



An empirically derived framework of psychological determinants of peak performance in elite Indian athletes: A phenomenological study

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Abstract

This study explored the psychological determinants of peak performance among Indian athletes using a qualitative, phenomenological approach. Data were collected from 20 elite athletes representing both individual and team sports through semi-structured interviews and open-ended questionnaires. The analysis led to the identification of 22 indicators, which were organised into six dimensions: winning mentality, 4Cs of Excellence, centering, mental tenacity, cognitive and metacognitive processes, and support system.

The findings indicated that internal psychological processes, particularly emotional regulation, composure, and attentional focus, accounted for the highest proportion of responses, highlighting their central role in peak performance. Indicators related to confidence, competence, and discipline also contributed substantially, whereas cognitive planning and support systems accounted for relatively lower proportions. Comparative analysis showed that individual placed greater emphasis on self-regulation and competence-related dimensions, while team athletes demonstrated relatively higher preferences for cognitive structuring along with self-regulation and competence-related dimensions.

The absence of relevant qualitative evidence in the Indian context underscores a significant gap in the literature. The study provides a contextually grounded framework of psychological determinants, emphasising the importance of internal regulation within the socio-cultural realities of Indian sport. The findings have implications for the development of culturally relevant mental training interventions and contribute to advancing qualitative research in sport psychology.

Keywords: Indian elite athletes, psychological determinants, peak performance framework, cultural context in sport psychology, qualitative research, phenomenological themes

Introduction

In the modern era of high-stakes international championships, the disparity in physical, technical, and strategic capabilities among elite athletes is diminishing, due to advancement in sports science. As the benchmarks for excellence continually rise, achieving and sustaining peak performance has become increasingly formidable. Athletic success at the highest level is a multidimensional phenomenon arising from an intricate interplay of nature and nurture factors. Key contributors to world-class performance include genetics, environment, deliberate practice, anthropometric characteristics, physical fitness, physiological traits, trainability, psychological attributes, and nutrition, which together prepare athletes to meet the rigorous demands of elite competition.

While existing research has advanced the understanding of athlete development by identifying PDs, most studies originate from developed nations. Developing countries, like India, however, present a contrasting sporting backdrop. Many elite Indian athletes hail from economically disadvantaged backgrounds, often lacking access to advanced facilities and sports science support. Despite these challenges, Indian athletes have achieved remarkable success globally in sports such as hockey, shooting, wrestling, gymnastics, weightlifting, and boxing.

Sport psychology literature has majorly been developed in western countries^[6] and has made limited efforts to explore the meanings, values, and motivations associated with physical activity across different cultural groups^[1].

A systematic literature search was conducted across multiple electronic databases, including Scopus, Web of

Science, PubMed, and Google Scholar, to identify studies examining psychological determinants among Indian athletes using qualitative approaches. Scopus yielded one record (n = 1), which was excluded as it was a preprint and not peer-reviewed. The Web of Science search refined by document type and subject categories, yielded no results (n = 0). Similarly, the PubMed search yielded no relevant studies (n = 0). The Google Scholar search retrieved three studies (n = 3) within the first two pages; however, these were excluded as they were quantitative, review-based, or not aligned with the qualitative focus. Overall, no studies met the final inclusion criteria, indicating a significant gap in the literature, particularly the absence of qualitative and thematic investigations exploring psychological determinants among Indian athletes. This has resulted in a relative underrepresentation of Indian athlete populations within the existing body of sport psychology research.

Against this background, utilising qualitative methods, the study aims to investigate the psychological determinants of performance among Indian athletes by capturing their lived experiences, meanings, and contextual realities within the socio-cultural framework of Indian sport.

Method

Participants

The study comprised a total of 20 elite athletes representing both individual and team sports. The individual sports group included athletes from gymnastics, karate, sprinting, swimming, and weightlifting, while the team sports group consisted of football and hockey players. Participants ranged in age from 14 to 46 years, reflecting a mix of

emerging and experienced athletes. Both male and female athletes were represented across sports, with a slightly higher proportion of female participants in individual sports. In terms of competitive level, the sample included athletes competing at national (n = 4), international (n = 9), world (n = 3), and Olympic (n = 4) levels, indicating a high-performance cohort with substantial exposure to elite competition. The majority of participants had more than five years of experience competing at the national level and above, with a few athletes reporting a minimum of three years of such experience. This distribution ensured that all participants possessed adequate competitive exposure and experience to provide meaningful insights into the psychological demands of elite sport within the Indian context.

Instrument

A pilot-tested, open-ended questionnaire was designed to collect qualitative data. It included four sections: an introductory section describing the study and assuring confidentiality, a consent form, a section capturing demographic and competitive background information, and a final section focused on psychological aspects of performance. The central question asked participants to describe the psychological skills that contribute to high performance in competitive sport settings at the national, international, and world level competitions.

Procedure

Data were collected using a phenomenological approach. Twenty Indian athletes from various individual and team sports participated in the study. Initial contact was made through telephone, where the purpose of the study was explained and confidentiality was assured. Participation was voluntary, and interviews were scheduled at times convenient to the athletes.

Prior to data collection, informed consent was obtained. While some participants were not comfortable providing written responses, they agreed to audio-recorded verbal responses. Data were gathered through semi-structured, open-ended interviews, supported by field notes. In a few cases, participants opted for direct transcription of their responses. Each interview lasted between 30 and 45 minutes.

Data Analysis

The data were analysed using a phenomenological framework to understand participants' experiences of peak

performance. Interview recordings were transcribed verbatim and reviewed repeatedly to achieve familiarity with the content. Data from interviews, field notes, and questionnaire responses were examined together to ensure a comprehensive interpretation.

Coding was conducted inductively, with meaningful units related to psychological aspects of performance identified without applying any predefined framework. A total of 211 responses were identified. Similar codes were grouped based on conceptual similarity and recurring patterns, were systematically organised into broader categories.

Results

The thematic analysis led to the identification of 22 indicators, which were further organised into six overarching dimensions representing key psychological domains associated with performance. These dimensions with their indicators consisted of: i) Winning Mentality (achievement orientation), ii) 4Cs of Excellence, (confidence, competence, continuous learning, and composure), iii) Centering (emotional regulation, thought control, focus on controllables, ignore uncontrollables), iv) Mental Tenacity (discipline, perseverance, adaptability and resilience), v) Cognitive and Metacognitive Processes (mental preparation, tactical game planning, goal orientation, and cognitive strategies), and vi) Support System (coach, family, external support, team spirit, physical facilities). The resulting structure reflects patterns grounded in the athletes' responses and captures the key psychological factors associated with performance in the given context.

The distribution of responses across indicators provides a clear pattern in the psychological priorities of elite athletes. The total coded responses show that internal psychological processes were more frequently endorsed than external or environmental factors.

Relative Contribution of Each Indicator in Peak Performance

This section presents the relative contribution of each psychological indicator to peak performance, based on their frequency of endorsement. The distribution highlights the extent to which specific indicators are perceived as important by athletes, allowing for a detailed understanding of the relative weight and prominence of individual psychological factors within the overall performance framework. Figure 1 illustrates the relative contribution of each indicator in peak performance.

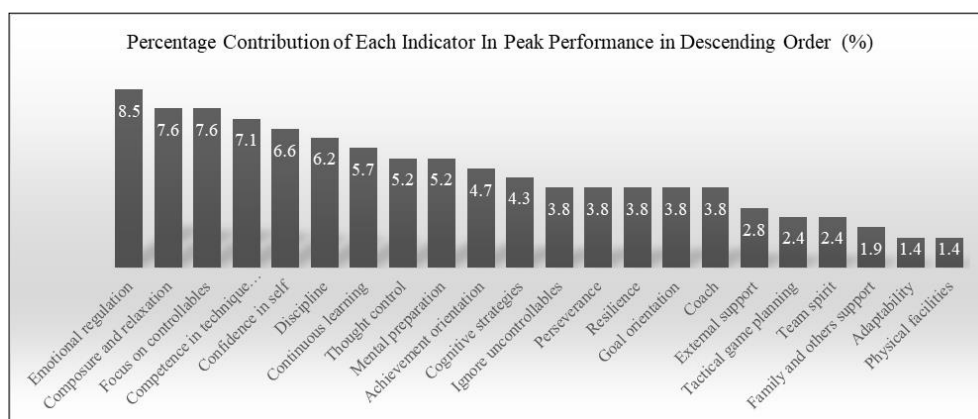


Fig 1: Relative Contribution of Each Indicator in Peak Performance

The relative contribution of indicators shows a clear hierarchy in the psychological determinants of peak performance, with a strong emphasis on internal regulatory processes. Emotional regulation (8.5%) emerged as the most influential indicator, followed by composure and relaxation (7.6%) and focus on controllables (7.6%), indicating that the ability to manage emotions, maintain composure under pressure, and direct attention effectively forms the core of peak performance experiences.

These are closely followed by competence in technique and tactics (7.1%) and confidence in self (6.6%), suggesting that psychological readiness is strongly linked to skill mastery and self-belief. Discipline (6.2%) and continuous learning (5.7%) further reflect the importance of sustained effort and an orientation towards ongoing improvement.

Indicators such as thought control (5.2%) and mental preparation (5.2%) highlight the role of cognitive regulation and readiness, while achievement orientation (4.7%) and cognitive strategies (4.3%) indicate supporting influences in performance. Although present, these factors appear to function alongside stronger regulatory processes rather than as primary drivers.

Lower levels of endorsement were observed for ignore uncontrollables (3.8%), perseverance (3.8%), resilience

(3.8%), goal orientation (3.8%), and coach support (3.8%), suggesting that while these contribute to performance, they are less prominently articulated by athletes. The least endorsed indicators included external support (2.8%), tactical game planning (2.4%), team spirit (2.4%), family support (1.9%), adaptability (1.4%), and physical facilities (1.4%), indicating minimal emphasis on external or situational factors.

Overall, the findings reflect a clear gradient of importance, where emotional and attentional regulation form the central foundation of performance, supported by confidence, competence, and discipline, while external support systems and contextual factors play a comparatively limited role in athletes' perceptions of peak performance.

Relative Contribution of Psychological Dimensions to Peak Performance

This section outlines the proportional contribution of each psychological dimension to overall performance, based on the distribution of responses. The analysis provides an overview of how different domains are relatively emphasised by athletes, offering insight into the hierarchical importance of psychological factors associated with peak performance. Figure 1 illustrates the contribution percentage of each dimension.

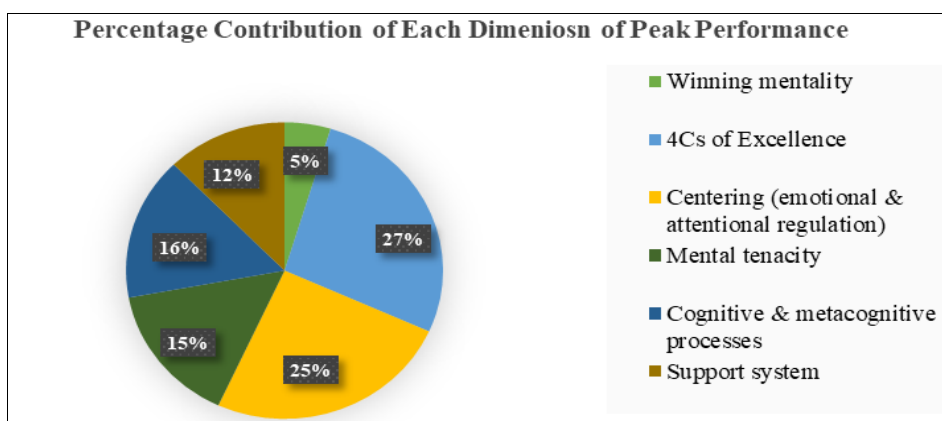


Fig 1: Relative Contribution Percentage of Each Dimension

The 4Cs of excellence dimension (27.0%) and centering (25.1%) together account for more than half of the total responses, indicating a dominant emphasis on self-regulation, confidence, competence, and composure. Mental tenacity (15.2%) and cognitive processes (15.6%) contribute moderately, while support systems (12.3%) and winning mentality (4.7%) represent comparatively smaller proportions, suggesting that athletes prioritise internal psychological competencies over external or outcome-oriented factors.

Comparative Analysis of Psychological Dimensions in Team and Individual Athletes

This section presents a comparative analysis of the relative contribution of key psychological dimensions as perceived by team and individual athletes. The distribution of percentage across dimensions provides insight into how athletes from different sporting contexts prioritise psychological factors associated with performance. By examining these patterns, the analysis highlights both shared and context-specific emphases in psychological determinants between team-based and individual sport environment. Refer Table 1.

Table1: Comparative Analysis of Psychological Dimensions in Team and Individual Athletes

Dimension	Team Athletes (%)	Individual Athletes (%)
Winning mentality	4.7	4.8
4Cs of Excellence	26.2	27.9
Centering (emotional & attentional regulation)	21.5	28.8
Mental tenacity	16.8	13.5
Cognitive & metacognitive processes	19.6	11.5
Support system	11.2	13.5

The dimension-wise distribution indicates both convergence and variation in the relative contribution of psychological factors between team and individual athletes. Winning mentality shows nearly identical proportions across both groups, suggesting a similar baseline importance of achievement orientation.

The 4Cs of excellence dimension contribute slightly more among individual athletes, indicating a relatively stronger emphasis on confidence, competence, continuous learning, and composure. This is further supported by the higher contribution of centering among both group of athletes, reflecting a greater reliance on emotional and attentional regulation in individual and team performance contexts.

In contrast, team athletes show higher contributions in mental tenacity and cognitive and metacognitive processes. This suggests that discipline, perseverance, and mental readiness, including goal orientation and tactical planning, play a relatively more prominent role in team sport environments.

Support system factors contribute modestly in both groups, with a slightly higher proportion among individual athletes. Overall, the pattern indicates that while both groups prioritise self regulation processes, and competence dimensions, individual athletes place relatively greater emphasis on self-regulation, whereas team athletes demonstrate comparatively higher reliance on mental tenacity and cognitive structuring within performance contexts.

Discussion

The findings point toward a self regulation-driven understanding of peak performance, where Indian athletes prioritise the ability to manage internal states over external factors. Rather than performance being framed primarily in terms of motivation or outcome orientation, it appears to be experienced as a process of maintaining psychological balance under pressure. The prominence of emotional and attentional control suggests that athletes are continuously engaged in regulating arousal, thoughts, and focus in response to competitive demands. This aligns with self-regulation frameworks in sport, where performance is viewed as an ongoing process of monitoring and adjusting internal states^[10].

Confidence and competence also emerge as closely linked constructs, indicating that Indian athletes do not perceive confidence as an abstract trait but as something grounded in preparation, skill execution, and repeated exposure to competitive situations. This supports existing work suggesting that sport confidence is built through mastery experiences and is context-dependent rather than fixed^[9]. The presence of continuous learning further reinforces this process-oriented orientation, where athletes remain engaged in refinement rather than relying on static ability, consistent with frameworks highlighting deliberate practice and ongoing skill adaptation as central to expertise development^[2].

Interestingly, constructs typically associated with mental toughness, such as perseverance and resilience, were less explicitly articulated. This does not necessarily indicate their absence, but rather suggests that athletes may not consciously label their experiences using these terms. Instead, these qualities may be embedded within broader regulatory processes. This observation resonates with

critiques of mental toughness literature, which argue that such constructs are often retrospectively imposed rather than directly expressed in athletes' lived experiences^[3].

Cognitive elements such as planning and goal setting were present but not dominant, indicating that structured strategies may operate in the background rather than as focal components of athletes' narratives. In contrast, immediate, in-the-moment regulation appears to take precedence, particularly in high-pressure contexts where rapid adjustment is required. This reflects the dynamic nature of Indian performance environments, where flexibility and responsiveness may be more critical than pre-defined plans. This partially contrasts with goal-setting literature, which identifies structured goals as critical for performance enhancement^[5], suggesting that while goal setting may guide long-term preparation, athletes experience performance more through real-time regulation than explicit goal frameworks.

Empirical evidence suggests that Indian sport participation is shaped by unique sociocultural, familial, institutional, and infrastructural influences^[4], which may shape athletes' developmental and psychological experiences differently from Western sport contexts. Identification of support system as a moderately important dimension is consistent with other Indian research. Indian studies highlight the significant role of social and environmental factors. For instance, family environment has been identified as a strong predictor of psychological well-being among Indian athletes^[8], and institutional support, team cohesion, and intrinsic motivation have been shown to positively influence performance^[7].

Differences between team and individual athletes indicate that psychological priorities are shaped by the demands of the sporting context, though within a largely shared framework. Individual athletes demonstrate a relatively greater emphasis on emotional and attentional regulation, reflecting the need to independently manage pressure, focus, and performance execution. In contrast, team athletes show comparatively higher contribution of cognitive and metacognitive processes along with mental tenacity, suggesting a stronger orientation toward planning, coordination, discipline, and persistence within collective performance settings. While these variations highlight context-specific emphases, both groups converge on the central role of internal psychological regulation, indicating that effective management of internal states remains fundamental to performance across sport types.

Overall, the findings suggest that peak performance is best understood not as the outcome of isolated traits, but as a dynamic and multidimensional process involving the regulation of internal states, competence, adaptation to situational demands, and maintenance of absolute focus during competition. This process is primarily grounded in athletes' ability to manage emotions and attention, supported by confidence and competence. At the same time, the relative importance of these psychological dimensions varies across sporting contexts, highlighting that performance is shaped not only by universal factors but also by the specific demands of team and individual environments. The relatively internalised representation of external support systems further reflects the cultural, structural, and resource realities of the Indian sporting context, underscoring the need for context-sensitive approaches to psychological training and athlete development.

Conclusion

The study identified 22 psychological indicators organised into six dimensions, providing a structured understanding of the psychological determinants of peak performance among Indian athletes. The results indicate that internal regulatory processes, particularly emotional and attentional control, form the core foundation of performance. These are supported by confidence, competence, and continuous learning, while dimensions such as mental tenacity and cognitive processes and external support systems play a complementary role.

The absence of strong qualitative evidence in existing literature, particularly within the Indian context, further underscores the contribution of the present study in offering a contextually grounded understanding of athletes' psychological experiences. The findings provide an empirically derived framework that can inform mental training interventions and athlete development programmes.

Future Directions

Future research can expand the scope by including a larger and more diverse sample across different sports, performance levels, and regions to enhance generalisability. Comparative analyses based on gender, experience level, and type of sport can provide deeper insights into contextual variations in psychological determinants.

There is also a need for more in-depth qualitative studies, such as longitudinal designs, to understand how psychological factors evolve over time and across different stages of an athlete's career. Integrating qualitative findings with quantitative measures can further strengthen the evidence base and allow for validation of the identified dimensions.

Additionally, future work can explore the development of structured intervention programmes based on the identified indicators, particularly focusing on emotional regulation, attentional control, and confidence building. Greater attention to the role of socio-cultural and environmental factors within the Indian sporting context would also provide a more holistic understanding of performance determinants.

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