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Evaluation of Perception of Barriers and Facilitators to Performance Training During Rehabilitation in Male Cricket Players –A Survey Based Study

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Abstract:

- ***Background:***
Cricket players face significant musculoskeletal demands, making rehabilitation adherence a critical yet underexplored area. Psychological, environmental, and personal factors collectively shape whether injured players engage meaningfully with structured performance training during recovery.

- ***Aims and Objectives:***
This study aimed to evaluate how male cricket players perceive the barriers and facilitators influencing their participation in performance training during rehabilitation, and to examine the role of age in this relationship.

- ***Methodology:***
A cross-sectional survey design was employed with 120 male cricket players aged 18–30 years, recruited through purposive sampling from cricket clubs, academies, and state-level associations. The Regular Physical Exercise Adherence Scale (REPEAS) — a validated 12-item instrument covering environmental and personal barrier domains — was administered alongside a demographic data sheet.

- ***Statistical Analysis:***
Data were analyzed using descriptive statistics and Pearson's correlation coefficient (r) in SPSS version 29.0, with statistical significance set at $p < 0.05$.

- ***Results:***
Mean environmental, personal, and total scores were 19.78 ± 8.65, 42.14 ± 18.06, and 61.93 ± 24.42 respectively. All three domain scores correlated significantly with one another ($p < 0.001$), with personal scores showing the strongest association with total scores ($r = 0.961$). No significant correlation was found between age and any domain score ($p > 0.05$).

- ***Discussion and Conclusion:***
Psychological and motivational barriers emerged as the dominant determinants of rehabilitation engagement, far outweighing environmental constraints. Age showed no meaningful influence on perceived barriers within this young adult cohort. These findings underscore the need for rehabilitation programs that address both the physical and psychological dimensions of recovery in injured male cricket players.

Keywords: *Rehabilitation Adherence, Performance Training, Cricket Injuries, Perceived Barriers, Psychological Barriers, Sports Rehabilitation, Return to Play, Exercise Adherence.*

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I. INTRODUCTION

Sports injuries are a common occurrence among athletes and can significantly affect physical performance, functional ability, and overall participation in sports. Rehabilitation plays a crucial role in restoring musculoskeletal function, cardiovascular fitness, neuromuscular coordination, and sport-specific performance following injury. Modern sports rehabilitation extends beyond pain reduction and tissue healing, with increasing emphasis on restoring optimal athletic performance and preventing re-injury. Performance training during rehabilitation has emerged as an essential component because it helps maintain physical conditioning, improves muscular strength and endurance, enhances movement efficiency, and facilitates safe return-to-play outcomes.[1]

Cricket is one of the most physically demanding sports, involving repetitive high-intensity actions such as bowling, batting, sprinting, throwing, and rapid multidirectional movements. Although cricket is traditionally considered a non-contact sport, the repetitive biomechanical demands placed on players predispose them to a substantial risk of musculoskeletal injuries.[2,3] Fast bowlers, in particular, are exposed to greater physical stress because bowling involves repeated high-force trunk rotation, spinal extension, and lower limb loading, which increase susceptibility to lumbar spine injuries, hamstring strains, and shoulder dysfunction.[2,4] Similarly, batsmen and fielders frequently experience upper and lower extremity injuries resulting from repetitive movements, overuse, or acute trauma during training and competition.[3]

Injuries sustained during cricket participation can significantly compromise athletic performance and may lead to prolonged periods away from sport. Common cricket-related injuries include lumbar stress fractures, ligament sprains, shoulder instability, rotator cuff injuries, ankle sprains, knee injuries, and muscular strains. [2,4] Prolonged absences from regular training often results in reduced aerobic fitness, muscular weakness, impaired coordination, diminished technical skill, and reduced confidence. Consequently, rehabilitation strategies increasingly integrate performance training to preserve athletic preparedness and minimize functional decline during recovery.[1,5]

Performance training during rehabilitation refers to structured exercise interventions designed to maintain or restore sport-specific physical capacities while facilitating tissue healing and injury recovery. These interventions often include strength and resistance training, flexibility exercises, endurance conditioning, neuromuscular retraining, agility drills, proprioceptive training, and sport-specific movement exercises.[5,6] In cricket players, rehabilitation-oriented performance training may include bowling workload progression, reaction time exercises, sprint conditioning, balance training, and core strengthening programs to improve physical preparedness for return to competition.[5,7] Research suggests that individualized strength and conditioning programs may optimize movement efficiency, enhance physical performance, and reduce the risk of reinjury among cricket players.[5,6]

Despite the acknowledged benefits of performance training, adherence to rehabilitation programs remains a major challenge among injured athletes. Rehabilitation success depends not only on medical or physiotherapeutic interventions but also on an athlete's motivation, psychological readiness, and consistent participation in prescribed exercises.[1] Multiple barriers may negatively influence rehabilitation adherence, including pain, fear of reinjury, lack of confidence, reduced motivation, time constraints, financial burden, limited accessibility to rehabilitation facilities, and inadequate social support. Athletes undergoing prolonged rehabilitation may also experience frustration, emotional distress, reduced team involvement, and uncertainty regarding recovery outcomes, further limiting their engagement in performance training.[1]

Psychological factors are increasingly recognized as major determinants of rehabilitation success among athletes. Fear of reinjury, anxiety about performance decline, low self-confidence, and stress related to delayed return-to-play may adversely affect participation in rehabilitation activities. Conversely, positive psychological attributes such as motivation, self-efficacy, confidence, and resilience can act as facilitators to rehabilitation adherence. Additionally, encouragement from coaches, teammates, physiotherapists, family members, and sports physicians may positively influence rehabilitation outcomes and improve athletes' willingness to participate in structured performance training programs.[1]

Environmental and organizational factors may also influence rehabilitation participation among male cricket players. Accessibility of rehabilitation centers, availability of qualified sports physiotherapists, affordability of treatment, institutional support, and flexibility of training schedules can either facilitate or hinder rehabilitation engagement.[1,6]Professional or elite cricket players may have better access to sports medicine services and rehabilitation resources, whereas recreational or amateur athletes may encounter greater barriers due to limited infrastructure and financial restrictions.[6] Furthermore, rehabilitation programs lacking individualized or cricket-specific approaches may reduce motivation and adherence to performance

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training.[5,6]

Recent advancements in sports rehabilitation emphasize individualized and sport-specific performance training approaches to optimize recovery and improve athletic readiness. In cricket, evidence supports the incorporation of strength training, neuromuscular conditioning, workload monitoring, and reaction-time drills to enhance performance outcomes and reduce injury burden.[4,5,7] Sport-specific rehabilitation strategies not only facilitate physical recovery but also improve confidence and readiness for return-to-play among injured athletes.[5]

Although several studies have explored cricket injury epidemiology, workload monitoring, and strength-conditioning practices, limited evidence exists regarding players' perceptions of barriers and facilitators influencing performance training during rehabilitation.[2,5,6] Most available studies focus primarily on physical rehabilitation outcomes and injury prevention rather than understanding athletes' psychological, behavioral, and environmental experiences during recovery.[1]Understanding the perceptions of male cricket players is particularly important because perceived barriers may delay rehabilitation progress, whereas facilitators may improve adherence, motivation, and successful return-to-play outcomes.[1,5]

Male cricket players represent a unique athletic population due to the repetitive biomechanical demands, competitive expectations, and sport-specific injury patterns associated with cricket participation.[2,3] Rehabilitation experiences may differ depending on playing level, injury severity, access to sports physiotherapy services, and environmental support systems.[1,6] Therefore, identifying factors that influence participation in performance training during rehabilitation may help clinicians, physiotherapists, coaches, and sports trainers develop more individualized and effective rehabilitation programs for injured cricket players.

The REPEAS was developed and validated in 2023 utilizing a rigorous multi-stage procedure that included a content validity review by six health specialists using the Delphi method, as well as an assessment of structural validity, construct validity, reliability, internal consistency, and ceiling and floor effects. The final instrument consists of 12 items divided into two domains: environmental variables and personal factors. Each item is scored on a 0–10 scale, resulting in a total score between 0 and 100, where higher scores imply more obstacles to exercise adherence. With intraclass correlation coefficient (ICC) values of 0.86 and 0.94 for the environmental and personal domains, respectively, and Cronbach's alpha values of 0.908 and 0.915, the scale showed strong psychometric qualities that confirmed both acceptable reliability and excellent internal consistency. The REPEAS was developed for the general adult population, in contrast to earlier tools like the Exercise Adherence Rating Scale (EARS), which was intended for people with chronic low back pain. It fills a significant gap, especially in the management of sedentary behavior, by capturing the entire range of obstacles people encounter, whether they are the lack of a safe park nearby, the expense of a gym membership, a lack of social support, or something as deeply personal as low self-esteem or fear of injury.[16]

In light of the limited literature available on athlete perceptions regarding rehabilitation-related performance training in cricket, the present study titled "Evaluation of Perception of Barriers and Facilitators to Performance Training During Rehabilitation in Male Cricket Players – A Cross-Sectional Study," is undertaken to evaluate the perceptions of male cricket players regarding factors that hinder or support participation in performance training during rehabilitation. The findings of this study may contribute to improved rehabilitation adherence, optimized return-to-play outcomes, and the development of evidence-based rehabilitation strategies for cricket players.

- *Aims & Objectives*

This study set out to understand what actually goes on in the mind and environment of a male cricket player trying to rehabilitate from injury while simultaneously maintaining his physical conditioning. The primary aim was to assess how players aged 18 to 30 perceive the barriers and facilitators that either support or obstruct their engagement in performance training during the rehabilitation period, a question that had never been directly examined in cricket despite the sport's well-documented injury burden. Within this overarching aim, three specific objectives guided the inquiry that is to identify and categorize both intrinsic and extrinsic barriers perceived by male cricketers and examine their relationship with age, to determine the individual and institutional facilitators that enhance training quality and support recovery outcomes and to translate these findings into evidence-based recommendations that coaches, sports scientists, and rehabilitation professionals can realistically act upon.

The psychological, motivational, and behavioural dimensions of day-to-day rehabilitation engagement in cricket players remained poorly characterized, and the question of whether environmental and personal barriers interact or operate independently within a cricket-specific rehabilitation context had never been examined, despite evidence from other sports suggesting these two domains meaningfully reinforce one another. Equally unaddressed was whether age serves as a differentiating factor in how young adult cricketers perceive rehabilitation barriers — an assumption widely held among practitioners but entirely untested within this population. Compounding all of this was a practical measurement gap: although validated instruments such as the REPEAS existed for quantifying exercise adherence barriers in general adult populations, none had been applied within the specific context of cricket rehabilitation, leaving clinicians without an evidence-based tool to identify and address what their recovering players were genuinely struggling with. The study operated under two hypotheses — the alternative hypothesis proposed that a significant association exists between perceived barriers and facilitators and adherence to performance training during

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rehabilitation, and separately, that this association would also be meaningful when examined in relation to age; the null hypotheses, by contrast, proposed no such significant relationships in either case.

II. METHODOLOGY

This study employed a cross-sectional survey-based design to assess how male cricket players perceive the barriers and facilitators influencing their engagement in performance training during rehabilitation. Rather than tracking participants over time, data were collected at a single point, which was the most appropriate approach given that the study sought a structured snapshot of player experiences. A quantitative methodology was adopted using a validated structured questionnaire, allowing findings to be statistically evaluated and meaningfully interpreted across the sample. The study was conducted over a period of six months, during which participant recruitment, data collection, and analysis were systematically carried out. The target age group for the study was 18 to 30 years.

A total of 120 male cricket players aged 20 to 28 years were recruited through purposive sampling, meaning players were selected based on predetermined eligibility criteria directly relevant to the research question rather than through random selection. This ensured that every participant brought genuine lived experience of sports-related injury and rehabilitation to the study. Recruitment was carried out through coordination with coaches, team managers, and physiotherapists associated with recognized cricket clubs, academies, and state-level associations within a defined geographic area. The sample represented all major playing roles including fast bowlers, spin bowlers, batsmen, all-rounders, and wicket-keepers, ensuring that findings were not biased toward any single position or injury pattern and that the results carried reasonable generalizability across the male cricket playing population.

Inclusion into the study required participants to be male cricket players between 18 and 30 years of age, representing any recognized playing role, recruited from affiliated cricket clubs, academies, or state-level associations, and willing to provide written informed consent. Players were excluded if they were female, fell outside the stipulated age range, presented with cognitive or communication impairments preventing meaningful questionnaire completion, were currently receiving treatment for serious psychiatric conditions that might confound their perception of barriers, or were unwilling to provide informed consent.

The primary measurement tool was the Regular Physical Exercise Adherence Scale, referred to as the REPEAS, a validated questionnaire developed by Pereira et al. in 2023, specifically designed to identify and quantify the environmental and personal barriers that hinder exercise adherence among adults, making it directly applicable to a rehabilitation context. A brief demographic data sheet was administered alongside the REPEAS to capture age, playing role, nature and site of the most recent injury, duration of rehabilitation, and current rehabilitation status.

The data collection procedure followed a structured sequence of steps across the six-month study period. Potential participants were first identified through coordination with coaches, team managers, and physiotherapists at the recruiting organizations. Each shortlisted player was then individually assessed against the predefined inclusion and exclusion criteria, and only those fully satisfying the inclusion criteria without any disqualifying factors were invited to participate. Every eligible participant received a clear written explanation of the study's purpose, procedures, expected duration, and their right to withdraw at any time without consequence, following which written informed consent was obtained prior to enrollment. Participants then completed the demographic data sheet capturing age, playing role, injury details, duration of rehabilitation, and current rehabilitation status. The REPEAS questionnaire was subsequently administered in a quiet and comfortable setting under the supervision of the research team, with standardized clarification provided where required to avoid influencing responses, and completion typically required between ten and fifteen minutes. All completed questionnaires were reviewed for completeness and accuracy, with participants given the opportunity to complete missing sections where possible, and questionnaires with excessive missing data were excluded from the final analysis to preserve data integrity.

The independent variable in the study was the perceived barriers to performance training during rehabilitation, measured across the environmental and personal domains of the REPEAS, representing the factors hypothesized to influence rehabilitation engagement and adherence. The dependent variable was adherence to performance training during rehabilitation, operationalized through the total REPEAS score and its component domain scores, where higher scores indicated a greater perceived barrier burden and correspondingly reduced rehabilitation engagement. Age was examined as a co-variable to determine whether it played any meaningful moderating role in the relationship between perceived barriers and rehabilitation adherence.

All data were entered and analysed using SPSS software version 29.0. Descriptive statistics including means and standard deviations were computed for all continuous variables to characterize the sample and summarize the distribution of scores across the environmental, personal, and total barrier domains. Pearson's correlation coefficient was applied to examine the relationships between environmental scores, personal scores, total scores, and age, with a p-value of less than 0.05 set as the threshold for statistical significance across all analyses.

- *Statistical Analysis*

The collected data were summarized by using the Descriptive Statistics: Mean and Standard Deviation to find the relation between environmental, personal, the total score,

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and age (Years); the Pearson correlation coefficient: ("r") was used. The p value < 0.05 was considered as significant. Data were analyzed by using the SPSS software (SPSS Inc.; Chicago, IL) version 29.0.10.

Table 1 Descriptive Statistics for Age (Years)

(n = 120)	Range	Mean	S.D.
Age (Years)	20 to 28	23.85	2.53

- *Table Description:*

This table presents the basic demographic characteristic (Age) of the 120 participants enrolled in the study. The age of the participants spanned a relatively narrow range of 20 to 28 years, reflecting a young adult cohort, likely comprising college-going or early working-age individuals. The mean age of 23.85 years (approximately 24 years) suggests that the majority of participants were in their early-to-mid-twenties, which is a life phase often associated with academic engagement, early professional exposure, and growing awareness of environmental and personal health behaviors.

The standard deviation of 2.53 years indicates that the ages were closely clustered around the mean, with minimal variability across the sample. This homogeneity in age strengthens the internal consistency of the study, reducing age as a potential confounding variable.

Table 2 Assessment of Environmental, Personal, and the Total Score

	Range	Mean	S.D.
Environmental	7 to 48	19.78	8.65
Personal	12 to 104	42.14	18.06
Score (Total)	23 to 152	61.93	24.42

- *Table Description:*

Environmental score ranged from7 to 48with mean:19.78±8.65; personal score ranged from12 to 104with mean:42.14±18.06; and the total score ranged from23 to 152with mean:61.93±24.42. This table captures the core outcome measurements of the study— the environmental score, personal score, and composite total score — across all 120 participants.

- *Environmental Score:*

The environmental score had the narrowest absolute range (7 to 48), with a mean of approximately 19.78 out of a possible 48. This suggests that, on average, participants scored in the lower-to-moderate range on environmental parameters — indicating that environmental factors (such as surroundings, living conditions, or ecological awareness) were moderately perceived or experienced by most participants.

The standard deviation of 8.65 reflects moderate variability, meaning while most participants clustered around the mean, some scored notably higher or lower, pointing to differences in environmental exposure or awareness within the group.

- *Personal Score:*

Personal score showed a much wider range(12 to 104), with a mean of 42.14. This considerable spread and the largest standard deviation (18.06) among the three domains clearly indicate high individual variability in personal factors — suggesting that participants differed greatly in personal behaviors, attitudes, lifestyles, or self-perceived health practices. The wide range from 12 to 104 signals that some participants scored very low (minimal personal engagement or awareness) while others scored exceptionally high (strong personal practices or perceptions).

Table 3 Relation Between Environmental, Personal, and the Total Score

Correlations	"r"	p value
Environmental and personal	0.626	< 0.001*
Environmental and score (Total)	0.817	< 0.001*
Personal and score (Total)	0.961	< 0.001*

(* Significant; "r" = Pearson Correlation Coefficient)

- *Table Description:*

The Pearson correlation coefficient: ("r") was used to find the relation between environmental, personal, and the total score. The environmental, personal, and the total score were positively correlated ($p < 0.05$) with each other. To explore the interrelationships among the three key variables — environmental score, personal score, and total score — Pearson's correlation coefficient (r) was applied. The analysis revealed statistically significant and strong positive correlations among all three pairs of variables ($p < 0.001$).

The correlation between the environmental and personal scores was moderate to strong ($r = 0.626$), indicating that as participants experienced higher environmental influences, their personal scores also tended to rise in a meaningful and consistent manner. This suggests that the external environment plays a notable role in shaping personal outcomes among the study participants. The environmental score and total score demonstrated a strong positive correlation ($r = 0.817$), reflecting that the environmental dimension contributes substantially to the overall score. This finding underscores the considerable

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weight that environmental factors carry in determining the cumulative result. Most strikingly, the personal score and total score shared a very strong positive correlation (r = 0.961), which is the highest among all three pairs. This near-perfect association indicates that the personal component is the dominant contributor to the total score, and changes in personal scores are almost directly mirrored in the total scores.

Taken together, all three correlations were statistically highly significant ($p < 0.001$), firmly establishing that environmental, personal, and total scores are deeply and positively interconnected. The overall pattern suggests that both environmental and personal dimensions jointly drive the total score, with the personal dimension exerting a particularly strong influence.

Table 4 Relation of Environmental, Personal, and the Total Score with Age (Years)

	Age (Years)	
	"r"	**p value**
Environmental	0.026	0.780
Personal	-0.067	0.470
Score (Total)	-0.040	0.664

("r" = Pearson Correlation Coefficient)

- *Table Description:*

The Pearson correlation coefficient: ("r") was used to find the relation of environmental, personal, and the total score with age (Years). The environmental, personal, and the total scores were not correlated ($p > 0.05$) with age (Years). [Table – 4]

To examine whether the participants' age had any bearing on their environmental, personal, or total scores, Pearson's correlation coefficient (r) was once again employed. The age of participants ranged from 20 to 28 years, representing a relatively narrow and young adult age band. The correlation between age and environmental score was negligibly positive ($r = 0.026$, $p = 0.780$), suggesting virtually no linear relationship between how old a participant was and the environmental influences they reported. The result was far from statistical significance, indicating that age plays no meaningful role in determining environmental scores within this sample. Similarly, the correlation between age and personal score was negligibly negative ($r = -0.067$, $p = 0.470$). Although the direction of the relationship was slightly inverse — implying that older participants marginally tended to score lower on the personal scale — this association was too weak and statistically non-significant to draw any reliable conclusions.The age and total score correlation was also negligibly negative ($r = -0.040$, $p = 0.664$), once again confirming the absence of any meaningful relationship between a participant's age and their overall score. In summary, none of the three scores — environmental, personal, or total — showed any statistically significant correlation with age (all $p > 0.05$). This finding suggests that within this young adult population, age does not serve as a differentiating factor in determining stress-related or behavior-related scores. The results imply that the scores are distributed fairly uniformly across the age range studied, pointing to factors other than age as the primary influencers of participant outcomes.

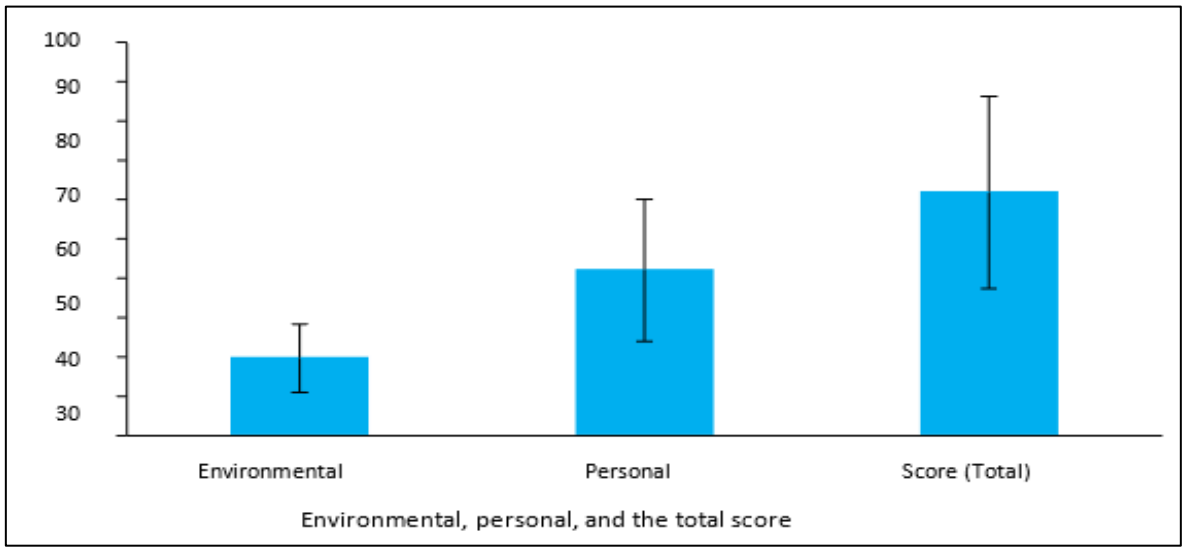

Fig 1 Assessment of Environmental, Personal, and the Total Score

- *Figure Description:*

The bar graph visually presents the mean scores along with their standard deviations for three domains — environmental, personal, and total score. A clear and progressive upward trend is observed as one move from the environmental to the personal and then to the total score. The environmental domain recorded the lowest mean of 19.78 (±8.65), represented by the shortest bar, reflecting

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those environmental influences, while present, were comparatively limited in magnitude. The personal domain showed a considerably higher mean of 42.14 (±18.06), indicating a substantially greater personal burden or influence among the participants. The total score, being a combined measure of both domains, expectedly yielded the highest mean of 61.93 (±24.42), with the tallest bar and the widest variability, as captured by its standard deviation. This reinforce that personal factors contribute more prominently than environmental ones, and together, they collectively shape the total score.

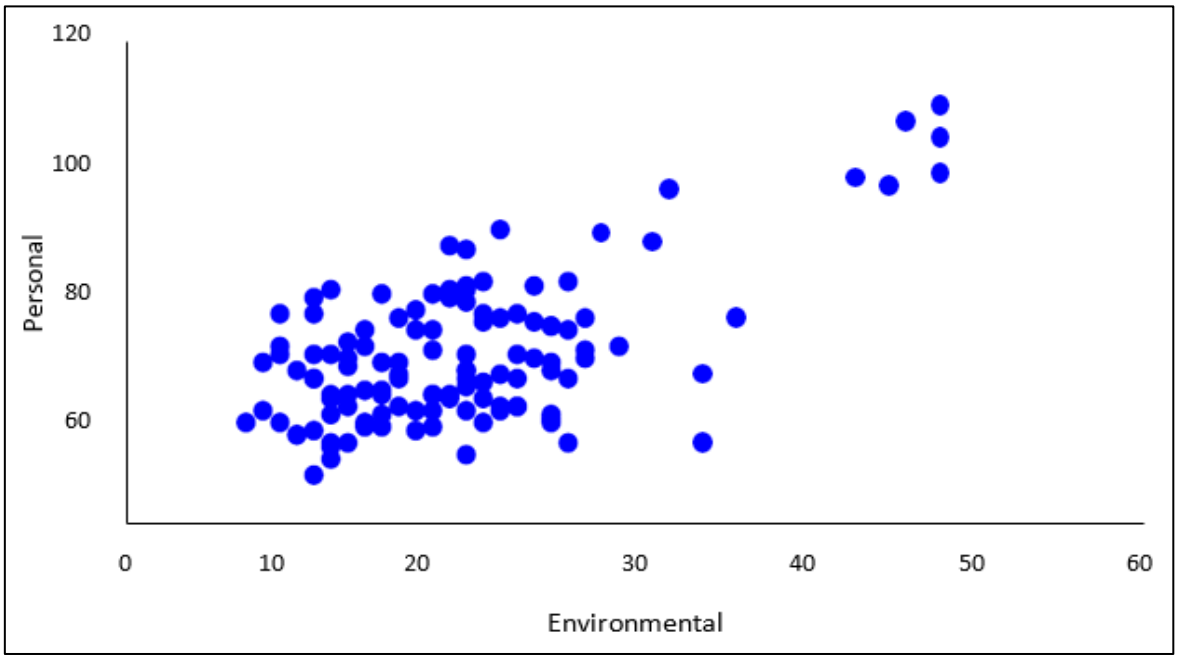

Fig 2 Correlation Between Environmental and Personal

- *Fig. Description:*

The scatter plot illustrating the relationship between environmental scores (plotted on the X-axis) and personal scores (plotted on the Y-axis) reveals a clear and consistent upward trend among the data points. As the environmental score increases, the personal score also tends to rise, forming a moderately strong positive linear pattern. This visual distribution aligns with the statistically computed Pearson correlation coefficient of r = 0.626, confirming a meaningful positive association between the two domains. Although some scatter is evident around the trend line — indicating individual variation — the general direction of the relationship is unmistakably positive, suggesting that participants experiencing higher environmental pressures also tend to report higher personal scores.

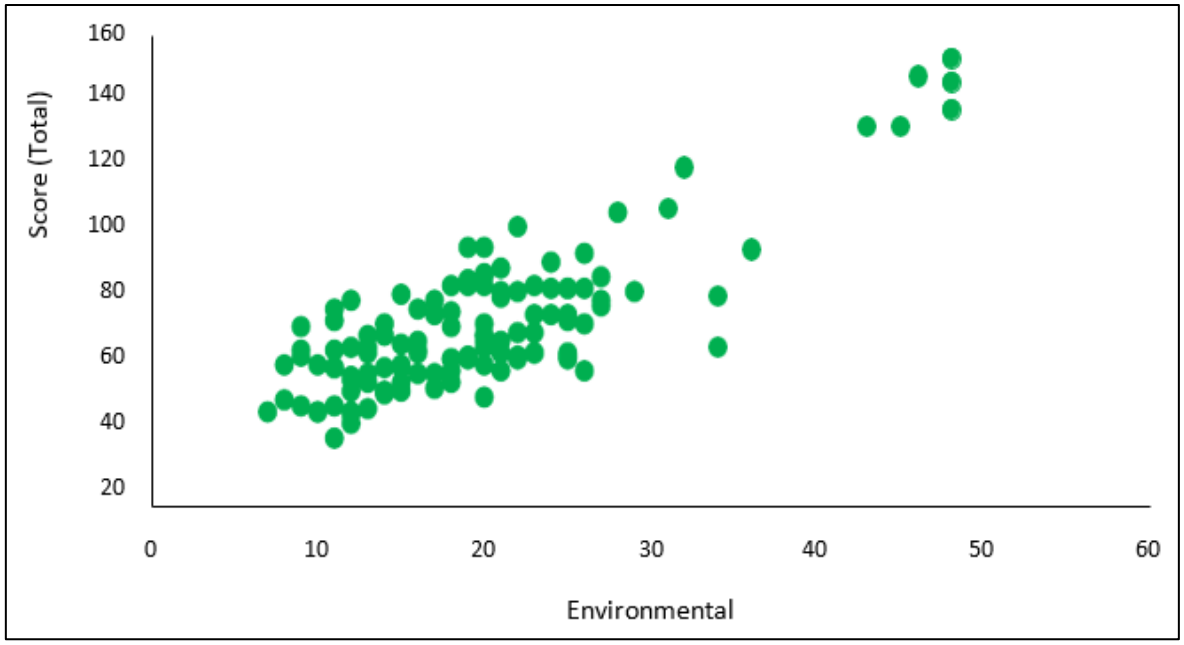

Fig 3 Correlation Between Environmental and the Total Score

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- *Figure Description:*

This scatter plot depicts the relationship between the environmental score (X-axis) and the total score (Y-axis). The data points form a noticeably tight and steeply ascending cluster, demonstrating a strong positive correlation (r = 0.817). As environmental scores rise, total scores increase substantially, with relatively less dispersion compared to the environmental-personal scatter plot. This tighter clustering visually affirms that the environmental component is a strong predictor of the overall total score. The upward sweep of the data points leaves little ambiguity — higher environmental scores are consistently associated with higher total scores, reinforcing the significant role of environmental factors in shaping the cumulative outcome.

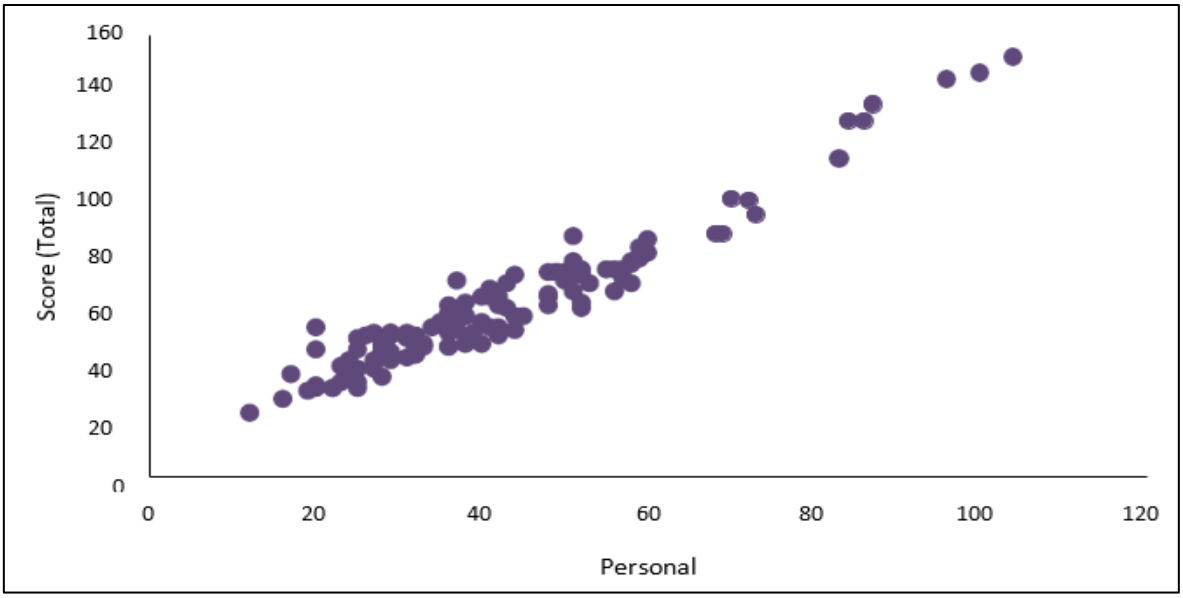

Fig 4 Correlation Between Personal and the Total Score

- *Figure Description:*

The scatter plot for the personal score (X-axis) versus the total score (Y-axis) is the most striking of all three correlation graphs. The data points are arranged in an almost perfectly linear, tightly packed diagonal band, visually reflecting the extremely strong positive correlation (r = 0.961). This near-perfect alignment indicates that the personal score is the dominant driver of the total score — as personal scores go up, the total score rises almost proportionally, with minimal deviation. The tight clustering of points around an imaginary regression line leaves very little variability unexplained, making it visually evident that the personal domain is the single strongest contributor to the total score among all participants.

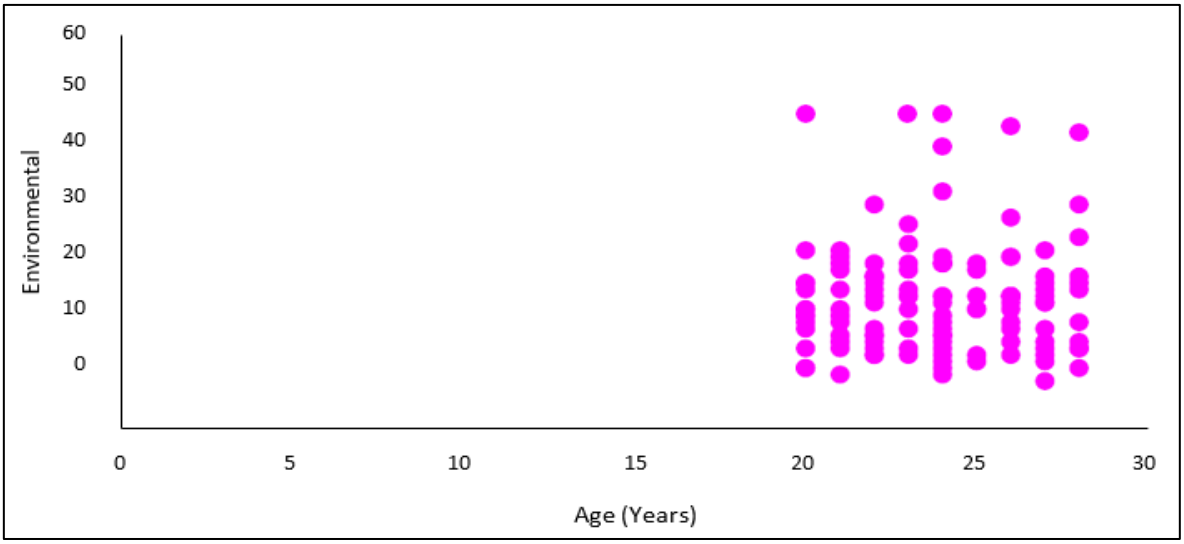

Fig 5 Correlation Between Age (Years) and Environmental

- *Figure Description:*

The scatter plot for age (X-axis, ranging from 20 to 28 years) against the environmental score (Y-axis) shows a widely dispersed and essentially flat distribution of data points. There is no discernible upward or downward trend, and the points appear randomly distributed across the plot without forming any coherent pattern. This visual randomness is consistent with the near-zero Pearson

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correlation coefficient (r = 0.026, p = 0.780), confirming that age has virtually no relationship with environmental scores. Participants of all ages within the studied range recorded environmental scores spread across the entire spectrum, indicating that age does not predict or influence the environmental domain in any meaningful way.

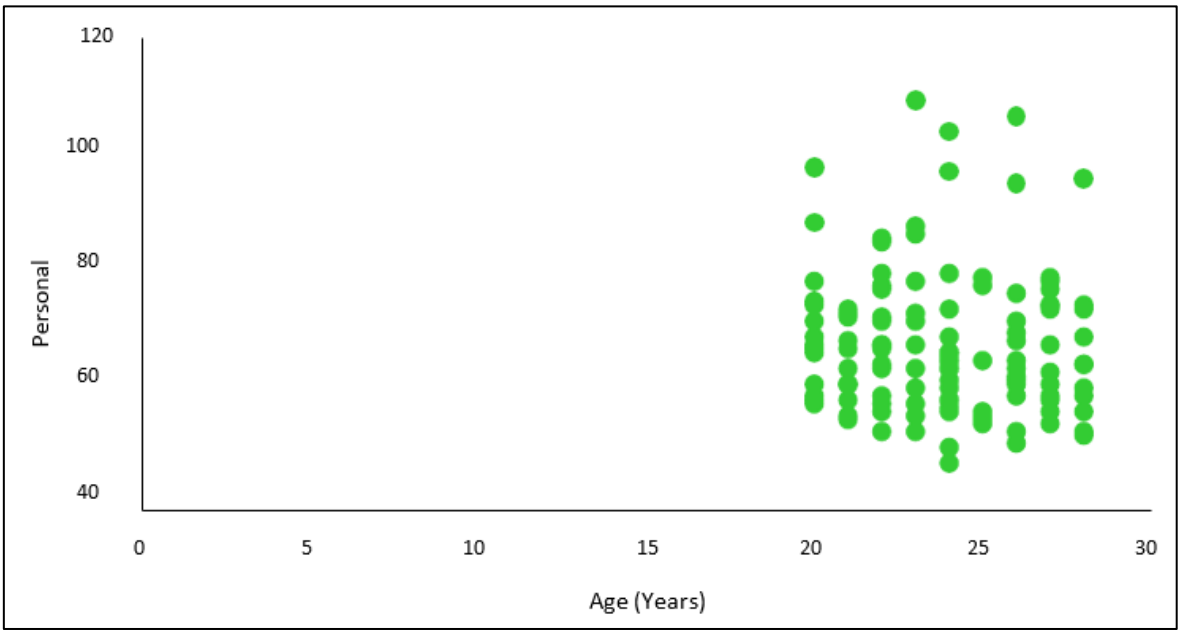

Fig 6 Correlation Between Age (Years) and Personal

- *Figure Description:*

The scatter plot for age versus personal score displays a broadly scattered distribution of data points with no apparent directional trend. The slight downward tendency — corresponding to the marginally negative r value of −0.067 — is so negligible that it is barely perceptible in the visual representation. The data points are spread widely across personal score values for every age group, and no consistent pattern emerges. This reinforces the statistical finding (p = 0.470) that age has no significant bearing on personal scores, and confirms that the personal dimension of the assessment is equally distributed across the age range studied.

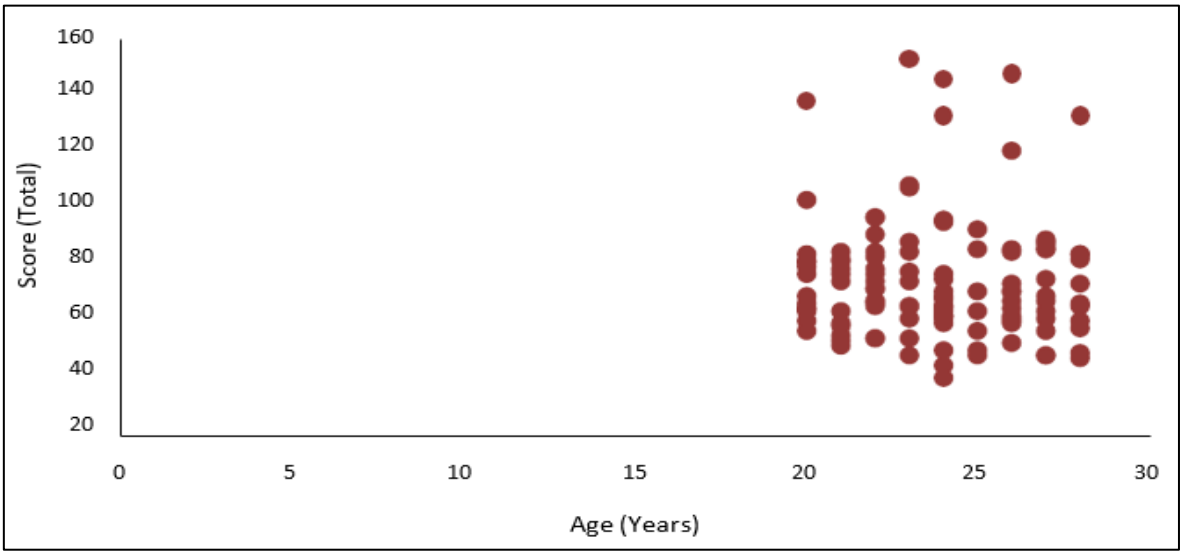

Fig 7 Correlation Between Age (Years) and the Total Score

- *Figure Description:*

The final scatter plot, depicting age against the total score, similarly presents a diffuse, unstructured spread of data points. Despite the total score having a wider range (23 to 152), the distribution across age groups shows no clear upward or downward slope, visually reflecting the negligible negative correlation (r = −0.040, p = 0.664). Participants at every age point — whether 20 or 28 years — recorded both low and high total scores, and no age-related pattern is apparent. This graphically confirms that age is not a determinant of the overall stress or behavioral burden captured by the total score, and that other unmeasured factors, rather than age, likely account for the variation observed in total scores.

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III. RESULTS

In all, 120 male cricket players between the ages of 20 and 28 took part in the study; their mean age was 23.85 ± 2.53 years, making them a youthful, physically active group whose ages were closely clustered, reducing age as a confounding factor. The environmental score ranged from 7 to 48 with a mean of 19.78 ± 8.65 when barrier scores were evaluated across the two domains, indicating that although external barriers like facility access, financial limitations, and institutional support were present, they were generally encountered at a moderate level. The personal score, which ranged widely from 12 to 104 with a mean of 42.14 ± 18.06, revealed much more about the players' internal rehabilitation experiences. While some players handled it fairly well, others carried an overwhelming psychological and motivational burden. The total composite score, which captured the cumulative weight of both domains throughout the cohort, had a mean of 61.93 ± 24.42 and ranged from 23 to 152.

Strong and statistically significant positive connections between all three variables were found by Pearson's correlation analysis ($p < 0.001$ for all). A moderate-to-strong positive correlation ($r = 0.626$) was found between the environmental and personal scores, indicating that players who faced more external obstacles also tended to struggle more internally. This suggests that the environment and the person are deeply intertwined experiences during rehabilitation rather than distinct ones. The remarkable correlation between the environmental score and the overall score ($r = 0.817$) highlights the significant influence of external factors on the overall rehabilitation burden. Most remarkably, there was a nearly perfect correlation ($r = 0.961$) between the personal score and the total score, indicating that the psychological, behavioral, and motivational aspects of a player's inner experience are the single most important factor influencing the overall barrier burden, far outweighing environmental factors in terms of both magnitude and influence.

There were no statistically significant correlations between age and any of the three ratings. The correlations between age and environmental score ($r = 0.026$, $p = 0.780$), personal score ($r = −0.067$, $p = 0.470$), and total score ($r = −0.040$, $p = 0.664$) were all negligible and non-significant ($p > 0.05$), suggesting that a player's age had no significant impact on the barriers he perceived or the extent to which those barriers affected his engagement in rehabilitation.

Given the highly significant correlations found across all barrier domains ($p < 0.001$), the alternative hypothesis is accepted and the first null hypothesis, which claimed that there is no significant relationship between perceived barriers/facilitators and adherence to performance training among male cricket players during rehabilitation, is rejected.

On the other hand, age showed no statistically significant relationship with any of the barrier scores ($p > 0.05$), supporting the second null hypothesis, which claimed that there is no significant association between perceived barriers/facilitators and adherence in relation to age. When combined, these findings provide a clear picture: a recovering cricket player's internal feelings, concerns, and beliefs have a greater influence on whether or not they completely participate in performance training throughout rehabilitation than his age.

IV. DISCUSSION

The main objective of the current study was to assess how male cricket players perceive the obstacles and enablers affecting their participation in performance training during rehabilitation. Across all objectives, the results consistently indicated one overarching and clinically significant reality: an injured cricket player's internal, psychological world matters far more than his external circumstances in determining how fully and consistently he participates in structured rehabilitation. 120 male cricket players between the ages of 20 and 28 made up the sample. They represent the most athletically active and career-focused stage of a cricket player's life, when the demand to recuperate fast and resume competitive play is both severe and very personal.

Therefore, understanding what prevents these players from participating in effective rehabilitation is not just an intellectual exercise; it directly affects how sports medicine teams, coaches, and physiotherapists create and implement rehabilitation programs in cricket.

The size and predominance of human obstacles over environmental ones was the study's first and most notable finding. The sample's personal barrier scores varied greatly, with some athletes bearing an almost maximal burden. The near-perfect correlation between personal scores and total scores made it abundantly evident that behavioral, psychological, and motivational factors are the main causes of the athletes' overall rehabilitation burden.

In their scoping review on rehabilitation adherence after anterior cruciate ligament injuries, Walker, Hing, and Lorimer (2020) concisely described this tension by identifying psychological preparedness, self-motivation, and fear of reinjury as the most frequently reported determinants of rehabilitation participation. They also noted that these internal factors outweighed external logistical barriers in their influence on adherence outcomes.[1] The results of this study support this conclusion in the context of cricket-specific rehabilitation and extend it to the field of performance training during recovery, which has gotten very little research attention.

In a systematic review of 2,918 patients after ACL reconstruction, Nwachukwu et al. (2019) found that nearly 65% of those who did not return to sport cited psychological reasons as the primary cause, with fear of reinjury being the most commonly reported factor, followed by reduced confidence, depression, and diminished motivation. This finding may be the most striking parallel to the current findings.[11] These are exactly the kinds of personal obstacles that the REPEAS scale measures, and their prevalence in the

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current sample indicates that, regardless of the sport-specific context, male cricket players are negotiating a very similar psychological environment during rehabilitation. Stress and depression were the most common obstacles affecting participation and performance, according to Sharma and Chintamani's (2023) direct study of state-level cricket players. They concluded that psychological factors posed a greater threat to rehabilitation engagement than physical limitations alone. The findings of the current study are significantly strengthened by this cricket-specific confirmation, which also supports the claim that psychological obstacles represent a defining difficulty rather than an incidental aspect of the recovery process. [12]

The particular demands and identity implications of cricket as a sport are probably the reason this trend appeared so strongly in the current sample. Over many years, cricket players, especially fast bowlers, batsmen, and all-rounders, devote a tremendous amount of mental and physical energy to their craft. An injury destroys a player's identity as an athlete, his routine, his connection to his team, and his sense of purpose in addition to causing a physical setback. Shame-proneness and psychological distress were found to be important mediators of athlete well-being and performance outcomes by Rice et al. (2021), who specifically studied junior elite cricket players. Shame-prone athletes showed higher rates of psychological distress and lower measures of overall well-being This speaks directly to what personal barriers actually look like in a cricket population; they are lived emotional experiences rather than abstract psychological constructs that influence how a recovering player shows up to rehabilitation every day, how hard he pushes himself, and how long he perseveres when progress feels uncertain or slow.[13]

Even though they were not as prevalent as personal barriers, environmental barriers were nevertheless very much present and made a substantial contribution to the overall barrier load that the sample faced. There were real differences in the accessibility, cost, and institutional support of rehabilitation for various players in this group, as seen by the vast range of environmental scores, which ranged from 7 to 48. It was evident that certain players had far more environmental challenges than others, and these variations were not insignificant. The cumulative rehabilitation experience is significantly shaped by external circumstances, as seen by the high positive link between environmental ratings and overall scores.

In their study of franchise-level cricket trainers, Pote, King, and Christie (2020) found similar discrepancies, pointing out that access to qualified sports medicine support and rehabilitation infrastructure varied significantly across playing levels, with recreational and club-level players frequently facing significantly greater resource constraints than professional athletes.[6] Ramachandran, Singh, and Lathlean (2022) also pointed out that players' capacity to participate in structured performance training during recuperation is seriously hampered by the variable availability of tailored, cricket-specific rehabilitation support across various playing contexts. These findings indicate that resource disparity in cricket continues to be a problem for rehabilitation results and are in close agreement with the environmental barrier patterns found in the current study.[5]

However, the environmental results' interaction with human barriers—rather than their independent effect—is what makes them especially significant. The environmental and personal scores showed a moderate-to-strong positive connection ($r = 0.626$), indicating that these two domains do not function independently but rather reinforce and amplify one another in ways that are crucial for rehabilitative therapy. External stressors do not stay neatly contained in the environmental domain when a player is unable to regularly access a rehabilitation facility, when financial constraints make it difficult to attend physiotherapy sessions, or when his club offers no significant institutional support during recovery. They seep inward, increasing self-doubt, intensifying frustration, undermining motivation, and adding to the player's already heavy psychological load.

Åkerlund et al. (2023) observed a strikingly similar dynamic in youth floorball players participating in the Knee Control injury prevention program, finding that practical barriers such as limited facility access, time constraints, and lack of space not only created logistical obstacles but directly undermined player motivation and action self-efficacy — making players less likely to sustain participation even when they intellectually recognized the program's value.[8] Barden et al. (2022) found an analogous pattern among schoolboy rugby coaches implementing the Activate injury prevention program, where environmental limitations such as poor weather conditions, restricted training time, and inadequate resources interacted with motivational factors to reduce overall program adherence even among coaches who were fundamentally supportive of the initiative.[14] These parallels across different sports and populations reinforce the idea that environmental and personal barriers are fundamentally co-dependent and that rehabilitation programs addressing only one dimension while neglecting the other are unlikely to achieve optimal adherence outcomes.

In this young adult cohort of 20 to 28 years, players of all ages reported similar levels of barriers, and no significant age-related gradient emerged in either direction. This finding challenges any assumption that older, more experienced players within this age range are intrinsically more psychologically resilient or better equipped to navigate the challenges of rehabilitation. The secondary finding regarding age adds another crucial layer of nuance to the overall picture. Across all three barrier domains—environmental, personal, and total.

Montenegro-Bonilla et al. (2024) emphasized that emotional regulation and psychological resilience in athletes are shaped far more by deliberate training, mentorship quality, and emotional intelligence development than by chronological age alone [9], and Kosirnik, Antonini Philippe and Pomini (2022) similarly found that self-compassion and mental toughness — both of which serve as important facilitators of rehabilitation adherence — develop through

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intentional cultivation and supportive social environments rather than simply accumulating with age.[10] Pandey et al. (2025), in their cross-sectional study of professional cricketers in Nepal, demonstrated that injury prevention knowledge and rehabilitation-related practices were shaped more powerfully by access to medical support, full-time medical staff availability, and targeted educational interventions than by demographic characteristics such as age, further supporting the present study's conclusion that age is not a meaningful differentiator of rehabilitation barrier experience within young adult cricket populations.[15]

This age-related discovery has clear clinical implications: male cricket rehabilitation programs shouldn't assume a player's psychological resilience based solely on their age. When considered collectively, the study's results support the alternative hypothesis by demonstrating a strong correlation between perceived obstacles and adherence to performance training during rehabilitation. However, the null hypothesis is upheld with regard to age, as no significant correlation was found.

The main point is that male cricket players undertaking rehabilitation bear a twofold burden of interwoven personal and environmental obstacles, with the personal psychological aspect emerging as the primary factor influencing rehabilitation engagement. The effectiveness of player's rehabilitation program in addressing both his physical recovery and his inner psychological world ultimately determines whether or not he returns to his sport with confidence and readiness. This is because programs that focus on one while ignoring the other will consistently fall short of what injured cricketers truly need.

V. CONCLUSION

The goal of this study was to determine what actually prevents male cricket players who are injured from participating fully in performance training throughout his recuperation. The results provided a clear answer to that question. The personal, psychological, and motivational aspects of a player's inner world emerge as the most potent determinants of rehabilitation adherence, even while contextual considerations like access to facilities, budgetary constraints, and institutional support do play a significant impact. This conclusion is hard to ignore due to the near-perfect alignment between personal barrier scores and overall burden scores. When a recovering cricket player is struggling with fear of reinjury, loss of confidence, decreased motivation, or emotional distress, those internal struggles overshadow nearly everything else in his rehabilitation journey.

The conclusion that age has no discernible impact on how barriers are experienced or perceived within this young adult population is equally remarkable. The difficulties of rehabilitation are felt equally by players of 20 and 28 years of age, which serves as a reminder that vulnerability during recovery is a basic human reaction to uncertainty, physical setbacks, and the very real fear of losing one's place in the sport.

For physiotherapists, coaches, sports trainers, and administrators, these findings convey a clear and useful message: successful rehabilitation for male cricket players must go beyond organizing physical recovery procedures and guaranteeing logistical access. Building confidence, maintaining motivation, validating emotional reactions, and fostering an atmosphere where the athlete feels truly supported as a person rather than being treated as a patient are all important aspects of actively addressing the psychological landscape of the injured athlete. Rehabilitation can only maximize return-to-play results and assist injured cricket players in regaining their performance with readiness and confidence if it is planned with both the body and the mind in mind.

VI. LIMITATIONS AND FUTURE RECOMMENDATIONS

The sample included only male cricket players aged 18–30 from a specific geographic area, and the absence of a control group meant direct comparisons with uninjured players were not possible. Relying solely on a questionnaire captured what players felt but not always why, and the cross-sectional design offered only a single snapshot rather than tracking how barriers shifted throughout recovery. However, none of these limitations compromise the credibility of the findings. The large sample size, validated tool, and highly significant results across all domains ensure the conclusions remain strong and clinically meaningful. Future research should include female cricketers, a broader age range, players across different competitive levels, and a control group for clearer comparisons. Adding qualitative methods and longitudinal follow-ups would deepen understanding, and most importantly, given how powerfully psychological barriers dominated this study, there is a genuine need to develop structured mental health and motivation support programs tailored specifically for injured cricketers.

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- *Declaration of Conflict of Interest*

The authors declare that there is no conflict of interest associated with this study. No external funding was received. All findings presented in this research are honest and unbiased.

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