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The Effectiveness of Psychological Interventions on Negative Emotions and Performance in Team Sport Athletes: A Systematic Review

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Corresponding author:
BOTAO LYU

gs69766@student.upm.edu.my

Author Affiliation:
UNIVERSITY PUTRA.

Lyu, BT; Soh, KG; Yaacob, AB.

ADMINISTRATIVE INFORMATION

Support - No.

Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202530029

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 7 March 2025 and was last updated on 7 March 2025.

INTRODUCTION

Review question / Objective What psychological interventions have been studied for managing negative emotions in team sport athletes, and how extensively has cognitive restructuring been examined as a standalone approach?

Condition being studied The review focuses on negative emotions in team sport athletes, including anxiety, fear, and frustration, and their impact on sports performance. Psychological interventions are commonly applied to manage these emotions, but their effectiveness across different sports and competitive levels is not well established. This study aims to evaluate the role of psychological strategies, particularly cognitive restructuring, in regulating emotions and improving athletic performance.

METHODS

Participant or population Inclusion: Team sport athletes (e.g., volleyball, basketball, soccer). Exclusion: Individual sport athletes (e.g., tennis, swimming) unless participating in a mixed-sport study.

Intervention Psychological interventions, including cognitive restructuring, mindfulness, self-talk, relaxation techniques, and cognitive-behavioral therapy (CBT).

Comparator No psychological intervention (control group). Alternative psychological interventions (e.g., mindfulness vs. cognitive restructuring, relaxation techniques vs. CBT).

Study designs to be included Randomized Controlled Trials (RCTs) evaluating the effectiveness of psychological interventions.Quasi-

experimental studies that assess intervention effects without full randomization.Observational studies (e.g., cohort, case-control) providing insights into long-term effects.Mixed-method studies that include both quantitative and qualitative assessments of psychological interventions.

Eligibility criteria Inclusion Criteria:
Studies involving team sport athletes (e.g., volleyball, basketball, soccer).
Studies assessing psychological interventions (e.g., cognitive restructuring, mindfulness, CBT).
Studies measuring negative emotions (e.g., anxiety, fear, frustration) and/or performance outcomes.
Peer-reviewed articles published in English.
Studies with clearly defined intervention methods and control groups.
Exclusion Criteria:
Studies focused exclusively on individual sports (e.g., swimming, tennis).
Studies without a clear psychological intervention.
Studies with poor methodological quality (e.g., unclear outcome measures).
Non-peer-reviewed literature, editorials, and opinion pieces.

Information sources Web of Science、Scopus、Pubmed、SPORTDiscus.

Main outcome(s) Reduction in negative emotions (anxiety, fear, frustration) among team sport athletes, measured using validated psychological scales such as the Competitive State Anxiety Inventory-2 (CSAI-2) or Sport Anxiety Scale (SAS).
Impact on athletic performance, assessed through performance metrics, coach ratings, or self-reported improvements.
Effect measures will include standardized mean differences (SMD), odds ratios (OR), or risk ratios (RR) with corresponding confidence intervals (CI).
Follow-up durations will be categorized as short-term (≤3 months), medium-term (3–6 months), and long-term (>6 months) to assess the sustainability of intervention effects.

Data management All retrieved studies will be stored and managed using Covidence or Rayyan, which facilitate systematic screening and data extraction.
Data will be extracted in a structured format, including study characteristics, interventions, outcomes, and key findings.
A PRISMA flow diagram will be used to track study inclusion and exclusion.
Duplicate records will be identified and removed using EndNote.
A standardized data extraction form will be used to ensure consistency in data collection.

Quality assessment / Risk of bias analysis Randomized Controlled Trials (RCTs) will be assessed using the Cochrane Risk of Bias Tool (RoB 2.0), examining factors such as selection bias, performance bias, and reporting bias.
Observational studies (cohort and case-control) will be evaluated using the Newcastle-Ottawa Scale (NOS).
Quasi-experimental studies will be assessed using the ROBINS-I tool for non-randomized studies.
Sensitivity analyses will be conducted to examine the robustness of findings by excluding high-risk bias studies.

Strategy of data synthesis A meta-analysis will be conducted if there are sufficient homogeneous studies with comparable interventions and outcome measures.
Data synthesis will include random-effects or fixed-effects models, depending on heterogeneity assessed using I^2 statistics and Cochran's Q test.
Standardized mean differences (SMD) and 95% confidence intervals (CI) will be used to measure effect sizes.
For studies where meta-analysis is not feasible due to heterogeneity, a narrative synthesis will be conducted to describe key findings, study characteristics, and intervention effectiveness.
Publication bias will be assessed using funnel plots and Egger's test.

Subgroup analysis Type of psychological intervention (e.g., cognitive restructuring vs. mindfulness vs. relaxation techniques).
Sport type (e.g., basketball vs. soccer vs. volleyball).
Athlete experience level (e.g., amateur vs. professional).
Intervention duration (short-term vs. long-term interventions).
Gender differences (male vs. female athletes).
These subgroup analyses will help identify whether specific interventions are more effective for certain groups of athletes.

Sensitivity analysis Sensitivity analyses will be performed to assess the robustness of findings by excluding studies at high risk of bias (identified using the Cochrane RoB 2.0 tool or Newcastle-Ottawa Scale).
We will test the impact of excluding small sample size studies or those with unclear intervention protocols.

Different statistical models (e.g., fixed-effects vs. random-effects) will be applied to determine whether effect estimates remain consistent.
If substantial heterogeneity is present ($I^2 > 50\%$), alternative subgrouping or transformation methods will be explored.
Studies with industry funding or potential conflicts of interest will be separately analyzed to assess bias impact.

Country(ies) involved Malaysia, China.

Keywords Psychological interventions; cognitive restructuring; mindfulness; self-talk; relaxation techniques; cognitive behavioral therapy; sports psychology; team sports; athlete performance; negative emotions; anxiety.

Contributions of each author

Author 1 - BOTAO LYU.
Email: gs69766@student.upm.edu.my
Author 2 - Kim Geok Soh.
Email: kims@upm.edu.my
Author 3 - Azhar Bin Yaacob.