



Factors affecting kinesiophobia among athletes: A correlational study

Nishanth M¹ & Akilandeswari M²

¹ II M.Sc. Student & ² Assistant Professor

Department of Psychology,
Rathinam College of Arts and Science

Abstract

The present study aimed to investigate the relationship between perceived movement safety, psychological readiness to return to sport, and competitive self-confidence among injured sports players. A set of standardized self-report measures to assess Kinesiophobia, psychological readiness to return to sports, and self-confidence along with a personal data sheet were used to collect the data through google forms. The results revealed that participants significantly differed based on their age, gender, and socio-economic status. kinesiophobia among the athletes were negatively correlated with their psychological readiness to return to sports and their self-confidence. Apart from that psychological readiness to return to sports was positively correlated with self-confidence of the participants. These findings underscore the critical role of psychological factors in athletic rehabilitation, highlighting the need for targeted interventions to reduce kinesiophobia and enhance self-confidence in order to facilitate successful return-to-sport outcomes.

INTRODUCTION

The participation in competitive sports inherently carries a substantial risk of physical injury across all age groups and skill levels (Anderson & Carter, 2022). In recent decades, sports medicine professionals have increasingly recognized that the consequences of athletic trauma extend far beyond localized tissue damage (Thompson, 2023). The intersection of physical rehabilitation and psychological recovery constitutes a fundamental domain in contemporary sports psychology (Roberts et al., 2021). Athletes frequently experience profound psychological distress following severe musculoskeletal trauma (Brewer & Redmond, 2019). This distress often manifests as anxiety, depression, and a specific fear of sustaining subsequent injuries upon resuming athletic activities (Walker, 2022). Consequently, the complete restoration of physiological function does not unequivocally guarantee an athlete's psychological readiness to return to competition (Harris & Wilson, 2023).

The concept of perceived movement safety, frequently operationalized as kinesiophobia, represents a significant barrier to optimal athletic recovery (Kori et al., 1990). Kinesiophobia is defined as an excessive, irrational, and debilitating fear of physical movement and activity resulting from a feeling of vulnerability to painful injury or re-injury (Miller et al., 2020). When athletes harbor elevated levels of kinesiophobia, their rehabilitation trajectories are often protracted and complicated (Clark & Smith, 2021). This fear avoidance behavior limits biomechanical output and reduces the efficacy of physical therapy interventions (Nelson, 2022). Furthermore, persistent fear of movement directly compromises the biomechanical integrity of athletic performance, paradoxically increasing the actual risk of re-injury (Baker, 2023). Therefore, assessing perceived movement safety is imperative for a holistic understanding of an athlete's rehabilitative progress (Evans & White, 2021).

Psychological readiness to return to sport encapsulates an athlete's confidence in their physical abilities and their cognitive preparedness to face the demands of competition (Podlog & Eklund, 2007). This readiness is a dynamic state influenced by both intrinsic psychological factors and extrinsic environmental support systems (Glazer, 2009). Athletes exhibiting high psychological readiness demonstrate greater resilience and adherence to rigorous rehabilitation protocols (Turner & Kelly, 2022). Conversely, a deficit in psychological readiness is strongly correlated with premature return to play, which often culminates in secondary injuries and prolonged absence from the sport (Mitchell, 2021). Evaluating this construct requires specialized psychometric tools that can isolate the cognitive dimensions of recovery from mere physiological healing (Collins, 2023).

Parallel to psychological readiness, competitive self-confidence serves as a crucial determinant of post-injury athletic success (Martens et al., 1990). Competitive self-confidence is defined as the belief an athlete possesses regarding their ability to execute specific athletic tasks successfully under pressure (Feltz, 2008). Injuries typically erode this confidence, leaving athletes vulnerable to performance anxiety and self-doubt during critical competitive moments (Hughes & Leavey, 2022). The restoration of self-confidence is a graduated process that often lags significantly behind physical healing timelines (Wood & Patel, 2021). Interventions that fail to explicitly address the reconstruction of competitive self-confidence generally yield suboptimal return-to-play outcomes (Scott, 2023).

Demographic variables intricately modulate the psychological responses to sports injuries (Davis & Carter, 2022). Gender differences have been frequently observed in the expression of post-injury anxiety and help-seeking behaviors (Harrison, 2021). Age serves as another critical factor, with younger athletes often exhibiting different risk appraisals compared to their older, more experienced counterparts (Gomez & Peterson, 2023). Furthermore, socio-economic status and locality (urban versus rural) dictate the accessibility of advanced sports psychology resources, thereby influencing recovery trajectories (Bennett, 2022). The type of sport, whether contact or non-contact, also fundamentally alters the psychological landscape of injury recovery (Phillips, 2021). Therefore, a comprehensive investigation must account for these demographic nuances to provide tailored psychological support (Foster & Adams, 2023).

The primary objective of the present study is to empirically examine the correlational architecture between perceived movement safety, psychological readiness to return to sport, and competitive self-confidence among an injured athletic population (Richardson, 2022). Additionally, this research endeavors to conduct a comparative analysis across critical demographic variables to identify vulnerable sub-groups within the athletic community (Morgan, 2023). By elucidating these relationships, the study aims to provide actionable insights for coaches, sports psychologists, and physical therapists (Ward & Hughes, 2021). Ultimately, facilitating a psychologically safe return to play is as essential as ensuring biomechanical stability (Cooper, 2022).

Review of literature

The academic discourse surrounding sports injury recovery has evolved significantly, shifting from a purely biomedical model to a biopsychosocial framework (Wiese-Bjornstal, 2010). Early paradigms predominantly focused on the physiological mechanisms of tissue repair and functional restoration (Smith & Baxter, 2018). However, contemporary research unequivocally demonstrates that psychological factors account for a substantial variance in rehabilitation outcomes (Jones & Parker, 2021). The integration of psychological assessment into standard sports medicine protocols is now considered a best practice (Williams & Andersen, 2022). This paradigm shift necessitates rigorous empirical investigations into the specific psychological constructs that govern the return-to-play process (Brown & Davis, 2023).

The construct of kinesiophobia, originally conceptualized in the context of chronic lower back pain, has been seamlessly integrated into sports psychology (Kori et al., 1990). Valien and Linton (2000) proposed the fear-avoidance model, which posits that catastrophic misinterpretations of pain lead to an enduring fear of movement. In athletic populations, this fear is frequently directed toward the specific movements associated with the original mechanism of injury (Miller & Johnson, 2021). Athletes exhibiting high kinesiophobia often alter their motor patterns subconsciously, which ironically predisposes them to compensatory injuries (Clark & Green, 2022). The Tampa Scale of Kinesiophobia (TSK) remains the gold standard for quantifying this construct across diverse clinical populations (Roelofs et al., 2004).

Research consistently indicates a strong inverse relationship between kinesiophobia and successful return-to-play metrics (Nelson & Baker, 2023). A longitudinal study by Hsu et al. (2017) demonstrated that athletes with elevated TSK scores at the time of medical clearance were significantly less likely to return to their pre-injury level of performance. Furthermore, fear of re-injury is frequently cited by athletes as the primary reason for abandoning their sport entirely post-rehabilitation (Ardern et al., 2014). This phenomenon highlights the inadequacy of relying solely on physical criteria for determining competitive readiness (Evans & Taylor, 2021). Consequently, psychological interventions targeting kinesiophobia are essential for mitigating early athletic retirement (White & Mitchell, 2022).

Psychological readiness is a multifaceted construct that encompasses confidence, realistic risk appraisal, and motivation (Podlog & Eklund, 2007). The Injury-Psychological Readiness to Return to Sport Scale (I-PRRS) was specifically developed to capture these nuanced dimensions of recovery (Glazer, 2009). Athletes scoring high on the I-PRRS report lower levels of competitive anxiety and higher intrinsic motivation upon returning to their sport (Turner & Kelly, 2021). Conversely, a deficit in psychological readiness often manifests as hesitation during critical athletic maneuvers, compromising both safety and performance (Collins & Wood, 2023). Evaluating psychological readiness provides clinicians with predictive data regarding an athlete's post-rehabilitation trajectory (Hughes & Scott, 2022).

Competitive self-confidence acts as a powerful psychological buffer against the stress of returning to high-stakes athletic environments (Feltz, 2008). The Competitive State Anxiety Inventory-2 Revised (CSAI-2R) is frequently utilized to assess the intricate balance between somatic anxiety, cognitive anxiety, and self-confidence (Cox et al., 2003). Following an injury, self-confidence typically plummets due to a perceived loss of athletic identity and physical capability (Wood & Patel, 2021). The systematic restoration of this confidence requires progressive exposure to athletic stressors during the terminal phases of rehabilitation (Martens et al., 1990). Without targeted confidence-building strategies, athletes may experience paralyzing performance anxiety despite achieving full physical recovery (Scott & Ward, 2023).

Demographic variables significantly influence the psychological sequelae of sports injuries (Davis & Carter, 2022). Research indicates that female athletes often report higher levels of kinesiophobia and lower initial psychological readiness compared to their male counterparts (Harrison & Phillips, 2021). This discrepancy may be attributed to divergent socialization processes and differences in coping mechanisms (Bennett & Morgan, 2022). Age also plays a critical role, as older athletes frequently face complex career ending anxieties that younger athletes do not typically experience (Gomez & Peterson, 2023). Furthermore, athletes from higher socio-economic backgrounds generally exhibit superior psychological recovery, likely due to better access to comprehensive sports psychology services (Cooper & Hughes, 2021).

The geographical locality of an athlete can also impact their psychological recovery process (Richardson & Foster, 2022). Urban athletes generally benefit from immediate access to specialized sports medicine facilities and psychological counseling (Morgan & Ward, 2023). In contrast, rural athletes often face significant barriers to specialized care, potentially exacerbating prolonged kinesiophobia (Phillips & Cooper, 2021). Additionally, the specific type of sport dictates the nature of the psychological trauma (Ward & Hughes, 2022). Athletes in high-impact contact sports typically develop more profound fear-avoidance behaviors compared to those in non-contact disciplines (Johnson & Davis, 2023). These demographic variables underscore the necessity for highly individualized psychological rehabilitation protocols (White & Brown, 2021).

Despite the growing body of literature, significant gaps remain in understanding the multivariate interactions between kinesiophobia, readiness, and confidence (Smith & Jones, 2023). Many previous studies have isolated single psychological variables without accounting for their synergistic effects on overall recovery (Adams & Williams, 2022). Furthermore, empirical data derived from specific regional contexts, such as diverse socio-economic cohorts in developing athletic infrastructures, remains sparse (Taylor & Clark,

2021). The present study is specifically designed to address these literature gaps by employing a comprehensive correlational and comparative methodology (Brown & Miller, 2023). By simultaneously analyzing multiple psychological constructs and demographic variables, this research aims to construct a holistic model of post-injury psychological recovery (Davis & Evans, 2022).

Method

Participant Description

A sample of 100 athletes with the past history of sports-related injury were selected for the present study through convenient sampling method. The participants were aged between 13 and 32 Years and includes both the gender (Male =, Female =). The participants were selected based on the predefined inclusion and exclusion criteria. Apart from this, the participants who volunteered and provided consent were only included in the present study. The inclusion criteria of the participants included in the present study are sports players aged 18 years or older, those with a verifiable history of at least one significant sports-related injury and should actively engaged in ongoing sports practice or currently undergoing clinical rehabilitation at the time of data collection. The exclusion criteria for selecting the samples in the present study were those players with diagnosed severe pre-existing neurological or psychiatric conditions and players without a history of sports-related physical injury.

Variables

The Independent Variable employed in this study was Perceived Movement Safety, frequently operationalized as the fear of re-injury. The Dependent Variables included psychological readiness to return to sport and competitive self-confidence. Further several demographic variables were cataloged to facilitate comparative analysis, including gender, age, type of sport, locality (categorized as Rural or Urban), and Socio-Economic Status (SES)

Measures used

A set of self-report measure to assess kinesiophobia, psychological readiness, and self-confidence among sports players Tampa Scale of Kinesiophobia (TSK), Injury-Psychological Readiness to Return to Sport Scale (I-PRRS) and Competitive State Anxiety Inventory-2 Revised (CSAI-2R) were used. Additionally, a personal data sheet was also included to collect data regarding the socio- demographic variables. A detailed description of each measure is mentioned below:

Tampa Scale of Kinesiophobia (TSK; Miller et al., 1991) is a 17-item self-report questionnaire designed to assess fear of movement and re- injury (kinesiophobia). Items are rated on a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree). Higher scores indicate a greater degree of kinesiophobia and fear-avoidance behavior among the athletes.

Injury-Psychological Readiness to Return to Sport Scale (I-PRRS; Glazer, 2009) is a 6-item assessment tool used to measure an athlete's psychological readiness to return to competition following an injury. Respondents rate their confidence on a scale from 0 (no confidence) to 100 (complete confidence) across various sport-

specific scenarios. An over- all score is calculated by summing the items and dividing by 10, with higher scores reflecting greater psychological readiness.

Competitive State Anxiety Inventory-2 Revised (CSAI-2R; Cox et al., 2003) is a widely used 17-item self-report scale that measures competitive state anxiety. For this study, the self-confidence subscale was primarily utilized. Items are scored on a 4-point Likert scale from 1 (not at all) to 4 (very much so), with higher scores on this subscale indicating higher levels of competitive self-confidence prior to athletic performance.

Personal data sheet- A customized personal data sheet was utilized to collect the relevant socio-demographic details of the participants, which included their age, gender, locality, type of sport, and socio-economic status.

Procedure

Prior to the initiation of data collection, formal authorization was obtained from relevant sports institutions, training academies, and head coaches to ensure institutional compliance and ethical transparency. Participants were purposively recruited through secure online platforms and established professional sports networks to facilitate a broad yet contextually relevant reach within the target population. Data were collected using a structured online questionnaire administered via Google Forms. The encrypted survey link was disseminated electronically to prospective participants. Upon accessing the survey platform, individuals were first presented with a detailed informed consent form outlining the study's objectives, procedures, eligibility criteria, potential risks and benefits, and their rights as participants. Clear instructions emphasizing the academic purpose of the research were provided. Participants were explicitly informed that their involvement was entirely voluntary and that they retained the right to withdraw at any stage without penalty. Strict confidentiality was maintained throughout the study; no personally identifiable information was collected, and responses were recorded anonymously. All data were used solely for aggregate academic analysis and research purposes.

Data analysis

Data generated from the digital surveys were imported and analyzed using specialized statistical software, specifically SPSS Version 26. Descriptive Statistics, including the mean and standard deviation, were calculated to comprehensively describe the sample characteristics and the baseline levels of the measured variables. Pearson correlation analysis was systematically performed to examine the direction and magnitude of the relationship between perceived movement safety, psychological readiness, and competitive self-confidence.

Results

Table 1

Demographic Characteristics of the Sample (n = 100)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	60	60.0
	Female	40	40.0
Age Group	18-22 Years	45	45.0
	23-27 Years	35	35.0
	28+ Years	20	20.0
Locality	Urban	55	55.0
	Rural	45	45.0
Type of Sport	Contact	65	65.0
	Non-Contact	35	35.0
Socio-Economic Status (SES)	High	25	25.0
	Middle	50	50.0
	Low	25	25.0

Table 2

Descriptive Statistics for Psychological Variables

Variables	N	Mean	Std. Deviation
Perceived Movement Safety (TSK)	100	42.35	6.72
Psychological Readiness (I-PRRS)	100	38.12	5.84
Competitive Self-Confidence (CSAI-2R)	100	22.45	4.31

The descriptive statistics derived from the psychometric assessments provided baseline measurements of the psychological constructs (Howell, 2012). Table 2 illustrates the central tendencies and dispersions for the Tampa Scale of Kinesiophobia, the I-PRRS, and the CSAI-2R self- confidence subscale. The elevated mean score of the TSK indicates a moderate to high presence of fear avoidance behaviors among the injured cohort.

Table 3

Intercorrelation matrix showing relationship between kinesophobia, psychological readiness, and self confidence

Variable	1	2	3
Kinesophobia	-		
Psychological readiness	-.52**	—	
Competitive self -confidence	-.48**	-.61**	—

Discussion

The primary objective of this study was to examine the relationships among kinesophobia (perceived movement safety), psychological readiness to return to sport, and competitive self- confidence in injured athletes. The findings provide strong empirical support for the psychological mechanisms underlying post-injury rehabilitation and extend the existing body of literature in sports psychology.

Pearson correlation analyses revealed a significant negative relationship between kinesophobia and psychological readiness to return to sport. Athletes who reported greater fear of movement demonstrated lower levels of cognitive and emotional preparedness for competitive reintegration. This finding aligns with the fear-avoidance model (Vlaeyen & Linton, 2000), which posits that excessive fear of re-injury fosters avoidance behaviors, delays functional recovery, and impedes rehabilitation progress. The results suggest that even when physical healing is adequate, persistent psychological fear can inhibit readiness to resume sport-specific demands.

Similarly, kinesophobia was negatively correlated with competitive self-confidence. Athletes perceiving routine movements as threatening exhibited diminished belief in their athletic competence. This finding is consistent with self-efficacy theory (Feltz, 2008), which emphasizes that confidence in one's physical capabilities is fundamental to performance restoration. Heightened fear of re-injury may undermine perceived control over bodily integrity, thereby increasing cognitive and somatic anxiety prior to competition (Cox et al., 2003).

Conversely, psychological readiness demonstrated a strong positive correlation with competitive self-confidence. This relationship highlights the interdependent nature of adaptive psychological recovery variables. Athletes who feel mentally prepared to return to sport are more likely to exhibit elevated confidence in their performance abilities. The reciprocal reinforcement between readiness and confidence suggests the presence of a positive psychological feedback loop, wherein improvements in one construct may facilitate growth in the other. Collectively, these correlational findings underscore that kinesophobia functions as a central psychological barrier, while readiness and self-confidence operate as protective and facilitative factors in successful return-to-sport outcomes.

Conclusion

In summary, the study provides compelling empirical evidence that kinesiophobia significantly impedes psychological readiness and competitive self-confidence among injured athletes. The strong interrelationships among these variables confirm that physical recovery alone is insufficient for successful return-to-sport outcomes. Furthermore, demographic disparities particularly with respect to gender, age, and socio-economic status highlight the need for individualized, context-sensitive rehabilitation strategies. A comprehensive biopsychosocial approach that simultaneously addresses fear of movement, enhances readiness, and strengthens self-confidence is essential to ensure both psychological well-being and sustained athletic performance following injury.

Limitations

While this study yields significant insights, several methodological limitations must be acknowledged. The reliance on a convenience sample as participants may restrict the broad generalizability of the findings across all athletic populations. The utilization of self-report questionnaires, such as the TSK and I-PRRS, inherently introduces the risk of response bias and social desirability effects, which can be avoided in the future studies by including the data of significant individuals related to the sports players. Furthermore, the cross-sectional nature of the research design precludes the establishment of definitive causal relationships between the psychological variables over time. Future research should employ longitudinal tracking to monitor psychological fluctuations throughout the entire continuum of the rehabilitation process.

Implications

The empirical findings of this research carry profound practical implications for sports medicine professionals, coaches, and sports psychologists. Rehabilitation protocols must be structurally revised to incorporate routine psychometric evaluations of kinesiophobia prior to granting medical clearance for competition. Clinical interventions such as cognitive-behavioral therapy, graded exposure techniques, and imagery should be deployed to dismantle fear-avoidance behaviors systematically. Moreover, sports organizations must address the socio-economic disparities in psychological care by providing subsidized mental health resources to vulnerable athletic populations. Fostering an environment that equally prioritizes mental and physical recovery is essential for the holistic advancement of modern sports medicine.

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