionnaire (MTQ-18) and the Athletic Identity Measurement Scale–Short Form (AIMS-7). The findings revealed that injured athletes reported significantly higher mental toughness and athletic identity than non-injured athletes. The study highlights the importance of integrating psychological support into injury rehabilitation and athlete development to promote successful recovery and overall psychological well-being.

Keywords: Mental Toughness, Athletic Identity, Injured Athletes, Non-Injured Athletes, Collegiate Student-Athletes.

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CHAPTER I
INTRODUCTION

Participation in sports has become an integral component of physical health, psychological well-being, personality development, and social interaction. Competitive sports, particularly at the collegiate level, provide opportunities for individuals to develop physical competence, leadership qualities, teamwork, discipline, and resilience while simultaneously pursuing higher education. Collegiate student-athletes occupy a unique position because they are expected to balance the demands of academic achievement with the rigorous physical, technical, and psychological requirements of competitive sports. Daily training sessions, academic responsibilities, competitions, performance expectations, and interpersonal relationships create a demanding environment that requires athletes to possess not only physical fitness but also strong psychological resources.

In recent decades, sport psychology has increasingly emphasized the importance of psychological factors in athletic performance and well-being. Athletic success is no longer viewed solely as a product of physical ability or technical skill but as the outcome of an interaction between physical preparation and psychological functioning. Psychological characteristics such as confidence, motivation, concentration, emotional regulation, commitment, and self-belief play an important role in determining an athlete's ability to perform consistently under pressure. Consequently, researchers have devoted considerable attention to identifying psychological factors that enable athletes to cope successfully with challenges encountered throughout their sporting careers.(Jones et al., 2007).

Among the psychological characteristics associated with athletic success, mental toughness has emerged as one of the most influential constructs in contemporary sport psychology. Mental toughness refers to the ability to remain confident, committed, emotionally controlled, and resilient while facing stress, pressure, adversity, and setbacks (Clough et al., 2002). Athletes possessing higher levels of mental toughness generally display greater persistence, emotional stability, self-regulation, and optimism, enabling them to maintain concentration during competition and recover effectively from failures and setbacks (Crust & Clough, 2011; Cowden, 2017).

Mental toughness becomes particularly important when athletes experience sports injuries. Injury often results in temporary withdrawal from training and competition, creating uncertainty regarding recovery and future performance. During rehabilitation, athletes may experience frustration, anxiety, sadness, fear of re-injury, and reduced confidence. Research has shown that athletes with higher mental toughness are more likely to remain committed to rehabilitation programmes, regulate negative emotions effectively, and successfully return to sport (Tawil et al., 2025; Sajedi & Kırkbir, 2020). Furthermore, Madrigal and Gill (2014) demonstrated that mental toughness may fluctuate throughout rehabilitation, highlighting the importance of psychological support during recovery.

Another important construct in sport psychology is athletic identity. Brewer, Van Raalte, and Linder (1993) defined athletic identity as "the degree to which an individual identifies with the athlete role." Athletic identity reflects the strength of an individual's psychological attachment to sport and the importance of athletic participation within their overall self-concept (Brewer et al., 1993). Athletes with strong athletic identities often devote substantial time, effort,

and emotional investment to sport participation and generally display greater commitment, persistence, and motivation toward training and competition (Murphy et al., 1996).

Athletic identity develops gradually through continuous involvement in sports and is influenced by personal, social, and environmental factors such as competitive success, support from coaches and family members, peer recognition, and institutional opportunities (Lally & Kerr, 2005). To assess this construct, Brewer and Cornelius (2001) developed the Athletic Identity Measurement Scale–Short Form (AIMS-7), which measures the strength and centrality of the athlete role within an individual's self-concept.

Although a strong athletic identity is associated with motivation and dedication, it may also create psychological vulnerability when sport participation is disrupted. According to the Identity Foreclosure Perspective, athletes who become excessively committed to the athlete role may experience significant distress when injury, retirement, or performance decline threatens this aspect of their identity (Murphy et al., 1996). Consequently, understanding athletic identity is essential when examining athletes' psychological responses to injury.

Mental toughness

Mental toughness enables athletes to remain focused, confident, and determined under demanding circumstances, whereas athletic identity reflects the extent to which individuals perceive sport participation as an integral component of their self-concept. Together, these psychological characteristics influence athletes' motivation, coping strategies, rehabilitation adherence, and responses to both success and adversity. Since sports injuries temporarily disrupt athletic participation, understanding how mental toughness and athletic identity differ between injured and non-injured collegiate student-athletes may provide valuable insights into athletes'

psychological functioning and recovery processes. The present chapter introduces the major constructs of the study, namely mental toughness, athletic identity, sports injury, injured athletes, and non-injured athletes, and reviews relevant theoretical perspectives and empirical evidence supporting the need to examine these variables among collegiate student-athletes.

Mental toughness has become one of the most widely investigated psychological constructs in contemporary sport psychology because of its strong association with athletic success, performance consistency, emotional regulation, and effective coping under pressure. Elite athletes frequently perform in highly demanding environments characterised by intense competition, uncertainty, physical fatigue, public expectations, and performance-related stress. The ability to remain composed, motivated, and focused despite these challenges distinguishes successful athletes from their peers. Consequently, mental toughness has been recognised as a fundamental psychological characteristic contributing to excellence in sport.

Mental toughness is considered a multidimensional psychological resource that enables athletes to cope effectively with competitive stress, setbacks, failures, and adversity. Athletes possessing higher levels of mental toughness generally display greater emotional stability, persistence, optimism, confidence, and self-regulation. They are better able to maintain concentration during competition, recover from mistakes, and sustain high levels of motivation despite experiencing difficult circumstances. These characteristics contribute not only to superior athletic performance but also to improved psychological well-being and long-term sporting success.

Mental toughness becomes particularly important when athletes experience sports injuries. Injury often results in temporary withdrawal from training and competition, creating

uncertainty regarding recovery and future performance. During rehabilitation, athletes may experience emotional reactions including frustration, anxiety, sadness, fear of re-injury, and reduced confidence. Athletes with higher levels of mental toughness are more likely to remain committed to rehabilitation programmes, regulate negative emotions effectively, maintain confidence in recovery, and successfully return to sport. Consequently, mental toughness has increasingly been recognised as a protective psychological factor that facilitates successful adaptation throughout the injury rehabilitation process.

Athletic Identity

Brewer et al. (1993) defined athletic identity as "the degree to which an individual identifies with the athlete role." According to this definition, athletic identity reflects the strength of an individual's psychological attachment to sport and the importance of athletic participation within their overall self-concept. Individuals with a strong athletic identity typically perceive sport as a central aspect of their lives and derive a significant portion of their self-esteem, confidence, and personal satisfaction from athletic participation and achievement.

Athletic identity develops gradually through continuous involvement in sports and is influenced by numerous personal and environmental factors. Participation in organized sports from an early age, competitive success, encouragement from parents and coaches, recognition from peers, media exposure, and institutional support all contribute to strengthening an athlete's identity. For collegiate student-athletes, representing educational institutions in competitions further reinforces their identity as athletes while simultaneously increasing their commitment toward maintaining athletic performance.

A strong athletic identity offers several positive outcomes. Athletes who strongly identify with their athletic role generally display higher levels of commitment, motivation, persistence, self-confidence, and dedication toward training and competition. They are more likely to establish performance-oriented goals, invest substantial effort in skill development, and demonstrate perseverance during challenging situations. Strong athletic identity has also been associated with greater psychological investment in sport, improved competitive performance, and increased satisfaction derived from athletic participation.

For the purpose of the present study, an injured athlete is defined as a college-enrolled athlete aged between 18 and 26 years who has sustained a sports-related physical injury within the past six (6) months that resulted in restriction from regular training or competition for a minimum of one (1) week and required medical consultation or intervention.

Sports Injury

Sports injury refers to any physical complaint sustained by an athlete that results from participation in training or competition, irrespective of whether it requires medical attention or causes time loss from sports participation (Fuller et al., 2006). In the present study, sports injury specifically refers to a sports-related physical injury that restricts an athlete's regular training or competition for a minimum of one week and requires medical consultation or intervention.

According to Fuller et al. (2006), sports injuries are commonly classified based on the need for medical attention and the amount of time lost from participation. Such injuries may include sprains, strains, fractures, ligament tears, dislocations, and overuse injuries. Beyond their physical consequences, sports injuries can also have significant psychological effects, including

reduced confidence, anxiety, frustration, fear of re-injury, and disruptions in athletic identity and performance.

An injured athlete is an athlete who has sustained a sports-related injury resulting from participation in sport or exercise that requires medical attention and/or leads to restriction from training or competition for at least one day beyond the day of injury (Fuller et al., 2006).For the purpose of the present study, an injured athlete is defined as a college-enrolled athlete aged 18–26 years who has sustained a sports-related physical injury within the past six (6) months that resulted in restriction from regular training or competition for a minimum of one (1) week and required medical consultation or intervention.

A non-injured athlete refers to a college-enrolled athlete aged between 18 and 26 years who has not sustained any sports-related physical injury within the past six(6) months and is currently participating in regular training or competition without any physical restriction or medical intervention.

For the purpose of the present study, a non-injured athlete is defined as a college-enrolled athlete aged 18–26 years who has not sustained any sports-related physical injury within the past six (6) months and is currently participating in regular training or competition without any physical restriction or medical intervention.

Unlike injured athletes, non-injured athletes continue to engage consistently in practice sessions, competitions, and physical conditioning. Regular participation enables them to maintain athletic performance, physical fitness, competitive confidence, and continuous interaction with coaches and teammates. Their uninterrupted sporting experience may contribute differently to the development of psychological characteristics such as mental toughness and

athletic identity. Comparing injured and non-injured athletes therefore provides valuable insight into how injury status influences important psychological variables among collegiate student-athletes.

Mental toughness and athletic identity are closely interconnected within the sporting environment. Athletes possessing higher mental toughness are often more capable of maintaining motivation, regulating emotions, and adapting to adversity, whereas a strong athletic identity reinforces commitment toward athletic participation and achievement. However, when injuries interrupt sporting involvement, these psychological characteristics may be influenced differently depending upon the athlete's coping abilities, rehabilitation experiences, and level of identification with the athletic role. Understanding these differences forms the basis for the present study and provides important implications for sport psychologists, counsellors, coaches, athletic trainers, and rehabilitation professionals involved in supporting collegiate athletes.

Supporting this perspective, Tawil et al. (2025) examined the intermediary role of mental toughness in the relationship between pain self-efficacy and fear avoidance among 172 elite injured athletes. Using the Sports Mental Toughness Questionnaire (SMTQ), the Athlete Fear Avoidance Questionnaire (AFAQ), and the Pain Self-Efficacy Questionnaire (PSEQ), the researchers reported that mental toughness was positively associated with pain self-efficacy and negatively associated with fear avoidance. Athletes with higher mental toughness demonstrated greater confidence in managing pain and rehabilitation while experiencing lower levels of fear related to movement and re-injury. The authors concluded that mental toughness functions as an important psychological mechanism that promotes effective rehabilitation and facilitates successful recovery following sports injuries.

Clough et al. (2020) investigated the relationship between mental toughness and sports burnout among injured university athletes. Their findings revealed significant negative relationships between the dimensions of mental toughnesas and sports burnout. Athletes with higher mental toughness experienced lower emotional exhaustion, reduced frustration, and better psychological adjustment throughout rehabilitation. The study concluded that mental toughness protects athletes from the negative psychological consequences associated with injury and enhances their ability to cope with rehabilitation-related challenges.

Further evidence was provided by Madrigal and et al.(2014), who conducted a longitudinal investigation of psychological responses among Division I female athletes during injury rehabilitation. Mental toughness was assessed across multiple stages of recovery, enabling the researchers to examine changes over time. The findings demonstrated that mental toughness was not static but fluctuated throughout rehabilitation, reflecting considerable individual differences in psychological adaptation. The authors emphasised that rehabilitation programmes should recognise these individual variations and incorporate psychological interventions that strengthen athletes' confidence, motivation, and coping abilities during recovery.

The theoretical understanding of mental toughness has also been strengthened through the work of Clough et al. (2002), who introduced the influential 4Cs Model consisting of Control, Commitment, Challenge, and Confidence. According to the model, mentally tough individuals effectively regulate emotions, remain committed to long-term goals, perceive challenges as opportunities for growth, and demonstrate confidence in their own abilities. This model has become one of the most widely accepted frameworks for understanding mental toughness in sport psychology and serves as the conceptual foundation for numerous contemporary studies.

In addition, Gucciardi et al. (2015) demonstrated that mentally tough athletes are more likely to translate their intentions into consistent sporting behaviour. Their findings suggested that mental toughness strengthens athletes' commitment to athletic goals, enhances persistence during demanding situations, and promotes adaptive psychological functioning. These findings further reinforce the importance of mental toughness in maintaining both performance and psychological well-being among athletes.

Athletic identity has similarly received considerable attention because of its influence on athletes' motivation, self-concept, rehabilitation behaviour, and psychological adjustment. Athletes who strongly identify with their athletic role often display greater dedication toward training and competition. However, because sport forms a central aspect of their identity, injury may produce greater emotional distress when participation is temporarily interrupted.

A comprehensive understanding of athletic identity in relation to injury was provided by Renton and et al.(2021) through a scoping review involving 22 studies comprising 1,852 athletes. The review reported that athletic identity was positively associated with mental toughness, rehabilitation adherence, functional recovery, and return-to-sport outcomes. At the same time, athletes with stronger athletic identities were found to experience greater depressive symptoms and psychological distress when injuries prevented sport participation. The authors concluded that athletic identity functions as both a protective and potentially vulnerable psychological factor, depending on the circumstances surrounding injury and rehabilitation.

McGinley et al. (2022) investigated psychosocial factors influencing athletic identity among 226 athletes recovering from anterior cruciate ligament (ACL) injuries. The study reported that years of sport participation, competitive level, coachability, and other psychosocial characteristics significantly influenced athletic identity during rehabilitation. The findings

suggested that athletic identity develops through continuous sporting experiences and social interactions and plays an important role in athletes' adjustment following injury.

Further support was provided by Loftin, Covassin, et al.(2023), who examined athletic identity among athletes recovering from sport-related concussion using the Integrated Model of Response to Sport Injury. The authors concluded that athletic identity significantly influenced psychological adjustment, symptom reporting, rehabilitation behaviour, and health outcomes following concussion. Athletes with stronger athletic identities demonstrated greater commitment toward rehabilitation programmes but also experienced increased psychological challenges when unable to participate in sport.

Collectively, these studies indicate that both mental toughness and athletic identity are essential psychological characteristics influencing athletes' responses to injury, rehabilitation experiences, and return-to-sport outcomes. While mental toughness enhances confidence, emotional regulation, and persistence during rehabilitation, athletic identity influences the extent to which athletes remain psychologically invested in sport despite temporary interruption of participation. The interaction between these constructs provides valuable insight into the psychological functioning of athletes and highlights their importance within sport and counselling psychology.

Despite the growing body of international research, comparatively few studies have directly compared mental toughness and athletic identity between injured and non-injured collegiate student-athletes, particularly within the Indian context. Much of the existing literature has focused either on injured athletes alone or on elite sporting populations, leaving limited evidence regarding collegiate athletes who balance both academic and sporting responsibilities.

Furthermore, limited research has simultaneously examined the relationship between mental toughness and athletic identity while considering injury status among Indian collegiate athletes.

Therefore, the present study seeks to compare mental toughness and athletic identity among injured and non-injured collegiate student-athletes and to examine the relationship between these psychological constructs. By addressing this gap, the study is expected to contribute to the growing literature in sport and counselling psychology while providing practical implications for sport psychologists, counsellors, coaches, athletic trainers, physiotherapists, and rehabilitation professionals working with collegiate athletes. The findings may also facilitate the development of evidence-based psychological interventions aimed at enhancing athletes' mental well-being, rehabilitation experiences, and successful return to competitive sport.

Need for the Study

Sports injuries are an inevitable part of competitive sports and can influence not only athletes' physical performance but also their psychological functioning. Psychological characteristics such as mental toughness and athletic identity play an important role in determining how athletes respond to injury, cope with rehabilitation, and maintain their commitment to sport. While these constructs have been studied independently, comparatively few studies have examined them together among injured and non-injured collegiate student-athletes.

Most existing research has focused on elite or professional athletes, with limited attention given to collegiate student-athletes who experience the dual demands of academic responsibilities and competitive sports. Furthermore, studies comparing the psychological characteristics of injured and non-injured athletes are scarce, particularly within the Indian

context. As collegiate athletes represent an important population in competitive sports, understanding how injury status influences mental toughness and athletic identity is essential for promoting their psychological well-being and athletic development.

Therefore, the present study was undertaken to compare mental toughness and athletic identity between injured and non-injured collegiate student-athletes and to examine the relationship between these variables. The findings are expected to contribute to the existing body of knowledge in sport psychology and provide useful information for sport psychologists, counsellors, coaches, athletic trainers, and rehabilitation professionals in developing psychological interventions that support athletes during injury recovery and enhance their overall sporting experience.

Statement of the Problem

Sports injuries can significantly influence an athlete's psychological functioning, particularly aspects related to confidence, motivation, emotional well-being, and self-concept. Although mental toughness and athletic identity have individually received considerable attention in sport psychology, limited research has examined these constructs together among injured and non-injured collegiate student-athletes. Furthermore, within the Indian context, there is a lack of comparative studies investigating differences in mental toughness and athletic identity based on injury status among collegiate athletes.

Understanding these psychological characteristics is particularly important among collegiate student-athletes, who are required to balance academic responsibilities with the physical and psychological demands of competitive sports. Examining mental toughness and athletic identity among injured and non-injured athletes may provide valuable insights into their

psychological adjustment and contribute to the development of appropriate psychological support and rehabilitation strategies.Thus, the problem for the present study is entitled "Mental Toughness and Athletic Identity Among Injured and Non-Injured Collegiate Student-Athletes."

Delimitations of the Study

The present study was delimited to collegiate student-athletes aged between 18 and 26 years who were enrolled in colleges and universities in india. The sample included both male and female athletes with individual and groups events who had been actively training ain their respective sports for a minimum of three years and had won at least one district-level medal.

The study included two groups of participants: injured athletes, who had sustained a sports-related physical injury within the past six months that restricted regular training or competition for a minimum of one week and required medical consultation or intervention; and non-injured athletes, who had not sustained any sports-related physical injury within the past six months and were participating in regular training and competition without any physical restriction.

Athletes younger than 18 years or older than 26 years, recreational athletes, athletes with less than three years of training experience, and those who had not achieved at least a district-level medal were excluded from the study. The study employed a cross-sectional, comparative-correlational research design and relied exclusively on standardized self-report instruments, namely the Mental Toughness Questionnaire (MTQ-18) and the Athletic Identity Measurement Scale–Short Form (AIMS-7), for data collection.

Chapter -II

Review of Literature

Theoretical Review

In order to understand the psychological foundations of mental toughness and athletic identity, particularly among injured and non-injured collegiate student-athletes, it is essential to examine the major theoretical frameworks that explain the development, maintenance, and functioning of these constructs. Sports participation exposes athletes to competitive pressure, performance expectations, injuries, and various psychological challenges. The present section reviews the principal theories and conceptual models that provide the theoretical basis for the current study.

Theoretical Review On Mental Toughness

The 4Cs Model of Mental Toughness

The 4Cs Model of Mental Toughness proposed by Clough et al. (2002) is one of the most influential theoretical frameworks in sport psychology. According to this model, mental toughness consists of four interrelated components:

1) Control – the ability to regulate emotions and perceive oneself as having influence over life events.

2) Commitment – the tendency to persist in pursuing goals despite obstacles and setbacks.

3) Challenge – viewing change, adversity, and difficult situations as opportunities for growth rather than threats.

4) Confidence – possessing strong belief in one's abilities and interpersonal competence.

The model suggests that mentally tough individuals cope effectively with stress, pressure, and adversity while maintaining motivation and performance. In the athletic context, the 4Cs framework explains why some athletes are better able to manage competitive demands, recover from failures, and adapt to injuries. Because sports injuries often require persistence, emotional control, and confidence during rehabilitation, the 4Cs model provides an important conceptual foundation for examining mental toughness among injured and non-injured athletes.

Framework of Mental Toughness in Elite Athletes

Jones et al. (2007) developed a framework of mental toughness based on interviews with world-class athletes and coaches. The framework identified characteristics such as unshakable self-belief, attentional control, resilience, determination, and the ability to thrive under pressure. The authors proposed that mentally tough athletes consistently maintain focus and confidence regardless of competitive circumstances.

This perspective emphasizes that mental toughness is not merely resistance to stress but also the capacity to perform optimally during challenging situations. The framework is particularly relevant to collegiate athletes, who must balance academic responsibilities, athletic performance, and recovery from injuries.

Cognitive-Behavioral Perspective of Mental Toughness

A cognitive- behavioral perspective, discussed by Crust and Clough (2011), proposes that mental toughness develops through athletes' thoughts, beliefs, and experiences. According to this view, mentally tough athletes engage in adaptive self-talk, maintain positive expectations, and interpret setbacks as manageable challenges. Mental toughness can therefore be strengthened through psychological skills training, goal setting, and coping interventions.

This perspective is relevant to the present study because injury experiences may influence athletes' cognitions, coping patterns, and emotional responses, thereby affecting their level of mental toughness.

Theoretical Review On Athletic Identity

Athletic Identity Theory

Brewer et al. (1993) conceptualized athletic identity as the degree to which an individual identifies with the athlete role. Athletic Identity Theory is grounded in Identity Theory, which proposes that individuals develop self-concepts based on the social roles they occupy and the meanings attached to those roles.Athletes with strong athletic identities typically invest substantial time, energy, and emotion in sport participation. Such identification often contributes positively to motivation, commitment, persistence, and performance. However, when participation is interrupted due to injury, athletes may experience distress because an important aspect of their self-concept is threatened. This theory provides a strong foundation for understanding psychological adjustment among injured athletes.

Athletic Identity Measurement Framework

To operationalize the construct of athletic identity, Brewer et al. (1993) developed the Athletic Identity Measurement Scale (AIMS), which was later revised into shorter forms such as the AIMS-7 (Brewer & Cornelius, 2001). The framework proposes that athletic identity reflects the strength and centrality of the athlete role within an individual's self-concept.Athletes who score high on athletic identity generally demonstrate greater commitment to training, stronger emotional attachment to sport, and increased motivation to return to participation following

injury. Consequently, the AIMS framework is particularly relevant to the present study, which examines athletic identity among injured and non-injured collegiate athletes.

Identity Foreclosure Perspective

The concept of identity foreclosure, discussed by Murphy et al. (1996), suggests that some athletes become so strongly committed to the athlete role that they neglect the development of alternative identities. While strong athletic identity can enhance performance and dedication, excessive identification with sport may increase psychological vulnerability when athletes experience injury, retirement, or performance decline.

This perspective is important for the present study because injured athletes may encounter challenges to their self-concept when they are temporarily unable to train or compete.

Integrated Model of Response to Sport Injury

The Integrated Model of Response to Sport Injury proposed by Wiese-Bjornstal et al. (1998) provides a comprehensive explanation of athletes' psychological responses to injury. According to the model, an athlete's reaction to injury is influenced by:

1. Personal factors such as personality, coping resources, previous experiences, and athletic identity.
2. Situational factors such as social support, rehabilitation environment, and sport-related pressures.
3. Cognitive appraisal of the injury and its consequences.
4. Emotional responses including anxiety, frustration, sadness, and fear of re-injury.

5. Behavioral responses such as rehabilitation adherence, coping efforts, and return-to-sport behaviors.

The model emphasizes that injury is not solely a physical event but also a significant psychological experience. Athletes' thoughts, emotions, and behaviors interact continuously throughout the rehabilitation process. This framework is highly relevant to the present study because it helps explain how injury status may influence mental toughness and athletic identity.

Biopsychosocial Perspective of Sports Injury

The biopsychosocial perspective proposes that sports injuries result from the interaction of biological, psychological, and social factors. Psychological characteristics such as stress, coping skills, confidence, resilience, and identity can influence both injury experiences and rehabilitation outcomes. Social support from coaches, teammates, family members, and medical professionals also plays an important role in recovery.

This perspective suggests that injured and non-injured athletes may differ not only in physical condition but also in psychological functioning, making it appropriate to examine mental toughness and athletic identity together.

Relationship Between Mental Toughness and Athletic Identity Among Athletes

Theoretically, mental toughness and athletic identity are closely related constructs.

Athletes who strongly identify with the athlete role often demonstrate greater commitment, persistence, and motivation to achieve sporting goals. Similarly, mentally tough athletes are more likely to maintain effort, regulate emotions, and cope effectively with adversity. Petrie, Deiters, and Harmison (2014) proposed that mental toughness and athletic identity may

interact to influence athletes' responses to stress and injury, while Altıntaş and Kelek (2017) suggested that a stronger athletic identity may contribute to the development and maintenance of mental toughness**.**

Taken together, the 4Cs Model of Mental Toughness (Clough et al., 2002), Athletic Identity Theory (Brewer et al., 1993), and the Integrated Model of Response to Sport Injury (Wiese-Bjornstal et al., 1998) provide the principal theoretical foundation for the present study. These frameworks collectively explain how athletes develop resilience, maintain commitment to sport, respond to injury, and incorporate the athlete role into their self-concept. They therefore offer an appropriate conceptual basis for examining mental toughness and athletic identity among injured and non-injured collegiate student-athletes.

Summary

The theoretical review examined the major conceptual frameworks related to mental toughness, athletic identity, and psychological responses to sports injury. Clough, Earle, and Sewell's (2002) 4Cs Model explained mental toughness through the dimensions of Control, Commitment, Challenge, and Confidence, highlighting athletes' ability to cope effectively with pressure and adversity. Jones et al. (2007) emphasized self-belief, resilience, and attentional control among elite performers, while Crust and Clough (2011) proposed that mental toughness can be developed through adaptive cognitions and psychological skills training. Brewer, Van Raalte, and Linder (1993) conceptualized athletic identity as the degree to which an individual identifies with the athlete role, and Murphy, Petitpas, and Brewer (1996) discussed how excessive identification with sport may create vulnerability during injury or other disruptions. Furthermore, Wiese-Bjornstal, Smith, Shaffer, and Morrey's (1998) Integrated Model of Response to Sport Injury explained how personal, situational, cognitive, emotional, and

behavioral factors interact during injury and rehabilitation. Collectively, these theories suggest that mental toughness and athletic identity are important psychological resources that influence athletes' motivation, resilience, coping, rehabilitation adherence, and adjustment to injury, thereby providing a strong theoretical foundation for the present study on injured and non-injured collegiate student-athletes

The empirical review presents previous research findings related to mental toughness, athletic identity, and sports injury among athletes. It examines studies that have investigated the role of mental toughness in coping with pressure, adversity, burnout, and injury rehabilitation, as well as studies exploring the development and consequences of athletic identity in sport participation and recovery from injury. The review also includes research that has examined the relationship between mental toughness and athletic identity and their influence on athletes' motivation, performance, psychological adjustment, and return-to-sport outcomes. By synthesizing the available empirical evidence, this section identifies consistent findings, existing limitations, and research gaps, thereby providing a rationale for the present study on Mental Toughness and Athletic Identity Among Injured and Non-Injured Collegiate Student-Athletes.

Empirical Review

The review of literature provides a comprehensive understanding of the concepts and research related to the present study entitled Mental Toughness and Athletic Identity Among Injured and Non-Injured Collegiate Student-Athletes. This chapter examines theoretical perspectives and empirical findings concerning mental toughness, athletic identity, sports injury, and the psychological experiences of athletes during injury and rehabilitation. The review is organized into studies on mental toughness, studies on athletic identity, and studies that address the relationship between mental toughness and athletic involvement and adaptation. By

reviewing previous research, the chapter identifies important findings, highlights gaps in the existing literature, and establishes the rationale for conducting the present investigation among collegiate student-athletes in the Indian context.

The studies reviewed in this chapter indicate that mental toughness is associated with effective coping, emotional regulation, confidence, persistence, and successful adaptation to stress and injury. Research by Tawil et al. (2025), Sajedi et al. (2020), Nicholls et al. (2008), and Cowden (2017) demonstrated that mentally tough athletes experience lower stress, fear avoidance, and burnout while showing greater confidence and psychological adjustment. Similarly, studies on athletic identity by Renton et al. (2021), McGinley et al. (2022), Loftin et al. (2023), and Lamont-Mills and Christensen (2006) revealed that a strong athletic identity enhances motivation, commitment, rehabilitation adherence, and return-to-sport efforts, although it may also increase emotional distress when sport participation is disrupted by injury. Furthermore, theoretical contributions by Clough et al. (2002) and empirical findings by Gucciardi et al. (2015) suggest that mental toughness plays an important role in

sustaining athletic commitment and engagement. Collectively, these studies highlight the significance of both mental toughness and athletic identity in athletes' performance, rehabilitation, and psychological well-being, while also indicating the need for further research comparing injured and non-injured collegiate student-athletes.

Studies on Mental Toughness

S.Tawil et al. (2025) examined the intermediary role of mental toughness in the relationship between pain self-efficacy and fear avoidance among elite injured athletes. The study employed a cross-sectional design with a sample of 172 injured athletes and utilized the

Sports Mental Toughness Questionnaire (SMTQ), Athlete Fear Avoidance Questionnaire (AFAQ), and Pain Self-Efficacy Questionnaire (PSEQ). The findings revealed that mental toughness was significantly and negatively correlated with fear avoidance ($r = -0.47$, $p < 0.001$) and positively correlated with pain self-efficacy ($r = 0.36$, $p < 0.001$). The results suggest that athletes with higher levels of mental toughness are less likely to experience fear-related avoidance behaviours and are more confident in managing injury-related challenges. The study highlights the protective role of mental toughness during the injury rehabilitation process.

Sajed and et al.(2020) investigated the relationship between mental toughness and sports burnout among injured university athletes. The study found significant negative correlations between mental toughness dimensions and sports burnout. Specifically, confidence ($r = -0.51$), constancy or sustainability ($r = -0.51$), and control ($r = -0.42$) were all negatively associated with burnout levels. These findings indicate that mentally tough athletes are less vulnerable to emotional and physical exhaustion resulting from injury. The study further demonstrated that mental toughness serves as a buffer against the negative psychological consequences of sports injury and contributes to better psychological adjustment.

Cowden (2017) conducted a systematic review to examine the conceptualisation, measurement, and outcomes of mental toughness in sport. The review synthesised findings from numerous studies involving athletes across different competitive levels and sporting disciplines. The findings consistently indicated that mental toughness was positively associated with athletic performance, self-confidence, emotional regulation, effective coping, and psychological well-being. Athletes with greater mental toughness demonstrated better adaptation to competitive pressure and stressful situations than those with lower levels of mental toughness. The review

concluded that mental toughness is a multidimensional construct that contributes significantly to both performance excellence and psychological adjustment in sport.

Madrigal and et al.(2014) explored the psychological responses of Division I female athletes throughout the injury recovery process using a longitudinal case study design. Mental toughness, hardiness, and optimism were assessed at four different stages of recovery. The findings indicated that mental toughness varied across recovery periods and showed substantial individual differences among athletes. The study suggested that mental toughness is not entirely static and may fluctuate in response to injury-related experiences and rehabilitation demands. The authors emphasized the importance of considering individual psychological characteristics when supporting injured athletes during recovery.

Nicholls et al. (2008) investigated the relationship between mental toughness, coping strategies, and perceived stress among competitive athletes using a quantitative correlational research design. The study found that mentally tough athletes were more likely to employ adaptive problem-focused coping strategies and experienced lower levels of perceived stress during competition. In contrast, athletes with lower mental toughness relied more frequently on maladaptive coping responses. The findings suggested that mental toughness facilitates effective stress management and enhances athletes' ability to maintain performance under demanding competitive conditions Studies on Mental Toughness

Studies on Athletic Identity

Loftin, Covassin, and et al.(2023) explored the influence of athletic identity on health outcomes among athletes who had sustained sport-related concussions. Using the Integrated Model of Response to Sport Injury as a framework, the authors examined how athletic identity

shapes emotional and behavioral responses to injury. The study found that athletes with strong athletic identities often experienced greater emotional distress because sport participation represented a central aspect of their self-concept. At the same time, these athletes demonstrated stronger motivation to adhere to treatment recommendations and return to sport. The authors concluded that athletic identity significantly influences both psychological adjustment and rehabilitation outcomes following injury. The study highlights the importance of considering athletic identity when providing psychological support to injured athletes.

McGinley et al. (2022) examined the psychosocial factors influencing athletic identity among youth athletes recovering from ACL injuries. The study included 226 injured athletes and utilized the Athletic Identity Measurement Scale (AIMS) to assess athletic identity. The results indicated that years of sports participation, physical activity level, coachability, and sex were significantly associated with athletic identity. Athletes who had greater involvement in sports and stronger commitment to athletic participation reported higher levels of athletic identity. The study suggested that athletic identity develops through continued engagement in sport and is influenced by both personal and environmental factors. The authors concluded that athletic identity plays an important role in how athletes adjust psychologically to injury and rehabilitation. Understanding these factors may help professionals design interventions that support recovery and maintain positive self-concepts among injured athletes.

Renton and et al.(2021) conducted a scoping review to examine the relationship between athletic identity and sport-related injury outcomes. The review included 22 studies with a combined sample of 1,852 athletes. The findings indicated that athletic identity was positively associated with mental toughness, rehabilitation adherence, functional recovery, and return-to-sport motivation. Athletes with stronger athletic identities demonstrated greater commitment to

rehabilitation and were more likely to engage actively in recovery activities. However, the review also found that strong athletic identity was associated with increased depressive symptoms when athletes were unable to participate in sport due to injury. The authors suggested that athletic identity can function as both a protective and vulnerability factor depending on the circumstances. The review further highlighted the lack of diversity in previous research samples and emphasized the need for studies involving athletes from different cultural backgrounds. This study is highly relevant because it directly links athletic identity with mental toughness and injury-related outcomes.

Lamont-Mills and Christensen (2006) explored the relationship between athletic identity and psychological adjustment among elite athletes. Using a quantitative research design, the study found that athletes with stronger athletic identities reported greater commitment to training and competition but experienced more difficulty adjusting when faced with injury or career transition. The authors suggested that although athletic identity contributes positively to performance and motivation, excessive dependence on the athlete role may increase vulnerability during periods of athletic disruption.

Combined Studies on Mental Toughness and Athletic Identity

Tawil et al. (2025) examined the intermediary role of mental toughness in the relationship between pain self-efficacy and fear avoidance among elite injured athletes. The study employed a cross-sectional design with a sample of 172 injured athletes and utilized the Sports Mental Toughness Questionnaire (SMTQ), Athlete Fear Avoidance Questionnaire (AFAQ), and Pain Self-Efficacy Questionnaire (PSEQ). The findings revealed that mental toughness was significantly and negatively correlated with fear avoidance ($r = -0.47$, $p < 0.001$) and positively correlated with pain self-efficacy ($r = 0.36$, $p < 0.001$). The results suggest that athletes with

higher levels of mental toughness are less likely to experience fear-related avoidance behaviours and are more confident in managing injury-related challenges. The study highlights the protective role of mental toughness during the injury rehabilitation process.

Gucciardi et al. (2015) investigated mental toughness as a moderator of the intention-behavior relationship in sport. The study examined whether mental toughness helps athletes translate their goals and intentions into consistent actions. The findings demonstrated that mentally tough athletes were more likely to maintain commitment to their athletic goals and persist despite challenges and setbacks. Mental toughness strengthened the relationship between intentions and actual sporting behavior, indicating that mentally tough athletes possess greater self-regulation and perseverance. The study concluded that mental toughness is a critical factor in sustaining motivation and long-term athletic engagement. These findings suggest that mental toughness may contribute to the development and maintenance of a strong athletic identity.

Clough and et al.(2002) introduced the influential 4Cs Model of Mental Toughness, consisting of Control, Commitment, Challenge, and Confidence. According to the authors, mentally tough individuals are able to cope effectively with pressure, adversity, and setbacks while maintaining motivation and performance. The model emphasizes emotional control, persistence toward goals, positive perceptions of challenges, and confidence in one's abilities. The study provided the theoretical foundation for understanding mental toughness in sports and has influenced a substantial body of subsequent research. The 4Cs model remains one of the most widely used frameworks for assessing mental toughness among athletes and provides an important conceptual basis for the present study.

Summary

The reviewed studies consistently indicate that mental toughness and athletic identity are important psychological factors influencing athletes' performance, rehabilitation, emotional adjustment, and return-to-sport outcomes. Mental toughness contributes to confidence, perseverance, emotional control, and effective coping, whereas athletic identity strengthens motivation, commitment, and engagement in sport. Although previous studies have provided valuable insights into these constructs, limited research has simultaneously examined mental toughness and athletic identity among injured and non-injured collegiate student-athletes, particularly within the Indian context. This gap provides the rationale for undertaking the present study.

Research Gap

A review of the existing literature indicates that substantial research has been conducted on mental toughness, athletic identity, and the psychological impact of sports injuries. Previous studies have shown that mental toughness contributes to effective coping, emotional regulation, rehabilitation adherence, and athletic performance, while athletic identity influences motivation, commitment, self-concept, and psychological adjustment among athletes. Similarly, several studies have investigated the psychological consequences of sports injuries and the factors affecting rehabilitation and return-to-sport outcomes.

However, most of the existing studies have examined mental toughness and athletic identity as separate constructs, with relatively few studies investigating the relationship between these variables within the same population. Furthermore, research comparing these psychological characteristics between injured and non-injured collegiate student-athletes remains limited.

Existing studies have primarily focused on elite, professional, or recreational athletes, with comparatively less attention given to collegiate student-athletes, who experience the combined demands of academics and competitive sport.

In addition, although sports injuries are known to influence athletes' psychological functioning, there is limited empirical evidence examining whether injury status is associated with differences in both mental toughness and athletic identity simultaneously. Most previous investigations have focused on rehabilitation outcomes, burnout, or psychological distress rather than comparing these two important psychological constructs across injured and non-injured athletes.

Another notable gap is the lack of research conducted within the Indian collegiate sports context. Psychological responses to injury may vary across cultural, educational, and sporting environments, yet studies involving Indian collegiate athletes remain scarce. Consequently, there is insufficient evidence regarding how mental toughness and athletic identity interact among injured and non-injured collegiate student-athletes in India.

Therefore, the present study seeks to address these gaps by comparing mental toughness and athletic identity among injured and non-injured collegiate student-athletes, examining the relationship between these variables within each group, and exploring differences based on event type. The findings are expected to contribute to the existing literature in sport and counselling psychology while providing practical implications for psychological support and injury rehabilitation among collegiate athletes.

Relevance of the Study

Theoretically, the present study contributes to the field of sport and counselling psychology by integrating two important psychological constructs mental toughness and athletic identity within the context of sports injury among collegiate student-athletes. The study draws upon Clough, Earle, and Sewell's (2002) and Brewer, Van Raalte, and Linder's (1993) conceptualisation of Athletic Identity, which explains the extent to which individuals identify with the athlete role as part of their self-concept. By examining these constructs among both injured and non-injured collegiate student-athletes, the study contributes to a better understanding of the psychological factors associated with injury experiences and extends the existing literature within the collegiate sports context.

Practically, the findings of the study hold significant relevance for sport psychologists, counselling psychologists, coaches, athletic trainers, physiotherapists, rehabilitation professionals, and educational institutions involved in collegiate sports. The findings can inform the development of psychological assessment, counselling interventions, mental skills training programmes, and injury rehabilitation strategies that address both mental toughness and athletic identity. The study also provides valuable insights for designing athlete support programmes that promote psychological well-being, facilitate successful rehabilitation, and enhance readiness for return to sport following injury. Furthermore, by generating evidence from Indian collegiate student-athletes, the study contributes to the growing body of Indian research in sport psychology and counselling psychology and provides a foundation for future investigations on the psychological aspects of sports injuries.

Chapter III

Method

The methodology chapter presents the research approach adopted for the present study. It outlines the aim, objectives, and hypotheses of the study and describes the research design employed to investigate the research problem. The chapter further provides details regarding the participants, sampling technique, variables of the study, operational definitions, inclusion and exclusion criteria, research instruments, and procedures adopted for data collection. In addition, it explains the statistical techniques used for data analysis to examine differences and relationships between mental toughness and athletic identity among injured and non-injured collegiate student-athletes**.**

Aim of the Study

The present study aims to compare mental toughness and athletic identity among injured and non-injured collegiate student-athletes and to examine the relationship between these psychological constructs within each group.

Objectives of the Study

1. To assess mental toughness among injured and non-injured collegiate student athletes.
2. To assess athletic identity among injured and non-injured collegiate student athletes.
3. To compare mental toughness between injured and non-injured collegiate student-athletes.
4. To compare athletic identity between injured and non-injured collegiate student athletes.

5. To examine the relationship between mental toughness and athletic identity among injured collegiate student-athletes.

6. To examine the relationship between mental toughness and athletic identity among non-injured collegiate student-athletes.

7. To explore the difference in mental toughness between individual-event and group-event athletes within the injured group.

8. To explore the difference in mental toughness between individual-event and group-event athletes within the non-injured group.

9. To explore the difference in athletic identity between individual-event and group-event athletes within the injured group.

10. To explore the difference in athletic identity between individual-event and group-event athletes within the non-injured group.

Variables of the Study

The study variables in the present study are mental toughness and athletic identity. The grouping variable is injury status, which classifies participants into two groups: injured collegiate student-athletes and non-injured collegiate student-athletes. Mental toughness and athletic identity are compared across these two groups. Additionally, the relationship between mental toughness and athletic identity is examined separately among injured and non-injured collegiate student-athletes. The study also compares mental toughness and athletic identity between individual-event athletes and group-event athletes within both the injured and non-injured groups. Injury status and event type are treated as grouping variables for comparison purposes and are

not experimentally manipulated. The study examines naturally occurring differences and relationships among the variables using a non-experimental, cross-sectional comparative-correlational research design**.**

Operational Definitions of Variables

Mental Toughness

Mental toughness refers to the psychological capacity of collegiate student-athletes to maintain confidence, commitment, control, and the ability to view challenges positively despite experiencing pressure, adversity, or setbacks.

Athletic Identity

Athletic identity refers to the degree to which collegiate student-athletes identify with the athlete role and incorporate it into their overall self-concept

Injured Collegiate Student-Athletes

Injured collegiate student-athletes refer to college-enrolled athletes aged 18–26 years who have sustained a sports-related physical injury within the past six (6) months, resulting in restriction from regular training or competition for a minimum of one week and requiring medical consultation or intervention.(Fuller et al., 2006).

Non-Injured Collegiate Student-Athletes

Non-injured collegiate student-athletes refer to college-enrolled athletes aged 18–26 years who have not sustained any sports-related physical injury within the past six (6) months and are currently participating in regular training and competition without any physical restriction or medical intervention.(Fuller et al., 2006).

Hypotheses

H1: There is a significant difference in mental toughness between injured and non injured collegiate student-athletes.

H2: There is a significant difference in athletic identity between injured and non-injured collegiate student-athletes.

H3: There is a significant relationship between mental toughness and athletic identity among injured collegiate student-athletes.

H4: There is a significant relationship between mental toughness and athletic identity among non-injured collegiate student-athletes.

H5: There is a significant difference in mental toughness between individual-event and group-event athletes within the injured group.

H6: There is a significant difference in mental toughness between individual-event and group-event athletes within the non-injured group.

H7: There is a significant difference in athletic identity between individual-event and group-event athletes within the injured group.

H8: There is a significant difference in athletic identity between individual-event and group-event athletes within the non-injured group.

Research Design

The present study adopts a quantitative, non-experimental, cross-sectional design ,employing a comparative–correlational approach to examine differences in mental toughness and athletic identity between injured and non-injured collegiate student-athletes, and the relationship between these variables within each group.

Participants

Population

The target population for the present study comprised collegiate student-athletes aged 18 to 26 years, enrolled in colleges and universities in India, who actively participated in competitive sports. The population included both male and female athletes representing individual-event and group-event sports from government, aided, and private higher educational institutions. Participants were required to have a minimum of three years of continuous sports training and at least one district-level medal in their respective sport, ensuring adequate competitive sporting experience**.**

Sample and Sampling Technique

The sample for the present study consisted of 141 collegiate student-athletes, comprising 65 injured athletes and 76 non-injured athletes. The participants were selected from various colleges and universities. representing different individual and team sports. Both male and female athletes who satisfied the eligibility criteria were included in the study.

Purposive sampling was employed to select the participants. Purposive sampling is a non-probability sampling technique in which participants are deliberately selected based on

predetermined characteristics relevant to the objectives of the study. The technique was considered appropriate because the study required athletes who fulfilled specific criteria regarding injury status, competitive experience, duration of sports participation, and achievement level. Accordingly, only collegiate student-athletes who met the operational definitions of either injured or non-injured athletes were included in the study.

Inclusion Criteria

a .Collegiate student-athletes aged 18 to 26 years.

b .Male and female athletes currently enrolled in colleges or universities.

c. Athletes with a minimum of three years of continuous sports training.

d. Athletes who had won at least one district-level medal in their respective sport.

e. Athletes representing either individual-event or group-event sports.

f. Injured athletes who had sustained a sports-related physical injury within the past six months, resulting in restriction from regular training or competition for a minimum of one week, and requiring medical consultation or intervention.

g. Non-injured athletes who had not sustained any sports-related physical injury within the past six months and were actively participating in regular training and competition without physical restriction.

h. Athletes who voluntarily agreed to participate and provided written informed consent.

Exclusion Criteria

a. Athletes below 18 years or above 26 years of age.

b. Athletes with less than three years of continuous sports training.

c. Athletes who had not achieved at least one district-level medal.

d. Athletes recovering from non-sports-related injuries or medical conditions unrelated to sports participation.

e. Athletes with chronic medical conditions or neurological disorders that could significantly influence psychological functioning.

f. Athletes who were unable to comprehend or complete the research instruments in the language of administration.

g. Athletes who did not provide informed consent or who submitted incomplete responses to the questionnaires.

Instruments

1. Demographic Information Sheet
2. Mental Toughness Questionnaire–18 (MTQ-18)
3. Athletic Identity Measurement Scale–Short Form (AIMS-7)

The present study employed standardized psychological instruments and a researcher-developed demographic data sheet to collect the required information from the participants. The instruments were selected based on their relevance to the study objectives and their established use in sport psychology research. A demographic information sheet was used to obtain participants' personal, sport-related, and injury-related details. Mental toughness was assessed using the Mental Toughness Questionnaire–18 (MTQ-18) developed by Clough, Earle, and Sewell (2002), while athletic identity was measured using the Athletic Identity Measurement

Scale–Short Form (AIMS-7) developed by Brewer and Cornelius (2001). Together, these instruments provided comprehensive information regarding the demographic characteristics, mental toughness, and athletic identity of injured and non-injured collegiate student-athletes.

Demographic Information Sheet

A Demographic Data Sheet was developed by the researcher to obtain relevant personal and sport-related information from the participants. The purpose of the demographic data sheet was to collect background information necessary for describing the sample and classifying participants according to the objectives of the study.

The demographic data sheet included information on the following variables:

(a) age; (b) gender; (c) educational institution; (d) type of sport (individual-event or group-event); (e) years of sports training; (f) highest level of sports participation; (g) highest sporting achievement; and (h) injury status (injured/non-injured).

For participants in the injured group, additional information was collected regarding the type of sports injury, the body part affected, the duration since the injury, the period of restriction from regular training or competition, and whether medical consultation or intervention was received. Injury status was determined solely through participants' self-report based on the operational definition adopted in the present study. An injured athlete was defined as a college-enrolled athlete aged 18–26 years who had sustained a sports-related physical injury within the past six months, resulting in restriction from regular training or competition for a minimum of one week and requiring medical consultation or intervention.

For participants in the non-injured group, information was obtained to confirm that they had not sustained any sports-related physical injury during the previous six months and were

actively participating in regular training and competition without any physical restriction or medical intervention. The demographic information was used solely for descriptive purposes and for classifying participants into the injured and non-injured groups for statistical analysis.

Mental Toughness Questionnaire–18 (MTQ-18)

Mental toughness was assessed using the Mental Toughness Questionnaire–18 (MTQ-18). The questionnaire is a brief version of the original Mental Toughness Questionnaire–48 (MTQ-48) developed by Clough, Earle, and Sewell (2002).The MTQ-18 was developed to provide a shorter and practical measure while retaining the theoretical foundation of the original instrument. It is widely used in sport, education, organizational, and health psychology to assess an individual's ability to cope effectively with pressure, stress, and adversity.

Number of Items: Response Format. The MTQ-18 consists of 18 items. Participants respond using a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree)

Administration. The MTQ-18 is a self-report questionnaire that can be administered individually or in groups. Participants are instructed to read each statement carefully and indicate the extent to which they agree or disagree. Administration generally requires 3–5 minutes to complete.

Scoring. Each item is scored from 1 to 5. The total score is obtained by summing responses to all 18 items, yielding a possible score range of 18 to 126. Higher scores indicate higher levels of mental toughness. The manual provides interpretive guidelines of 18–54 (low), 55–90 (moderate), and 91–126 (high) mental toughness; these are interpretive categories rather than clinical cut-off scores.

Reliability. The MTQ-18 manual reports that studies have demonstrated acceptable to good internal consistency across different populations. Because the manual does not report a single Cronbach's alpha coefficient for the MTQ-18, no specific reliability coefficient is presented here.

Validity.Evidence for the validity of the MTQ-18 has been demonstrated through convergent validity, with positive associations observed between mental toughness and resilience, coping, psychological well-being, performance, and psychological adaptation. The instrument is based on the well-established 4Cs theoretical model proposed by Clough et al. (2002), providing strong theoretical support for its construct validity.

Athletic Identity Measurement Scale–Short Form (AIMS-7)

Athletic identity was measured using the Athletic Identity Measurement Scale–Short Form (AIMS-7) developed by Brewer and Cornelius (2001). The AIMS-7 is a revised version of the original Athletic Identity Measurement Scale (AIMS) developed by Brewer, Van Raalte, and Linder (1993). The instrument measures the degree to which an individual identifies with the athlete role and incorporates sport into their self-concept. It is one of the most widely used measures of athletic identity in sport psychology research.

Number of Items,Subscales, and Response Format: The AIMS-7 consists of 7 items

Responses are recorded on a 7-point Likert scale, ranging from 1 (Strongly Disagree) to 7 (Strongly Agree).

Administration. The AIMS-7 is a self-report questionnaire that may be administered individually or in groups. Participants are instructed to read each statement carefully and indicate their level of agreement. The questionnaire requires approximately 3–5 minutes to complete.

Scoring. All items are positively worded; therefore, no reverse scoring is required. Scores are obtained by summing the responses to all seven items. The total score ranges from 7 to 49, with higher scores indicating a stronger athletic identity. Although the instrument contains three subscales, Brewer and Cornelius (2001) recommended using either the total score or the subscale scores, but not both simultaneously in a single analysis.

Reliability. The AIMS-7 has demonstrated good internal consistency, with Cronbach's alpha = .81 reported by Brewer and Cornelius (2001). Subsequent studies and meta-analytic evidence have also supported acceptable to excellent internal consistency across different athlete populations.

Validity. Evidence supports the construct validity of the AIMS-7 through convergent, divergent, known-groups, and predictive validity. The scale has demonstrated positive associations with sport participation, intrinsic motivation, and training involvement, while also predicting psychological adjustment following injury and sport retirement. The factor structure has been supported in multiple studies, and the scale has been translated and validated across diverse cultural settings.

Data Collection Procedure

Prior to the commencement of data collection, ethical approval for the study was obtained from the Department of Counselling Psychology, Loyola College of Social Sciences (Autonomous), Thiruvananthapuram. Following ethical approval,formal permission was sought from the concerned college authorities, coaches to approach collegiate student-athletes for participation in the study.

Participants who met the inclusion criteria were identified using purposive sampling. The researcher contacted the eligible collegiate student-athletes and explained the purpose and objectives of the study. Participants were informed that their participation was entirely voluntary and that they had the right to withdraw from the study at any stage without any consequences. They were also assured that the information provided would be treated with strict confidentiality and used solely for academic and research purposes.

Written informed consent was obtained electronically from each participant before the administration of the research instruments. Data were collected online using Google Forms, which included the Participant Information Sheet, Informed Consent Form, Demographic Data Sheet, the Mental Toughness Questionnaire–18 (MTQ-18), and the Athletic Identity Measurement Scale–Short Form (AIMS-7). The online format enabled participants to complete the questionnaires at their convenience while ensuring accessibility and ease of participation.

Participants were provided with standardized written instructions regarding the completion of the questionnaires. They were requested to read each statement carefully and respond honestly based on their personal experiences. The average time required to complete the questionnaires was approximately 10–15 minutes.

Data collection was carried out over a period of [mention the months, e.g., January to March 2026]. Upon submission of the completed Google Form, responses were reviewed for completeness, and incomplete or duplicate responses were excluded from the analysis. At the end of the survey, participants were thanked for their valuable participation and provided with a brief debriefing regarding the purpose of the study.

Data Analysis Techniques

The data collected from the participants were coded, entered, and analysed using Jamovi (Version 2.3.28). Prior to statistical analysis, the data were screened for completeness and accuracy. Descriptive and inferential statistical techniques were employed to address the objectives and test the hypotheses of the study.

Descriptive Statistics. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were computed to summarise the demographic characteristics of the participants and to describe the levels of mental toughness and athletic identity among injured and non-injured collegiate student-athletes.

Test of Normality. The Shapiro–Wilk test was employed to examine whether the scores on mental toughness and athletic identity were normally distributed. The results indicated that the assumptions of normality were satisfied; therefore, parametric statistical tests were used for subsequent analyses.

Group Comparison. Independent-samples t-tests were conducted to compare mental toughness and athletic identity between injured and non-injured collegiate student-athletes, addressing Objectives 1 and 2 and testing Hypotheses H1 and H2. Independent-samples t-tests were also used to compare mental toughness and athletic identity between individual-event and group-event athletes within the injured and non-injured groups, addressing Objectives 5–8 and testing Hypotheses H5–H8.

Correlation Analysis. Pearson's product-moment correlation was used to examine the relationship between mental toughness and athletic identity separately among injured collegiate

student-athletes and non-injured collegiate student-athletes, addressing Objectives 3 and 4 and testing Hypotheses H3 and H4.

For all statistical analyses, the level of significance was set at .05 ($p < .05$). The findings were interpreted in accordance with the objectives and hypotheses of the study.

Chapter -IV

Results and Discussion

This chapter presents the results of the statistical analyses conducted to address the objectives and hypotheses of the study entitled *Mental Toughness and Athletic Identity Among Injured and Non-Injured Collegiate Student-Athletes*. The collected data were analyzed using Jamovi (Version 2.3.28). Initially, descriptive statistics and tests of normality were computed to examine the distribution of the study variables. Subsequently, independent-samples t-tests were performed to compare injured and non-injured athletes, as well as athletes participating in individual and group events, on mental toughness and athletic identity. In addition, Pearson's product-moment correlation was used to examine the relationship between mental toughness and athletic identity within the injured and non-injured groups. The findings are presented systematically in tables and interpreted with reference to the objectives and hypotheses of the study.

Prior to hypothesis testing, the distributional properties of mental toughness and athletic identity were examined within the injured and non-injured groups using the Shapiro–Wilk test, supported by skewness and kurtosis values (see Table 1). All Shapiro–Wilk statistics were non-significant ($p > .05$), and all skewness and kurtosis values fell within the conventional ±1 limits, indicating that both variables were approximately normally distributed within each group. Parametric procedures were therefore deemed appropriate. Independent-samples *t*-tests were used for all group comparisons, with Levene's test examined in each case; where the assumption of equal variances was violated, Welch's *t* is reported. Pearson's product-moment correlation was used to examine the relationship between mental toughness and athletic identity within each group. Cohen's *d* and the correlation coefficient *r* are reported as measures of effect size.

Table 1

Variable / Group	*n*	*M*	*SD*	Skew	Kurt	*W*	*p*
Mental Toughness							
Injured	65	60.80	6.78	−0.32	0.25	0.981	.419
Non-injured	76	56.90	9.02	−0.31	−0.04	0.984	.438
Athletic Identity							
Injured	65	34.20	7.31	0.04	−0.73	0.973	.167
Non-injured	76	31.20	8.98	−0.09	−0.27	0.987	.614

Descriptive Statistics and Shapiro–Wilk Tests of Normality by Injury Status

As shown in Table 1, the descriptive statistics and results of the Shapiro–Wilk test for mental toughness and athletic identity among injured and non-injured collegiate student-athletes. The findings indicate that the scores for both variables were approximately normally distributed, as evidenced by non-significant Shapiro–Wilk values ($p > .05$). Furthermore, the skewness and kurtosis values were within the acceptable range (±1), indicating no substantial deviation from normality. Therefore, parametric statistical analyses, including the independent-samples *t*-test and Pearson's product-moment correlation, were considered appropriate for testing the hypotheses of the study.

Table 2

Mental Toughness Level	Injured 65) (*n* =	%	Non-injured (*n* =% 76)	
Low	0	0.0	3	3.9
Average	59	90.8	66	86.8
High	6	9.2	7	9.2
Total	65	100.0	76	100.0

Frequency and Percentage Distribution of Mental Toughness Levels by Injury Status (N=141)

Table 2 presents the distribution of injured and non-injured student-athletes across the low, average, and high mental toughness bands. Among the injured athletes, 59 (90.8%) demonstrated average levels of mental toughness, while 6 (9.2%) demonstrated high levels. None of the injured athletes were classified as having low mental toughness. Among the non-injured athletes, 66 (86.8%) demonstrated average levels of mental toughness, 7 (9.2%) demonstrated high levels, and 3 (3.9%) demonstrated low levels. Overall, the majority of both injured and non-injured collegiate student-athletes exhibited average levels of mental toughness, indicating that moderate mental toughness was the most common level among the participants.

Table 3

Frequency and Percentage Distribution of Athletic Identity Levels by Injury Status (N=141)

Athletic Identity Level	Injured(65)	%	Non-injured(76)	%
Low	1	1.5	9	11.8
Average	31	47.7	40	52.6
High	33	50.8	27	35.5
Total	65	100.0	76	100.0

Table 3 presents the distribution of injured and non-injured student-athletes across the low, average, and high athletic identity bands. Among the injured athletes, 33 (50.8%) demonstrated high athletic identity, 31 (47.7%) demonstrated average athletic identity, and 1 (1.5%) demonstrated low athletic identity. In contrast, among the non-injured athletes, 27 (35.5%) demonstrated high athletic identity, 40 (52.6%) demonstrated average athletic identity, and 9 (11.8%) demonstrated low athletic identity. Overall, the findings indicate that a greater proportion of injured collegiate student-athletes exhibited high athletic identity compared to non-injured athletes, whereas the majority of non-injured athletes demonstrated average athletic identity.

Table 4

Comparison of Mental Toughness Between Injured and Non-Injured Student-Athletes

Group	*M*	*SD*	*t*	*p*
Injured (n = 65)	60.80	6.78	2.85	.005
Non-injured (n = 76)	56.90	9.02		

Injured student-athletes reported significantly higher mental toughness (M = 60.80, SD = 6.78) than non-injured student-athletes (M = 56.90, SD = 9.02), t(137) = 2.85, p = .005, d = 0.48.

Injured student-athletes reported significantly higher mental toughness than non-injured student-athletes . Therefore Hypothesis 1 is accepted.

The analysis revealed that injured collegiate student-athletes scored significantly higher on mental toughness than non-injured athletes. This finding suggests that athletes who have experienced injury may develop greater resilience, perseverance, and emotional control while coping with rehabilitation and the challenges associated with returning to sport. The result is consistent with the work of Tawil et al. (2025), which highlighted the protective role of mental toughness during injury recovery, and Sajedi and Kırkbir (2020), who reported that mentally tough athletes experience lower levels of burnout and better psychological adjustment during rehabilitation.

Table 5

Comparison of Athletic Identity Between Injured and Non-Injured Student-Athletes

Group	*M*	*SD*	*t*	*p*
Injured (n = 65)	34.20	7.31	2.15	.033
Non-injured (n = 76)	31.20	8.98		

Injured student-athletes reported significantly higher athletic identity (M = 34.20, SD = 7.31) than non-injured student-athletes (M = 31.20, SD = 8.98), t(139) = 2.15, p = .033, d = 0.36.

Injured student-athletes reported significantly higher athletic identity than non-injured student-athletes. Therefore hypothesis 2 is accepted

Injured athletes demonstrated significantly higher athletic identity than non-injured athletes. This finding indicates that injured athletes may place greater importance on their athletic role and view sport as a central component of their self-concept. Similar conclusions were reported by Renton et al. (2021), who found that stronger athletic identity is associated with greater rehabilitation adherence and return-to-sport motivation. Loftin, Covassin, and Baez (2023) also emphasized that athletes with strong athletic identities often remain highly committed to recovery despite experiencing emotional challenges during injury.

Table 6

Correlation Between Mental Toughness and Athletic Identity in the Injured Group (n=65)

Variable	1	2
1. Mental toughness	—	−.03
2. Athletic identity	−.03	—

Mental toughness and athletic identity were not significantly associated among injured student-athletes, Therefore hypothesis 3 is not accepted.

No significant relationship was found between mental toughness and athletic identity among injured collegiate student-athletes. This suggests that, within the injured group, possessing a strong athletic identity does not necessarily correspond to higher or lower mental toughness. Although previous literature has often suggested a positive association between these variables, the present findings indicate that injured athletes may rely on multiple psychological and situational factors during rehabilitation. This result differs from the broader trends discussed by Renton et al.2021), thereby highlighting the complexity of psychological responses to injury.

Table 7

Correlation Between Mental Toughness and Athletic Identity in the Non-Injured Group (n = 76)

Variable	1	2
1. Mental toughness		−.26*
2. Athletic identity	−.26*	

A significant, weak, negative correlation emerged between mental toughness and athletic identity among non-injured student-athletes, $r(74) = -.26$, $p = .023$.

A significant, minimal, negative correlation emerged between mental toughness and athletic identity among non-injured student-athletes. Therefore Hypothesis 4 is accepted.

A significant weak negative relationship was observed between mental toughness and athletic identity among non-injured athletes. This indicates that athletes with slightly higher mental toughness tended to report somewhat lower athletic identity. Although the relationship was small, the finding suggests that mental toughness and athletic identity may represent distinct psychological characteristics among actively competing athletes. Previous studies have generally reported positive associations between these constructs; therefore, the present result provides an interesting contribution and suggests that the relationship may vary according to injury status and contextual factors.

Table 8

Comparison of Mental Toughness Between Individual- and Group-Event Athletes (Injured Group)

Event Type	*M*	*SD*	*t*	*p*	*d*
Individual (n = 37)	61.46	5.94	0.96	.339	0.24
Group (n = 28)	59.82	7.77			

Mental toughness did not differ significantly between individual-event (M = 61.46, SD = 5.94) and group-event (M = 59.82, SD = 7.77) injured athletes, $t(63) = 0.96$, $p = .339$, $d = 0.24$**.**

Mental toughness did not differ significantly between individual-event and group-event injured athletes. Therefore Hypothesis 5 is not accepted.

No significant difference was found in mental toughness between individual-event and group-event athletes within the injured group. This suggests that the experience of injury may influence athletes in a similar manner regardless of whether they participate in individual or team sports. The finding supports the view that mental toughness is a relatively stable psychological characteristic that may not differ substantially across event types in collegiate athletes.

Table 9

Comparison of Mental Toughness Between Individual- and Group-Event Athletes (Non-Injured Group)

Event Type	*M*	*SD*	*t*	*p*	*d*
Individual (n = 44)	56.95	9.30	0.01	.994	0.00
Group (n = 32)	56.94	8.77			

Note. Levene's test non-significant ($F = 0.04$, $p = .840$); Student's $t(74)$ reported. Cohen's $d = 0.00$.

Mental toughness was virtually identical between individual-event (M = 56.95, SD = 9.30) and group-event (M = 56.94, SD = 8.77) non-injured athletes, t(74) = 0.01, p = .994, d = 0.00.

Mental toughness was virtually identical between individual-event and group-event non-injured athletes, Therefore hypothesis 6 is not accepted

Mental toughness scores were virtually identical for individual-event and group-event non-injured athletes. The absence of a significant difference indicates that participation in individual or team sports was not associated with differences in mental toughness within this sample. This finding is consistent with research suggesting that mental toughness develops through a combination of personal experiences, training, and competitive exposure rather than being determined solely by the type of sport.

Table 10

Comparison of Athletic Identity Between Individual- and Group-Event Athletes (Injured Group)

Event Type	*M*	*SD*	*t*	*p*	*d*
Individual (n = 37)	33.89	6.82	−0.33	.743	−0.08
Group (n = 28)	34.50	8.03			

Athletic identity did not differ significantly between individual-event (M = 33.89, SD = 6.82) and group-event (M = 34.50, SD = 8.03) injured athletes, t(63) = −0.33, p = .743, d = −0.08.

Athletic identity did not differ significantly between individual-event and group-event injured athletes. Therefore hypothesis 7 is not accepted.

Athletic identity did not differ significantly between injured athletes participating in individual events and those participating in group events. Both groups appeared to maintain a similar level of identification with the athlete role despite their injury status. This suggests that the psychological importance of being an athlete may remain strong regardless of the specific nature of sport participation.

Table 11

Comparison of Athletic Identity Between Individual- and Group-Event Athletes (Non-injured group)

Event Type	*M*	*SD*	*t*	*p*	*d*
Individual (n = 44)	*29.86*	*9.16*	*−1.49*	*.142*	*−0.35*
Group (n = 32)	*32.94*	*8.54*			

Athletic identity did not differ significantly between individual-event (M = 29.86, SD = 9.16) and group-event (M = 32.94, SD = 8.54) non-injured athletes, t(74)

= −1.49, p = .142, d = −0.35.

Athletic identity did not differ significantly between individual-event and group-event non- injured athletes. Therefore hypothesis 8 is not accepted.

No significant difference was found in athletic identity between individual-event and group-event non-injured athletes, although group-event athletes showed slightly higher mean scores. This finding indicates that athletic identity may be shaped more by overall involvement, commitment, and experience in sport than by whether the athlete participates in an individual or team event. Similar perspectives have been discussed by Brewer et al. (1993) and McGinley et al. (2022), who emphasized the role of sustained sport participation and personal investment in the development of athletic identity.

The findings demonstrate that injury status is associated with important psychological differences among collegiate student-athletes. Injured athletes appeared to possess greater mental toughness and a stronger athletic identity than their non-injured counterparts, while event type did not significantly influence either variable. The results highlight the importance of considering psychological factors alongside physical rehabilitation and support the need for counselling, mental skills training, and psychological interventions to promote the well-being and successful return to sport of collegiate student-athletes

Chapter V

Summary and Conclusion

This chapter presents a summary of the entire study entitled *Mental Toughness and Athletic Identity Among Injured and Non-Injured Collegiate Student-Athletes*. It briefly reviews the background, objectives, methodology, major findings, and interpretation of the results. The chapter also presents the conclusions drawn from the findings, discusses the implications of the study, acknowledges its limitations, and offers suggestions for future research. The purpose of this chapter is to integrate the findings of the investigation and highlight their significance for sport psychology, counselling, rehabilitation, and athlete development among collegiate student-athletes.

Summary

The present study entitled "Mental Toughness and Athletic Identity Among Injured and Non-Injured Collegiate Student-Athletes" was undertaken to examine two important psychological characteristics that influence athletes' performance, rehabilitation, and overall psychological well-being. Collegiate student-athletes are required to balance academic responsibilities with the demands of competitive sports, making psychological resources such as resilience, confidence, commitment, and a strong sense of identity particularly important. Sports injuries can disrupt training and competition and may affect athletes' emotional adjustment, motivation, and self-concept. Therefore, the study aimed to investigate whether injured and non-injured collegiate athletes differ in mental toughness and athletic identity and to examine the relationship between these variables.

Aim of the Study

The primary aim of the study was to assess and compare mental toughness and athletic identity among injured and non-injured collegiate student-athletes and to examine the relationship between these variables within each group.

Objectives of the Study

The objectives of the study were:

1. To assess mental toughness among injured collegiate student-athletes.
2. To assess mental toughness among non-injured collegiate student-athletes.
3. To assess athletic identity among injured collegiate student-athletes.
4. To assess athletic identity among non-injured collegiate student-athletes.
5. To examine the relationship between mental toughness and athletic identity among injured collegiate student-athletes.
6. To examine the relationship between mental toughness and athletic identity among non-injured collegiate student-athletes.
7. To compare mental toughness between individual-event and group-event athletes within the injured group.
8. To compare mental toughness between individual-event and group-event athletes within the non-injured group.
9. To compare athletic identity between individual-event and group-event athletes within the injured group.

10. To compare athletic identity between individual-event and group-event athletes within the non-injured group.

Research Design and Participants

The study employed a quantitative, non-experimental, cross-sectional comparative-correlational research design. Participants were selected using purposive sampling. The sample consisted of 141 collegiate student-athletes aged 18 to 26 years, including 65 injured athletes and 76 non-injured athletes. Injured athletes were those who had sustained a sports-related injury within the previous six months that restricted participation in training or competition for at least one week and required medical consultation or intervention. Non-injured athletes had not experienced any sports-related injury during the previous six months and were actively participating in regular training and competition.

Instruments Used

1. Demographic Information Sheet – A researcher-developed questionnaire used to collect personal, sports-related, and injury-related information, including age, gender, educational institution, years of sports training, type of sport, level of participation, sporting achievements, and injury status.

2. Mental Toughness Questionnaire–18 (MTQ-18) – Developed from the original Mental Toughness Questionnaire–48 by Clough, Earle, and Sewell (2002) and based on the 4Cs Model of Mental Toughness (Control, Commitment, Challenge, and Confidence). The MTQ-18 measures an individual's ability to cope effectively with pressure, stress, and adversity.

3. Athletic Identity Measurement Scale–Short Form (AIMS-7) – Developed by Brewer and Cornelius (2001) as a revised version of the original Athletic Identity Measurement Scale created by Brewer, Van Raalte, and Linder (1993). The AIMS-7 assesses the degree to which an individual identifies with the athlete role and incorporates sport into their self-concept.

Data Collection and Analysis

Data were collected through online Google Forms after obtaining informed consent from all participants. Statistical analyses were performed using Jamovi Version 2.3.28. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed to describe the sample and study variables. The Shapiro–Wilk test was used to assess normality, and the results indicated that the data were approximately normally distributed. Therefore, independent-samples t-tests were conducted to compare groups, and Pearson's product-moment correlation was used to examine relationships between variables.

Major Findings

1. The majority of both injured and non-injured collegiate student-athletes demonstrated average levels of mental toughness.

2. A greater proportion of injured athletes demonstrated high athletic identity, whereas most non-injured athletes demonstrated average athletic identity.

3. Injured collegiate student-athletes reported significantly higher mental toughness than non-injured collegiate student-athletes.

4. Injured collegiate student-athletes also reported significantly higher athletic identity than non-injured collegiate student-athletes.
5. No significant relationship was found between mental toughness and athletic identity among injured athletes.
6. Among non-injured athletes, a significant weak negative relationship was observed between mental toughness and athletic identity, indicating that athletes with higher mental toughness tended to report slightly lower athletic identity.
7. No significant differences were found in mental toughness between individual-event and group-event athletes within either the injured or non-injured groups.
8. No significant differences were found in athletic identity between individual-event and group-event athletes within either the injured or non-injured groups.

Overall, the study demonstrated that injury status is associated with important psychological differences among collegiate student-athletes. Injured athletes exhibited greater mental toughness and a stronger athletic identity than non-injured athletes, while event type did not significantly influence either variable. The findings contribute to the growing body of sport psychology literature by highlighting the importance of psychological factors in injury rehabilitation, athlete development, and return-to-sport outcomes. The study underscores the need for psychological assessment, counselling, and mental skills training as integral components of sports rehabilitation and collegiate athletic programmes.

Conclusion

The present study highlights the importance of mental toughness and athletic identity among collegiate student-athletes with different injury statuses. The findings revealed that injured collegiate student-athletes demonstrated significantly higher levels of both mental toughness and athletic identity than non-injured collegiate student-athletes. No significant relationship was found between mental toughness and athletic identity among injured athletes, whereas a significant weak negative relationship was observed among non-injured athletes. Furthermore, no significant differences were found in mental toughness or athletic identity between athletes participating in individual and group events within either injury group. Overall, the study emphasises the importance of incorporating psychological assessment and interventions into sports rehabilitation and athlete development programmes to promote resilience, recovery, and overall psychological well-being among collegiate student-athletes.

Implications of the Study

Theoretical Implications

The present study has several important theoretical implications for the fields of sport psychology and counselling psychology. First, it extends the existing literature on mental toughness and athletic identity by examining both constructs simultaneously among injured and non-injured collegiate student-athletes. While previous research has often investigated these variables independently, the present study provides a more integrated understanding of how they function within the context of collegiate sports and injury experiences.

Second, the findings provide empirical support for Clough et al.'s (2002) 4Cs Model of Mental Toughness, which conceptualizes mental toughness in terms of Control, Commitment,

Challenge, and Confidence. The observation that injured athletes reported higher levels of mental toughness suggests that these dimensions may play an important role in helping athletes cope with adversity, rehabilitation demands, and the process of returning to sport.

Third, the study contributes to Brewer et al.'s (1993) Athletic Identity framework by demonstrating that athletic identity varies according to injury status. Injured athletes reported stronger athletic identities than non-injured athletes, indicating that injury experiences may intensify an athlete's identification with the athlete role and highlight the centrality of sport within their self-concept.

Finally, the study enriches the relatively limited body of Indian sport psychology literature concerning psychological responses to sports injuries. By focusing on collegiate student-athletes in the Indian context, the research provides culturally relevant evidence and contributes to a better understanding of the psychological characteristics associated with injury, rehabilitation, and athletic participation.

Practical Implications

The findings of the present study also have significant practical implications for professionals working with athletes. Sport psychologists can use these findings to develop and implement mental toughness enhancement programmes that focus on resilience, confidence, emotional control, and coping skills during injury rehabilitation and competitive participation.

Similarly, counselling psychologists can provide targeted psychological interventions to address issues such as reduced confidence, emotional distress, fear of re-injury, motivational difficulties, and challenges related to athletic identity. Such interventions may facilitate healthier psychological adjustment and improve athletes' overall well-being during rehabilitation.

The study further suggests that coaches should recognize the psychological impact of sports injuries and provide appropriate emotional support, encouragement, and communication throughout the recovery process. Supportive coaching relationships may help athletes maintain motivation and confidence while they are unable to participate fully in training and competition.

In addition, athletic trainers, physiotherapists, and rehabilitation professionals can collaborate with mental health professionals to create holistic rehabilitation programmes that address both physical recovery and psychological adjustment. Integrating psychological support into rehabilitation may improve adherence to treatment and enhance return-to-sport outcomes.

At the institutional level, universities and sports organizations can establish psychological screening, counselling services, and mental skills training programmes for collegiate athletes, particularly those recovering from injury. Incorporating mental skills training into routine athlete development programmes may strengthen resilience, promote psychological well-being, and support athletes in managing the various academic, athletic, and personal challenges they encounter.

Limitations of the Study

1. The study employed a cross-sectional research design, limiting causal interpretation.

2. The study relied exclusively on self-report questionnaires, which may be influenced by response bias and social desirability.

3. Participants were selected using purposive sampling, limiting the generalisability of findings.

4. The sample included only collegiate student-athletes aged 18–26 years, restricting applicability to younger or professional athletes.

5. Injury severity, injury type, rehabilitation stage, and duration of recovery were not analysed separately.

6. The study focused only on mental toughness and athletic identity; other psychological variables such as resilience, coping strategies, self-efficacy, anxiety, depression, and motivation were not examined.

7. The study was conducted within a limited geographical region, which may reduce external validity.

Suggestions for Further Research

1. Future studies may employ longitudinal designs to examine changes in mental toughness and athletic identity throughout injury rehabilitation and return-to-sport.

2. Similar studies may be conducted among elite, professional, national, and international athletes.

3. Future research may investigate differences based on injury severity, injury type, duration of rehabilitation, and return-to-play status.

4. Additional psychological variables such as resilience, coping strategies, self-efficacy, psychological distress, burnout, motivation, optimism, and perceived social support may be examined alongside mental toughness and athletic identity.

5. Qualitative or mixed-methods research may provide a deeper understanding of athletes' lived experiences during injury and recovery.

6. Intervention studies may evaluate the effectiveness of mental skills training, counselling, cognitive-behavioural interventions, mindfulness-based programmes, and resilience training in improving psychological adjustment among injured athletes.

7. Future research may include larger and more diverse samples across different states, universities, sports disciplines, and competitive levels to improve generalisability.

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Appendices

Appendix A- Informed Consent Form

Title of the Study

Mental Toughness and Athletic Identity Among Injured and Non-Injured Collegiate Student-Athletes

Researcher's Details

Name of the Researcher: Thomas Biju

Programme: MSc Counselling Psychology

Institution: Loyola College Of Social Sciences Trivandrum

About the Study

This study is conducted as part of the academic requirements for the M.Sc. Counselling Psychology programme at Loyola College of Social Sciences (Autonomous), Thiruvananthapuram. It explores mental toughness and athletic identity among injured and non-injured collegiate student-athletes. The primary aim of this study is to examine how mental toughness and athletic identity differ between collegiate student-athletes who have experienced sports-related injuries and those who have not. Your participation will contribute to a deeper understanding of the psychological and identity-related aspects of collegiate student-athletes and may help improve the quality of psychological support offered to this population.

Your Participation

You are invited to complete the questionnaire booklet enclosed with this form. Kindly read each item carefully and respond honestly. This study involves completing a demographic information sheet, a mental toughness questionnaire, and

an athletic identity scale. There are no right or wrong answers your genuine personal experience matters most.

Please note the following:

- Voluntary Participation — Your participation is entirely voluntary. You are under no obligation to take part in this study.
- Right to Withdraw — You may withdraw at any point during the study without any consequence or explanation required.
- Confidentiality — All responses will be used exclusively for academic research purposes and will not be disclosed to any third party.
- Anonymity — Your identity will remain completely anonymous throughout the study. No identifying information will be linked to your responses.
- No Risk — Participation involves no physical, psychological, or social risk. If any item causes discomfort, you may skip it.

Instructions to Participants

Please complete all three sections of the questionnaire booklet in the following order:

- Section I: Demographic Information Sheet
- Section II: Mental Toughness Questionnaire (MTQ-18)
- Section III: Athletic Identity Measurement Scale (AIMS)

Respond to all items as honestly as possible. Please do not leave any item unanswered. Once completed, ensure all pages are returned to the researcher.

Declaration of Consent

I have read and understood the information provided above regarding this research study. I understand that my participation is entirely voluntary and that I may withdraw at any time without any consequences. I confirm that I am a currently an athlete and meet the eligibility criteria for this study. By signing below, I voluntarily agree to participate in this research.

Participant Code /Name/ Initials: Date:

Appendix B - Socio demographic details

Mental Toughness and Athletic Identity Among Injured and Non-Injured Collegiate Student-Athletes

INSTRUCTIONS TO PARTICIPANTS Please read each item carefully and respond accurately. Your responses are strictly confidential and will be used solely for academic research purposes. There are no right or wrong answers. Participation is voluntary and you may withdraw at any time without penalty. How to complete this sheet: (a) For open-ended items, write your response on the line provided. (b) For multiple-choice items, place a tick ( ) in the box ( ) that best applies to you. (c) For scale items, tick the number that best reflects your situation.	
SECTION A — PERSONAL AND DEMOGRAPHIC INFORMATION	
1. Name / Initials	(Optional / Initials only):(Do not write your name) _____
2. Age	_____years
3. Gender	□Male □Female □Prefer not to say
4. Educational Institution	Name of College / University:
5. Educational Programme	□Undergraduate (UG) □Postgraduate – Masters (PG) □Postgraduate – PhD
5. Year of Study / Semester	□1st Year □2nd Year □3rd Year □4th Year or above
6. Native place / District	

SECTION B — SPORTPARTICIPATION DETAILS	
7. Name of Sport	_____
8. Type of Sport	□Individual Sport □Team Sport
9. Highest Level of Competition	□Intra-college □Inter-college / University □District / State □National □International
10. Years of Formal Sports Training	□Less than 1 year □1–2 years □3–4 years □5–6 years □7 or more years
11. Currently Training?	□Yes, currently in active training □No, not currently training
12. Highest Achievement in Sport	(e.g., gold medal, district champion): _____

SECTION C — INJURYSTATUS — Please readboth definitionscarefully before responding	
INJURED ATHLETE: A college-enrolled athlete (aged 18–26 years) who has sustained a sports-related physical injury within the past six (6) months that resulted in restriction from regular training or competition for a minimum of one (1) week and required medical consultation or intervention. □Yes □No	
NON-INJURED ATHLETE: A college-enrolled athlete (aged 18–26 years) who has NOT sustained any sports-related physical injury within the past six (6) months and is currently participating in regular training or competition without any physical restriction or medical intervention. □Yes □No	
14.Type of Injury (Injured Athlete only)	☐Muscle / Tendon (e.g., strain, tear ☐Bone / Joint (e.g., fracture, dislocation) ☐Ligament (e.g., sprain, ACL) ☐Other: _____
15,Injury Duration (Injured Athlete only)	☐1–4 weeks ☐1–3 months ☐3–6 months ☐More than 6 months
16.Medical Treatment Received (Injured Athlete only)	☐Physiotherapy ☐Surgical intervention ☐Medication / conservative management ☐No formal treatment received
SECTIOND — PSYCHOLOGICALANDCONTEXTUALFACTORS	
17.Prior Psychological Support	Have you previously received any psychological support or mental health counselling as an athlete? □Yes □No □Prefer not to say

18.Perceived Social Support	I feel I receive adequate social support from coaches, teammates, and family in my sport: □1 (Strongly Disagree) □2 (Disagree) □3 (Neutral) □4 (Agree) □5 (StronglyAgree)
19.Sport Specialisation	Do you compete in a single sport exclusively? □Yes, only one sport □No, I participate in multiple sports
20.Sports Scholarship	Are you currently on a sports scholarship or sports-related grant? □Yes □No □Prefer not to say

DECLARATION

□I confirm that I have read and understood the Participant Information Sheet for this study. I voluntarily agree to participate and understand that my responses will remain strictly confidential and be used solely for academic research purposes.

Signature/ Name : _____Date: _____/ _____/ _____

Appendix C - Mental Toughness Questionnaire (MTQ-18)

Instructions:

Please read each of the following statements and rate the extent to which it describes your thoughts,feelings, and behaviors during sports participation.Think about your experiences in training, competition, and challenging situations. Respond honestly based on how you generally feel.

1	2	3	4	5
1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree

No.	**Statement**	**1**	**2**	**3**	**4**	**5**
	Please circle the items thinking about howyou are generally during sports participation, training, and competition.	Strongly disagree				Strongly agree
1.	When faced with several simultaneous projects I enjoy moving onto another one.	1	2	3	4	5
2.	I view new, complex tasks with some worry.	1	2	3	4	5
3.	I generally find it hard to remain enthusiastic for the tasks I have to do.	1	2	3	4	5
4.	I generally cope well with any problems that arise.	1	2	3	4	5
5.	I generally feel that I am a worthwhile person.	1	2	3	4	5
6.	I generally feel confident in dealing with other people	1	2	3	4	5

7.	When I finish a task I usually feel relieved.	1	2	3	4	5
8.	I try to control my emotions when I am feeling stressed	1	2	3	4	5
9.	I generally do not have confidence in my ability.	1	2	3	4	5
10.	I often push myself to the limits to achieve my goals.	1	2	3	4	5
11.	I often worry about things that might go wrong.	1	2	3	4	5
12.	I often find it difficult to make decisions when I need to.	1	2	3	4	5
13.	I generally feel confident in my ability to deal with problems.	1	2	3	4	5

Appendix D - Athletic Identity Measurement Scale (AIMS)

Instructions:

Please read each of the following statements and rate the extent to which it describes your thoughts,feelings, and behaviors during sports participation.Think about your experiences in training, competition, and challenging situations. Respond honestly based on how you generally feel.

Please choose the number to the right of each statement using the scale below:

1	2	3	4	5	6	7
Strongly disagree						Strongly agree

		1	**2**	**3**	**4**	**5**	**6**	**7**
	Please circle the items thinking about how you are generally during sports participation,training,and	Strongly disagree						Strongly agree
	competition.							
1	I consider myself an athlete.	1	2	3	4	5	6	7
2	I have many goals related to sport.	1	2	3	4	5	6	7
3	Most of my friends are athletes.	1	2	3	4	5	6	7
4	Sport is the most important part of my life.	1	2	3	4	5	6	7
5	I spend more time thinking about sport than anything else.	1	2	3	4	5	6	7

6	I feel bad about myself when I do poorly in sport.	1	2	3	4	5	6	7
7	I would be very depressed if I were injured and could not compete in sport.	1	2	3	4	5	6	7