

Psychological Dimensions of Volleyball Performance: A Comprehensive Review

Renu Mourya

Assistant Professor, Department of Physical Education, Sant Kavi Baba Baijnath Govt. P. G. College Harakh,
Barabanki, Uttar Pradesh, INDIA

Corresponding Author: vinu24021977@gmail.com



www.sjmars.com || Vol. 2 No. 6 (2023): December Issue

Date of Submission: 16-12-2023

Date of Acceptance: 23-12-2023

Date of Publication: 31-12-2023

ABSTRACT

Volleyball performance depends on psychological processes that operate within individual athletes, between teammates, and across the competitive environment. This narrative review examines anxiety, confidence, perceptual expertise, motivation, collective functioning, psychological skills training, and recovery. Selected research available by September 2023 indicates that these dimensions influence how athletes interpret pressure, select actions, sustain practice, and respond to errors. However, improvements in questionnaire scores or isolated skills cannot automatically be interpreted as improvements in competitive performance. Small samples, contextual differences, and limited experimental control constrain several findings. Effective preparation should therefore integrate individual psychological routines with representative practice, supportive coaching, and appropriate mental health provision. The central implication is that psychological preparation requires continuous evaluation within volleyball's technical and interpersonal demands.

Keywords- Volleyball Performance, Sports Psychology, Psychological Factors, Mental Toughness, Competitive Anxiety, Motivation, Team Cohesion, Self-Confidence, Attention and Concentration, Psychological Skills Training.

I. INTRODUCTION

A volleyball error has immediate technical and social consequences: a point is conceded, tactical conditions change, and teammates must reorganise. Athletes alternate between anticipation during rallies and opportunities for reflection between them. These demands make psychological functioning relevant to both the execution of individual skills and the coordination of collective action. Performance should nevertheless be distinguished from psychological readiness. A confident player may make an unsuitable tactical choice, while an anxious player may still execute effectively.

This comprehensive narrative review synthesises selected peer-reviewed volleyball studies, a volleyball-specific systematic review, and relevant psychological theory and consensus guidance. Targeted web searches combined volleyball with anxiety, self-efficacy, decision-making, cohesion, motivation, mental fatigue, and psychological training; publisher records and research repositories were checked. The publication cutoff was September 2023. Selection prioritised relevance, identifiable methods, and traceable findings. This was not an exhaustive systematic search, and no pooled effect was calculated. Indoor volleyball provides the principal evidence base; transfer to beach or sitting volleyball requires separate verification.

II. INDIVIDUAL PSYCHOLOGICAL PROCESSES

Anxiety and attentional regulation

Competitive anxiety includes cognitive worry and bodily activation. Attentional control theory proposes that anxiety can redirect processing towards threat and weaken goal-directed control [1]. Applied to volleyball, concern about substitution

or a previous reception error may compete with information about the server and ball trajectory. This is a theoretical interpretation, rather than proof that anxiety causes every technical error. Athletes may compensate through additional effort, making reduced efficiency less visible in immediate performance.

A season study followed 15 Brazilian male under-18 players across 24 matches [2]. Anxiety decreased and confidence increased over the season; precompetitive self-efficacy and somatic anxiety were associated with winning odds in opposite directions. These observations do not establish that reducing anxiety would independently produce victories. Opponent quality, scheduling, previous match demands, and shared team circumstances complicate interpretation. Repeated observations also do not convert a single team into multiple independent teams. Practically, assessment should examine when anxiety occurs, its meaning to the athlete, and its relationship with specific actions.

Emotional responses and coping

Emotional consequences of competition can persist beyond the final point. A 2022 investigation followed 14 male youth players from one team across 20 official matches [3]. Losses were associated with less favourable post-match anxiety and mood responses, and substitutes showed a more pronounced decline in vigour after defeat. The findings describe responses to competition; they do not show that negative mood caused the loss. They also indicate why team averages may conceal different experiences among starters and substitutes.

An applied coping framework should distinguish immediate action from later reflection. During play, the athlete requires a manageable attentional target and a clear next responsibility. After competition, discussion can examine controllable decisions without converting one result into a judgement of personal worth. For example, a missed serve should be reviewed in relation to tactical intention, execution, and the agreed tolerance for risk. Treating every error as a failure of composure may discourage appropriate attacking choices.

Confidence and self-efficacy

Self-efficacy concerns perceived capability for a particular task; general confidence is broader. A player may trust the ability to serve accurately while doubting the ability to receive under pressure. Psychological assessment should preserve this specificity. A systematic review of seven volleyball studies identified unclear measurement targets and limited reporting of instrument properties [4]. Consequently, scores from different questionnaires should not be treated as interchangeable measures of a single psychological resource.

An applied implication is to develop confidence through credible evidence: attainable technical challenges, accurate feedback, and documented progress under increasingly demanding conditions. Excessive reassurance may conceal weaknesses, whereas feedback restricted to failures may undermine realistic self-appraisal. Confidence calibration is therefore more useful than confidence maximisation. Figure 1 situates these processes within the wider performance environment.

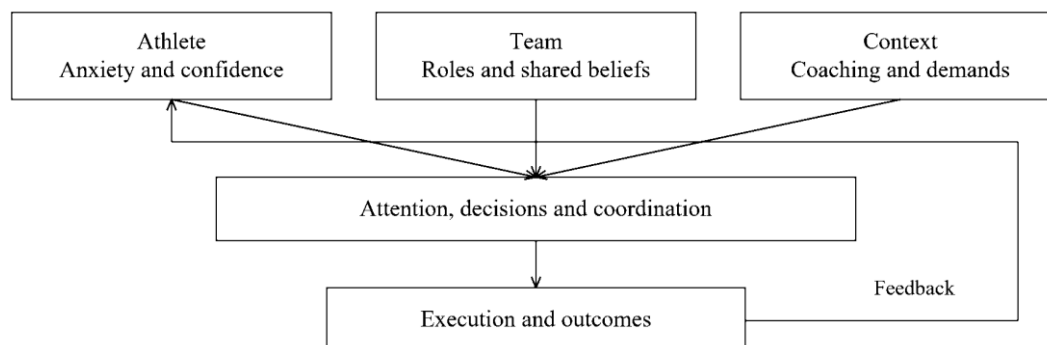


Figure 1. Conceptual relationships in volleyball performance. Arrows indicate proposed influences and feedback, not estimated causal effects. Author synthesis informed by references [1,2,6,8].

Perception and decision-making

Perceptual expertise involves identifying informative cues and selecting an appropriate response before all information becomes available. Zhu and colleagues compared 14 competitive elite, 13 semi-elite, and 11 novice players using spike videos recorded from different perspectives [5]. The more skilled groups anticipated more accurately; competitive elite players made fewer fixations. Viewing perspective also changed search behaviour. These findings caution against prescribing one universal gaze pattern or assuming that laboratory viewing reproduces defensive movement during competition.

A reasonable training application combines video anticipation with court exercises that preserve the relationship between information and action. Setters can practise choosing among plausible attacking options; defenders can interpret attacker movement while maintaining responsibility for court space. The aim is functional selection under realistic uncertainty. Transfer should be evaluated through decisions made in play, including technically unsuccessful actions that were tactically appropriate, rather than through response speed alone.

III. MOTIVATION AND COLLECTIVE FUNCTIONING

Coaching and sustained engagement

Self-determination theory distinguishes the psychological needs for autonomy, competence, and relatedness. In a study of 190 elite volleyball athletes and 26 coaches, game-specific supportive coaching was associated with more favourable need experiences, motivation, and coach-rated performance; need-thwarting behaviour showed opposite patterns [6]. Because coaching and outcomes were observed together, successful play may also have influenced coaching behaviour and perceptions. Coach-rated performance is additionally vulnerable to shared interpretation.

A Danish study analysed 2,150 volleyball players across competitive levels [7]. A mastery climate, which emphasises learning and improvement, was associated with psychological need satisfaction and lower dropout. Retrospective dropout measurement limits causal interpretation. Nevertheless, the findings support examining whether training offers meaningful progress and belonging. Within an applied programme, coaches can explain tactical decisions, provide bounded choices, and communicate selection criteria clearly. These practices should be assessed from athletes' perspectives, including those receiving limited playing time.

Cohesion and collective efficacy

Task cohesion concerns commitment to shared objectives, whereas social cohesion concerns interpersonal attachment. Collective efficacy refers to shared belief in the team's capabilities. Their practical meanings differ: teammates may enjoy one another's company without agreeing on defensive responsibilities. Conversely, effective cooperation need not require close friendship. In volleyball, collective functioning becomes observable through coverage decisions, communication, and coordinated responses to disrupted play.

A season-long intervention involving 81 adolescent female players from six teams combined individual and collective goal setting [8]. The intervention teams reported improvements relative to controls in cohesion and collective efficacy at specified seasonal assessments. However, allocation was not random, and these perceptual outcomes do not demonstrate increased match success. The study supports coordinated goal setting as a promising approach, with further testing required. Applied goals should connect individual responsibilities to collective outcomes, such as reception quality enabling the setter's attacking options.

Communication gives these collective concepts a practical expression. Teams can agree on concise calls, responsibility for ambiguous balls, and procedures for resolving disagreements after a rally. Leadership may be distributed: the setter organises attacking decisions, while other players can reinforce defensive information or help restore attention. These are proposed applications of role clarity and coordinated goals. Their effectiveness should be assessed through actual communication and coverage behaviour, rather than inferred from enthusiasm or the frequency of team celebrations.

IV. PSYCHOLOGICAL TRAINING AND RECOVERY

Self-talk and imagery

Psychological skills should be practised alongside the actions they are intended to support. Self-talk can direct attention through a short instruction, while imagery rehearses relevant perceptual and movement experiences. Their content should reflect the athlete's skill level and the demands of the task. A useful cue must remain manageable during competition; adding several technical instructions immediately before contact may create unnecessary processing demands.

In a study of 60 novice adolescent female players, participants were randomly assigned to self-talk, imagery, combined training, or physical practice alone [9]. Following 24 sessions, the combined group recorded the highest serving scores, with an advantage retained at a two-week assessment. Figure 2 presents the published descriptive results. The single novice sample and isolated serving test restrict transfer to experienced competitors. Baseline variation also means that raw group differences should not be interpreted as adjusted treatment effects.

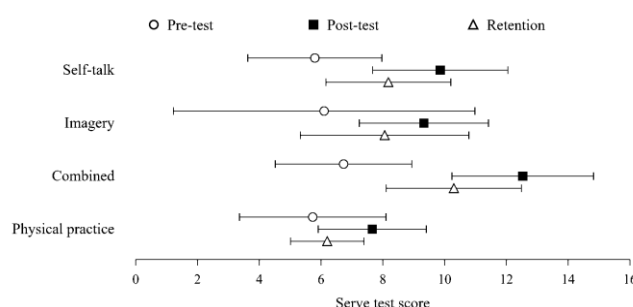


Figure 2. Serving scores before training, after training, and at two-week retention. Symbols show published means; bars represent ± 1 standard deviation, not confidence intervals. Data from Nazari [9], Table 1; 60 participants across four groups.

Mental fatigue and mindfulness

Mental fatigue deserves attention because physical readiness and decision quality may respond differently to the same preparation. In a study of 24 young male volleyball players, repeated smartphone social-media use before training was compared with television viewing [10]. Only the control group improved attacking and passing decisions, while both groups improved countermovement jumping. This finding concerns a specific exposure and comparison condition; it does not establish that all smartphone use impairs volleyball performance.

A three-arm study of 30 female youth players examined mindfulness, music, and control conditions [11]. The authors reported benefits for mental fatigue, without significant between-group differences in physical fatigue or perceived recovery. Interpretation requires caution: the abstract's group abbreviation is inconsistent with its conclusion, and the control group's competition exposure differed from the intervention groups. These limitations weaken a simple causal claim. Mindfulness may be considered an adjunct to preparation, but it should not substitute for recovery opportunities or correction of excessive demands.

Well-being and psychological support

Performance concerns and mental health difficulties can overlap without being identical. The International Olympic Committee consensus recommends validated screening and monitoring, attention to the sporting environment, and access to appropriate treatment [12]. For volleyball programmes, this supports confidential referral pathways and qualified assessment when difficulties persist or impair functioning. Coaches should not infer a diagnosis from poor performance or treat distress as deficient commitment. Athlete welfare remains a legitimate objective even when competitive outcomes do not immediately improve.

V. INTEGRATING EVIDENCE INTO PRACTICE

Figure 3 translates the review into a proposed implementation cycle. Initial assessment should combine athlete discussion, brief validated measures, and observation of representative play. A programme might identify one individual target, such as returning attention to the next serve, and one collective target, such as consistent coverage communication. These targets are examples for adaptation, not a validated intervention package.

Practice should progress from familiar situations to realistic pressure while preserving clear feedback. Between-rally routines may include a brief release of tension, a task-relevant cue, and confirmation of the next responsibility. Their value should be judged by subsequent behaviour rather than ritual compliance. Evaluation can examine reception quality, serve decisions, attacking choices, and recovery after errors alongside perceived anxiety, fatigue, and confidence. Opponent strength, rotation, playing position, and exposure time should be recorded to reduce misleading comparisons.

Position-specific evaluation is particularly useful. A setter's psychological target may concern decision consistency after a poor pass; a libero's may concern attentional recovery after repeated targeting. A substitute may require preparation for entry after prolonged inactivity. Accordingly, identical questionnaires and routines need not serve every role equally. Measurement should also distinguish frequency from opportunity: three communication errors across thirty relevant rallies have a different meaning from three across five. Combining such contextual records with the athlete's account makes feedback more informative and reduces reliance on global labels such as mental toughness.

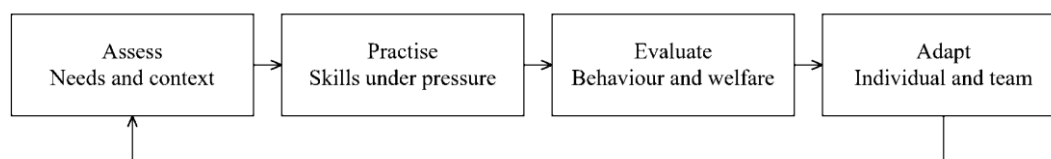


Figure 3. Proposed cycle for integrating psychological preparation into volleyball practice. Author synthesis informed by references [4,8,12]; the cycle has not been validated as a complete programme.

VI. EVIDENCE LIMITATIONS AND RESEARCH PRIORITIES

The evidence reviewed is uneven across constructs and populations. Observational associations permit reciprocal explanations: confidence may support performance, while successful performance may strengthen confidence. Small intervention samples produce uncertain estimates, and athletes within teams share coaches, opponents, and training conditions. Studies should model this clustering and distinguish athlete-level changes from team-level effects. Self-reported psychological improvement should be triangulated with independently coded performance.

Future research should prioritise preregistered, adequately powered trials across multiple clubs, credible comparison conditions, and follow-up beyond immediate acquisition. Studies should report intervention adherence, assessor masking where feasible, effect estimates with uncertainty, and relevant null findings. Skill tests should be connected to match outcomes without reducing performance to wins alone. More representative sampling is required across age, gender,

competitive standard, culture, playing position, and volleyball format. Qualitative work can clarify why an apparently effective technique is acceptable to some athletes and distracting to others.

Claims about stable personality profiles require particular restraint. The studies synthesised here do not establish a personality type that determines volleyball success. Selection decisions based on broad labels could confuse temporary anxiety, unfamiliar roles, or communication differences with enduring limitations. Research should test whether psychological measures add useful predictive information beyond existing skill, experience, and competitive context, and whether that information improves developmental support.

This review's targeted selection, reliance on accessible reports, and absence of formal risk-of-bias scoring constrain completeness. Its synthesis therefore supports conditional applications and research priorities rather than a universal ranking of psychological factors. No evidence reviewed establishes a fixed percentage of volleyball performance attributable to psychology.

VII. CONCLUSION

Psychological dimensions shape how volleyball athletes interpret competitive demands, allocate attention, coordinate with teammates, and sustain participation. The most defensible approach combines task-specific preparation with supportive coaching, recovery, and appropriate mental health care. Promising interventions require evaluation within the populations and performance conditions in which they will be used. Progress should be defined through observable decisions, technical execution, collective coordination, and athlete well-being, with claims proportionate to the quality of the evidence.

REFERENCES

- [1] Eysenck, M. W., Derakshan, N., Santos, R., & Calvo, M. G. (2007). Anxiety and cognitive performance: Attentional control theory. *Emotion*, 7(2), 336–353. <https://doi.org/10.1037/1528-3542.7.2.336>
- [2] de Andrade Nogueira, F. C., Bara Filho, M. G., da Silva, C. D., Coimbra, D. R., & Lourenço, L. M. (2023). Competitive anxiety and self-efficacy in young volleyball players: A season trend study of the reciprocal effect on match outcomes. *Kinesiology*, 56(2), 338–348. <https://doi.org/10.26582/k.56.2.13>
- [3] Do Nascimento, M. H., Sá Filho, A. S., Aprigliano, V., et al. (2023). Acute psychological responses to official match outcomes in male youth volleyball: An observational repeated-measures study within a single national-level team. *Frontiers in Psychology*, 17, 1826372. <https://doi.org/10.3389/fpsyg.2022.1826372>
- [4] Machado, T. A., Balaguer, I., Paes, M. J., Fernandes, G. J., & Stefanello, J. M. F. (2019). Self-efficacy in volleyball: What has been evaluated? A systematic review. *Cuadernos de Psicología del Deporte*, 19(1), 76–94. <https://doi.org/10.6018/cpd.329401>
- [5] Zhu, R., Zou, D., Wang, K., & Cao, C. (2023). Expert performance in action anticipation: Visual search behavior in volleyball spiking defense from different viewing perspectives. *Behavioral Sciences*, 14(3), 163. <https://doi.org/10.3390/bs14030163>
- [6] Morbée, S., Haerens, L., Soenens, B., Thys, J., & Vansteenkiste, M. (2022). Coaching dynamics in elite volleyball: The role of a need-supportive and need-thwarting coaching style during competitive games. *Psychology of Sport and Exercise*, 73, 102655. <https://doi.org/10.1016/j.psychsport.202.102655>
- [7] Elsborg, P., Appleton, P., Wikman, J. M., & Nielsen, G. (2023). The associations between motivational climate, basic psychological needs and dropout in volleyball: A comparison across competitive levels. *European Journal of Sport Science*, 23(3), 393–403. <https://doi.org/10.1080/17461391.2022.2041100>
- [8] Durdubas, D., & Koruc, Z. (2023). Effects of a multifaceted team goal-setting intervention for youth volleyball teams. *Journal of Applied Sport Psychology*, 35(2), 224–243. <https://doi.org/10.1080/10413200.2021.2021564>
- [9] Nazari, S. (2021). Effects of self-talk and imagery on learning of volleyball serve skill in adolescence female students. *Journal of Motor Control and Learning*, 6(3), e144891. <https://doi.org/10.5812/jmcl-144891>
- [10] Fortes, L. S., Fonseca, F. S., Nakamura, F. Y., Barbosa, B. T., Gantois, P., de Lima-Junior, D., & Ferreira, M. E. C. (2021). Effects of mental fatigue induced by social media use on volleyball decision-making, endurance, and countermovement jump performance. *Perceptual and Motor Skills*, 128(6), 2745–2766. <https://doi.org/10.1177/00315125211040596>
- [11] Coimbra, D. R., Bevilacqua, G. G., Pereira, F. S., & Andrade, A. (2021). Effect of mindfulness training on fatigue and recovery in elite volleyball athletes: A randomized controlled follow-up study. *Journal of Sports Science and Medicine*, 20(1), 1–8. <https://doi.org/10.52082/jssm.2021.1>
- [12] Reardon, C. L., Gouttebarge, V., Kroshus-Havril, E., et al. (2020). Mental health in elite athletes: International Olympic Committee consensus statement. *British Journal of Sports Medicine*, 60(15), 1083–1130. <https://doi.org/10.1136/bjsports-2023-111514>