Group counselling–based psychological skills training reduces competitive anxiety and enhances athletic performance among student-athletes

El entrenamiento en habilidades psicológicas basado en el asesoramiento grupal disminuye la ansiedad competitiva y mejora el rendimiento atlético en estudiantes deportistas

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Abstract

Introduction: Competitive anxiety is a common psychological challenge among student-athletes and may undermine performance consistency in educational sport settings. Although Psychological Skills Training (PST) has been widely used to improve emotional regulation and performance, its delivery through counselling-based group interventions remains underexamined in school and university sport programs.
Methods: This study aimed to examine the effectiveness of group counselling–based PST in reducing competitive anxiety and improving athletic performance among student-athletes. A quasi-experimental pretest–posttest control group design was conducted with 75 student-athletes involved in organized sport training. Participants were assigned to an experimental group receiving a six-week group counselling–based PST intervention or to a control group continuing regular training. Competitive anxiety was assessed using the Sport Anxiety Scale-2, while athletic performance was measured using a standardized performance index. Data were analyzed using Analysis of Covariance (ANCOVA).
Results: The findings showed that the intervention group demonstrated significantly lower competitive anxiety and significantly higher athletic performance than the control group. Large effect sizes were observed for both outcomes, indicating that the intervention produced meaningful psychological and performance-related benefits.
Conclusion: Group counselling–based PST appears to be an effective, accessible, and practical psychological intervention for student-athletes. Its integration into educational sport programs may strengthen psychological readiness and improve performance stability in competitive settings.

Keywords

Psychological skills training; group counselling; competitive anxiety; athletic performance student-athletes.

Resumen

Introducción: La ansiedad competitiva es un desafío psicológico frecuente entre los estudiantes deportistas y puede afectar la estabilidad del rendimiento en contextos deportivos educativos. Aunque el Entrenamiento en Habilidades Psicológicas (PST) se utiliza para mejorar la regulación emocional y el rendimiento, su aplicación mediante asesoramiento grupal sigue siendo poco estudiada en programas escolares y universitarios.
Métodos: Este estudio examinó la eficacia del PST basado en asesoramiento grupal para reducir la ansiedad competitiva y mejorar el rendimiento deportivo en estudiantes deportistas. Se empleó un diseño cuasi experimental de pretest–postest con grupo de control, con 75 estudiantes deportistas participantes en entrenamiento deportivo organizado. El grupo experimental recibió una intervención de PST basada en asesoramiento grupal durante seis semanas, mientras que el grupo de control continuó con su entrenamiento habitual. La ansiedad competitiva se evaluó mediante la Sport Anxiety Scale-2, y el rendimiento deportivo mediante un índice estandarizado de rendimiento. Los datos fueron analizados mediante ANCOVA.
Resultados: El grupo experimental mostró niveles significativamente más bajos de ansiedad competitiva y un rendimiento deportivo significativamente más alto que el grupo de control. Los tamaños del efecto fueron elevados en ambos resultados, lo que indica beneficios psicológicos y de rendimiento relevantes.
Conclusión: El PST basado en asesoramiento grupal constituye una intervención psicológica eficaz, accesible y práctica para estudiantes deportistas. Su integración en programas deportivos educativos puede fortalecer la preparación psicológica, favorecer la regulación emocional y mejorar la estabilidad del rendimiento en contextos competitivos.

Palabras clave

Entrenamiento en habilidades psicológicas; asesoramiento grupal; ansiedad competitiva; rendimiento deportivo; estudiantes deportistas.

Introduction

Participation in competitive sports requires not only physical preparation but also psychological readiness. Student-athletes frequently experience performance pressure arising from competition expectations, coach evaluation, academic demands, and fear of failure (Mao, 2025). These pressures commonly manifest as competitive anxiety, a multidimensional psychological response characterized by cognitive worry, somatic tension, and attentional disruption that may negatively affect athletic execution and performance consistency (Ong & Chua, 2021). Consistent with this perspective, recent research found that anxiety levels were significantly associated with athletic performance among adolescent athletes, emphasizing the importance of effective anxiety management in competitive sport settings (Dennis et al., 2023). Previous research has shown that excessive competitive anxiety interferes with concentration, decision-making accuracy, and motor coordination, ultimately reducing performance effectiveness during competition (Peng & Zhang, 2021).

Within sport psychology, psychological factors and mental skills are increasingly recognized as important contributors to athletic performance alongside physical and technical preparation (Lange-smith et al., 2024; Lochbaum et al., 2022). Athletes with effective emotional regulation and attentional control demonstrate greater performance stability under competitive pressure (Lulu, 2025). Consequently, Psychological Skills Training (PST) has become one of the most widely implemented psychological interventions in sport settings (Park, 2023). PST incorporates structured mental techniques including goal setting, relaxation training, imagery rehearsal, attentional focus regulation, and positive self-talk aimed at optimizing psychological functioning during training and competition (Park, 2023).

Empirical evidence consistently indicates that PST interventions contribute to anxiety regulation, confidence enhancement, and performance improvement among athletes (Li et al., 2025). However, most PST programs are traditionally delivered through individualized sport psychology consultation or coach-directed mental training approaches. Such delivery models may limit accessibility within educational sport environments, particularly in schools and universities where professional sport psychologists are not always available (Eckenrod & Kossman, 2025; Moreland et al., 2017). As a result, many student-athletes receive intensive physical preparation without systematic psychological training support (Sandars et al., 2022).

Previous research has demonstrated the effectiveness of Psychological Skills Training across various sport contexts, including basketball, athletics, soccer, and racket sports among both amateur and elite athletes. Studies have shown that techniques such as imagery rehearsal, attentional control, and self-talk contribute to anxiety reduction and performance enhancement under competitive conditions (Reinebo et al., 2024; Röthlin et al., 2020; Walter et al., 2019). Similar findings have also been reported in recent studies published in Retos, indicating that psychological skills training contributes to improved reaction time, strategic thinking, and competitive readiness among athletes (Edmizal et al., 2025). Although substantial evidence supports PST effectiveness in sport settings, most interventions have been implemented through coach-led or individualized approaches. Evidence regarding counselling-based group delivery within educational sport environments remains relatively limited. This limitation highlights an important gap concerning the feasibility of integrating PST into school and university counselling systems.

Educational and campus counselling services may provide a feasible platform for supporting student-athletes' psychological needs, particularly when referral pathways and service access are intentionally developed within school and university systems (Daltry et al., 2023). Group counselling offers advantages aligned with social learning mechanisms, including peer modelling, shared emotional experiences, and verbal reinforcement (Rihana et al., 2025). This is consistent with evidence showing that social support from parents, peers, and teachers is positively associated with students' psychological well-being, highlighting the importance of supportive educational environments for psychological development (Izzati et al., 2026). Recent counselling research has also demonstrated that structured counselling models delivered through systematic intervention stages can effectively improve psychological competencies among students. This evidence further supports the potential of counselling-based approaches as practical platforms for promoting psychological development in educational settings (Ramli et al., 2025). Through structured group interaction, student-athletes may develop more adaptive coping responses, benefit from peer support, and reduce anxiety related to competitive demands (Fogaca,

2021; Kara et al., 2023). From a social cognitive perspective, observational learning and social persuasion occurring within counselling groups can strengthen perceived competence and emotional regulation capacity (Metin & Dougan, 2023).

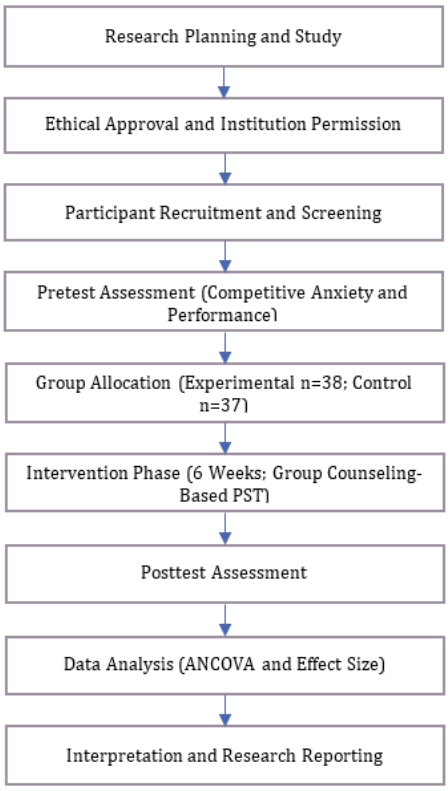
Although Psychological Skills Training has demonstrated effectiveness in reducing anxiety and enhancing athletic performance, limited empirical research has examined its implementation through structured counselling frameworks in educational sport environments. Most previous interventions rely on coach-led or individualized psychological training, leaving uncertainty regarding the effectiveness of counselling-based group delivery models. Addressing this gap is particularly important in contexts where access to professional sport psychologists remains limited. Accordingly, the present study aims to examine the effectiveness of group counselling-based Psychological Skills Training in reducing competitive anxiety and improving athletic performance among student-athletes. It was hypothesized that participants receiving the intervention would report lower competitive anxiety and achieve higher athletic performance than those who continued regular training without psychological intervention.

Method

Research Design

This study employed a quasi-experimental pre-test, post-test control group design to examine the effectiveness of Psychological Skills Training delivered through group counselling in reducing competitive anxiety and improving athletic performance among student-athletes. Participants were allocated into an experimental group receiving the psychological intervention and a control group that continued regular athletic training without additional psychological treatment. Measurements were conducted prior to the intervention and immediately following completion of the training program. The use of a control group and pre-test scores enabled evaluation of intervention effects while controlling for initial differences between participants (Madison & Bradshaw, 2018).

Figure 1. Research Design Flowchart

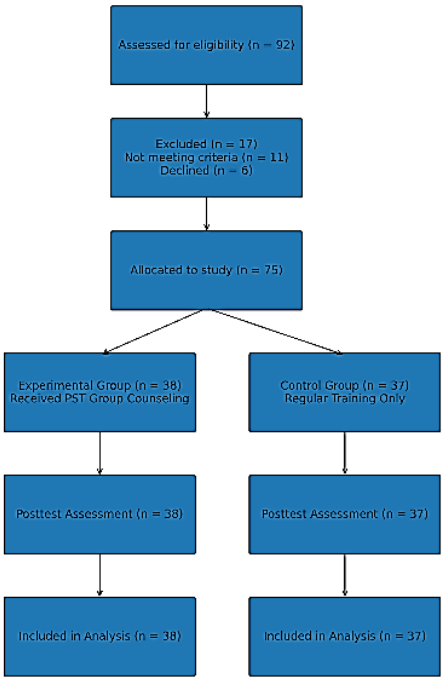


Participants

Participants consisted of seventy-five student-athletes aged between 16 and 23 years recruited from secondary school and university sport programs through purposive sampling procedures. All participants were actively engaged in organized sport training and were preparing for competitive events during the study period. The sample included 30 male athletes and 45 female athletes representing various sport disciplines such as athletics, badminton, basketball, and futsal. Participants were recruited from secondary school and university sport programs in Indonesia.

Eligibility criteria required participants to have participated in structured sport training for a minimum of six months and to maintain regular training schedules at least three times per week. Athletes experiencing injuries or prolonged absence from training during the intervention period were excluded to avoid performance bias. Participants were allocated into experimental and control groups using matched-group assignment procedures based on gender distribution and baseline performance scores to ensure comparable initial characteristics between groups. This allocation approach was applied to minimize selection bias while maintaining ecological validity within the educational sport setting.

Figure 2. Participant Flow Diagram of the Study



Instrument

Competitive anxiety was assessed using the Sport Anxiety Scale-2 (SAS-2), a widely validated instrument designed to measure sport-specific anxiety responses experienced before or during competition (Smith et al., 2006). The scale evaluates cognitive anxiety, somatic anxiety, and concentration disruption using a five-point Likert response format ranging from strongly disagree to strongly agree (Maestroni et al., 2023). Reliability analysis conducted in the present study demonstrated satisfactory internal consistency, with a Cronbach's alpha coefficient of .89.

Prior to implementation, the Sport Anxiety Scale-2 underwent translation and cultural adaptation procedures following established cross-cultural adaptation guidelines. Forward and backward translation procedures were conducted by bilingual experts to ensure conceptual equivalence. A pilot evaluation involving student-athletes was also conducted to assess item clarity and contextual appropriateness for the Indonesian setting.

Athletic performance was evaluated using a composite standardized performance index derived from objective sport performance indicators, with raw scores standardized into z-scores prior to analysis to enhance comparability across athletes (O'Donoghue, 2009). Performance assessments reflected technical execution quality, performance consistency during competition simulations, and task effectiveness relevant to each sport discipline. To ensure comparability across different sports, raw performance scores were standardized into z-scores prior to analysis. Inter-rater reliability analysis between coaches indicated strong agreement (ICC = .86), supporting measurement consistency.

Performance scores ranged from 0 to 100 and were calculated based on three evaluation components: technical execution accuracy (40%), performance consistency during simulated competition tasks (30%), and coach-rated task effectiveness (30%). Coaches used standardized evaluation rubrics developed collaboratively prior to assessment to ensure scoring consistency across sport disciplines.

Intervention Procedure

The experimental group participated in a Psychological Skills Training program delivered through structured group counselling sessions conducted over a six-week period. Counselling sessions were implemented weekly and lasted approximately ninety minutes per meeting. Participants were organized into small counselling groups consisting of eight to ten athletes to facilitate interaction, peer support, and experiential learning processes.

The intervention integrated core psychological skills commonly applied in sport psychology, including goal-setting strategies, relaxation and breathing regulation, mental imagery rehearsal, positive self-talk restructuring, attentional focus control, and competition coping preparation (Weinberg & Gould, 2023). Sessions combined psychoeducational components with guided practice, reflective discussion, and structured exercises to encourage the transfer of psychological skills into training and competition (Brown, 2018). Participants were also assigned structured psychological exercises between sessions to reinforce skill acquisition.

Athletes in the control group continued their regular physical and technical sport training programs without exposure to psychological skills instruction throughout the study period.

The counselling sessions were facilitated by a licensed school counsellor with formal training in sport psychology and group counselling interventions. The facilitator possessed more than five years of professional experience in counselling practice and received prior orientation regarding the Psychological Skills Training protocol to ensure standardized intervention delivery.

Table 1. Structure of the Group Counselling-Based PST Intervention Program

Session	Psychological Focus	Counselling Activities	Psychological Skills Targeted	Expected Outcomes
Session 1	Psychological awareness and goal setting	Introduction to competitive stress experiences, discussion of performance challenges, formulation of individual sport goals	Goal setting, self-awareness	Increased performance orientation and motivation
Session 2	Arousal regulation	Training in diaphragmatic breathing and progressive relaxation techniques	Relaxation control	Reduction of physiological tension and somatic anxiety
Session 3	Mental imagery training	Guided visualization of successful performance situations and competition rehearsal	Imagery rehearsal	Improved confidence and performance anticipation
Session 4	Cognitive restructuring	Identification of negative thoughts and development of positive self-talk statements	Self-talk regulation	Reduced cognitive anxiety and enhanced confidence
Session 5	Attention and concentration control	Focus training exercises and distraction management strategies	Attentional control	Improved concentration during performance
Session 6	Competition simulation and coping integration	Simulation of competitive scenarios and integration of learned psychological skills into performance routines	Psychological skill integration	Enhanced psychological readiness and performance stability

Intervention Fidelity

Implementation fidelity was monitored throughout the intervention using standardized session monitoring procedures completed by facilitators following each counselling meeting, consistent with recommended practices in intervention fidelity assessment (Bellg et al., 2004). Evaluation of adherence indicated that approximately 87% of planned intervention components were delivered consistently across sessions, suggesting high conformity with the Psychological Skills Training protocol.

Data Collection Procedure

Data collection was conducted following institutional approval and participant consent procedures. Pre-test assessments measuring competitive anxiety and athletic performance were administered prior to intervention implementation under standardized conditions. Following completion of the six-week training program, post-test measurements were collected using identical assessment procedures to ensure measurement consistency. All evaluations were conducted within participants' regular training environments to maintain ecological validity (Chang et al., 2022). To address ethical considerations, participants in the control group were offered access to Psychological Skills Training materials and counselling sessions after completion of data collection procedures.

Data Analysis

Statistical analyses were performed using IBM SPSS software. Descriptive statistics were calculated to summarize participant characteristics and study variables. Preliminary analyses included normality and homogeneity testing to verify assumptions for parametric analysis. Independent samples t-tests were conducted to examine baseline equivalence between experimental and control groups.

To determine intervention effectiveness, Analysis of Covariance (ANCOVA) was employed with post-test scores as dependent variables and corresponding pre-test scores entered as covariates (Khammar et al., 2020). Separate analyses were conducted for competitive anxiety and athletic performance outcomes. Effect sizes were calculated using partial eta squared (η^2), with values interpreted according to conventional benchmarks indicating small (.01), medium (.06), and large (.14) effects. Statistical significance was established at the .05 level (Cohen, 2013).

Prior to conducting ANCOVA, preliminary analytical procedures were considered to evaluate the appropriateness of the data for parametric analysis. These procedures included examination of baseline equivalence between groups, distributional characteristics of the study variables, and homogeneity assumptions. Particular attention was also given to the ANCOVA requirement that the relationship between the covariate and the dependent variable should be comparable across intervention groups. Therefore, the assumption of homogeneity of regression slopes was considered as part of the analytical framework before interpreting the intervention effects. ANCOVA was subsequently used to compare post-test outcomes between groups while controlling for corresponding pre-test scores.

Results

Participant Characteristics

A total of 75 student-athletes completed all stages of the study and were included in the final analysis. The sample consisted of 30 male athletes (40%) and 45 female athletes (60%) representing multiple sport disciplines. No participant withdrawal occurred during the intervention period, resulting in a retention rate of 100%.

Baseline Equivalence Between Groups

Prior to intervention analysis, baseline equivalence between the experimental and control groups was examined using independent samples t-tests. Results indicated no statistically significant differences in competitive anxiety or athletic performance at pre-test level, confirming comparable initial conditions between groups.

Table 2. Baseline equivalence between experimental and control groups

Variable	Group	Mean	SD	t	p
Competitive Anxiety	Experimental	58.42	7.91	0.38	.705
	Control	57.81	8.14		
Athletic Performance	Experimental	71.26	6.88	0.41	.682
	Control	70.74	7.02		

These findings indicate that both groups started from statistically equivalent psychological and performance conditions.

Preliminary Analytical Considerations

Prior to the main ANCOVA analyses, preliminary procedures were reviewed to support the suitability of the statistical approach. Baseline equivalence testing indicated that the experimental and control groups did not differ significantly in competitive anxiety or athletic performance before the intervention. This provided support for the comparability of the groups at pre-test level. In addition, the use of pre-test scores as covariates was intended to adjust for initial individual differences and strengthen the interpretation of post-test group comparisons. The ANCOVA results are therefore interpreted cautiously within the assumptions of the model.

Effect of Psychological Skills Training on Competitive Anxiety

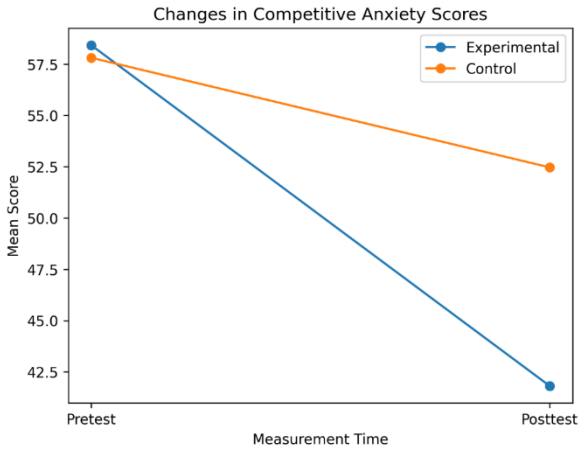
Analysis of Covariance (ANCOVA) was conducted using pre-test competitive anxiety scores as covariates to control for baseline differences between groups (Khammar et al., 2020). Results revealed a significant main effect of group on post-test competitive anxiety scores.

Table 3. ANCOVA results for competitive anxiety

Source	F	p	Partial η^2
Pre-test	15.21	.000	.17
Group	24.63	.000	.25

Adjusted mean comparisons demonstrated substantially lower anxiety levels in the experimental group (M = 41.82) compared with the control group (M = 52.47). The obtained effect size (η^2 = .25) indicates a large intervention effect. The adjusted mean difference between groups indicated a substantial reduction in competitive anxiety (Mean Difference = −10.65, 95% CI [−14.12, −7.18]).

Figure 3. Changes in Competitive Anxiety Scores



Effect of Psychological Skills Training on Athletic Performance

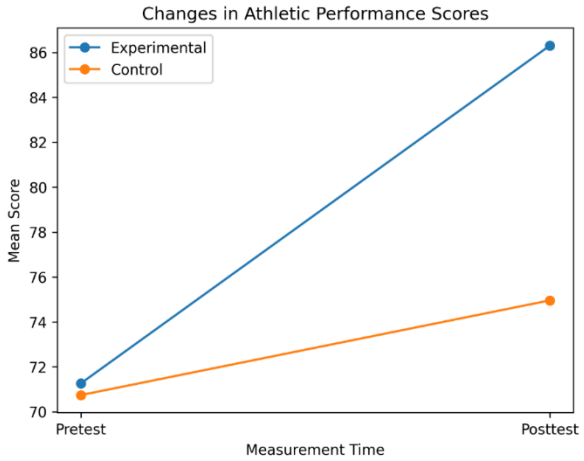
ANCOVA analysis controlling for baseline performance scores showed a statistically significant improvement in athletic performance among participants receiving the intervention. Mean Difference = 11.35, 95% CI [7.42, 15.28]

Table 4. ANCOVA results for athletic performance

Source	F	p	Partial η^2
Pre-test	13.44	.001	.15
Group	21.08	.000	.22

Adjusted post-test means indicated higher performance scores for the experimental group (M = 86.31) compared with the control group (M = 74.96). The effect size suggests a large practical impact of Psychological Skills Training delivered through group counselling.

Figure 4. Changes in Athletic Performance Scores



Changes in Competitive Anxiety and Performance

Descriptive comparisons between pre-test and post-test scores demonstrated a marked reduction in competitive anxiety alongside consistent performance improvement in the experimental group, whereas only minimal changes were observed in the control group. These findings confirm the effectiveness of the intervention across psychological and performance outcomes.

Discussion

The present study examined the effectiveness of Psychological Skills Training delivered through group counselling in reducing competitive anxiety and improving athletic performance among student-athletes. The findings demonstrated that participants who received the intervention experienced significantly lower levels of competitive anxiety alongside substantial improvements in performance outcomes compared with athletes who participated solely in regular physical training. These results support the growing recognition that psychological preparation constitutes a fundamental component of athletic success within educational sport environments (Singh, 2025).

The reduction in competitive anxiety observed in the experimental group may be explained through the psychological regulation mechanisms targeted during the intervention. Relaxation and breathing techniques likely contributed to decreased physiological arousal, enabling athletes to manage somatic tension commonly experienced prior to competition. Excessive arousal has long been associated with performance disruption, particularly in situations requiring precision and sustained concentration (Gee et al., 2024). By learning controlled breathing and relaxation strategies, participants were better able to maintain optimal activation levels during performance situations.

In addition, cognitive-oriented techniques such as self-talk restructuring and mental imagery appear to have strengthened athletes' cognitive control processes. Cognitive regulation strategies are also important in adolescent mental health interventions, as shifting from maladaptive rumination toward more adaptive cognitive reappraisal may support emotional control and reduce externally expressed psychological distress (Toding et al., 2026). Negative anticipatory thoughts and fear of failure frequently intensify competitive anxiety among young athletes. The replacement of maladaptive internal dialogue with performance-oriented self-statements may have enhanced confidence and reduced cognitive interference during task execution. Mental imagery rehearsal further allowed athletes to simulate successful performance experiences, thereby improving psychological readiness and perceived competence prior to competition (Walter et al., 2019).

From a theoretical perspective, the findings can be interpreted within the framework of Social Cognitive Theory, which emphasizes the role of self-regulatory processes, observational learning, and verbal persuasion in behavioral performance. The group counselling format facilitated shared learning experiences in which athletes observed peers managing similar competitive pressures. Such interaction likely strengthened efficacy beliefs through vicarious experience and social reinforcement mechanisms. Increased confidence and emotional regulation capacity subsequently translated into improved performance consistency (Kara et al., 2023).

The improvement in athletic performance identified in this study supports previous sport psychology research indicating that psychological skills function as performance stabilizers under competitive stress. Rather than directly enhancing physical ability, Psychological Skills Training optimizes attentional focus and emotional control, allowing athletes to utilize existing technical skills more effectively. This finding highlights that performance limitations among student-athletes are often psychological rather than physical in nature (Röthlin et al., 2020).

An important contribution of this study lies in demonstrating the feasibility of delivering Psychological Skills Training through counselling-based group interventions within educational settings. Traditional PST programs frequently depend on specialized sport psychologists, limiting accessibility in school and university contexts (Moreland et al., 2017; Neumann et al., 2024). Integrating psychological skills development into counselling services provides a scalable and cost-effective alternative capable of reaching larger athlete populations (Thrower et al., 2024). The counselling approach also promotes emotional openness and peer support, elements that may not emerge in coach-centered psychological instruction (Mao, 2025).

From an applied sport perspective, the results suggest that psychological training should be incorporated systematically alongside physical and technical preparation programs. School counselors, physical education teachers, and coaches may collaboratively implement structured group-based psychological interventions to enhance athletes' readiness for competition (Reinebo et al., 2024). Such integration supports a preventive approach in athlete development, emphasizing mental resilience before performance difficulties emerge (Schweickle et al., 2024). This recommendation is consistent with recent findings published in Retos highlighting the importance of coaches' communication and psychological understanding of athletes' conditions as a key factor supporting performance development (Purnomo et al., 2024).

Despite these promising findings, several limitations should be acknowledged. The inclusion of multiple sport disciplines may introduce variability in performance measurement despite score standardization procedures. Furthermore, the quasi-experimental design limits causal generalization compared with fully randomized trials. Another limitation concerns the reporting of statistical assumption testing. Although preliminary analytical procedures were considered before conducting ANCOVA, detailed diagnostic statistics for ANCOVA assumptions, including homogeneity of regression slopes, were not fully documented in the original analytical reporting. Future studies should provide more comprehensive reporting of diagnostic procedures to strengthen statistical transparency, reproducibility, and confidence in model interpretation. In addition, future research is encouraged to examine sport-specific applications, longitudinal intervention effects, and potential moderating variables such as competitive level or training experience.

Overall, the present findings reinforce the importance of psychological intervention within youth sport development and provide empirical support for counselling-based Psychological Skills Training as an

effective strategy for optimizing both emotional regulation and athletic performance among student-athletes (Lange-smith et al., 2024).

Recent sport psychology studies have emphasized the growing importance of structured psychological interventions in youth athlete development, particularly those targeting emotional regulation and attentional control under competitive pressure. Contemporary evidence suggests that psychological skills training contributes not only to anxiety reduction but also to sustained performance stability across competitive contexts (Ong & Chua, 2021). The present findings extend this literature by demonstrating that counselling-based delivery formats may provide an effective and accessible alternative for implementing psychological training within educational sport systems.

Practical Applications

The findings of this study provide practical implications for educational sport environments seeking effective strategies to enhance athlete psychological readiness. The integration of Psychological Skills Training within group counselling demonstrates that mental training can be systematically implemented without requiring specialized sport psychology services. School counsellors and physical education professionals may adopt structured group-based interventions to help student-athletes regulate competitive anxiety, improve concentration, and strengthen confidence prior to competition. This recommendation is particularly relevant because educational support systems play an important role in maintaining psychological functioning and wellbeing within helping professions, highlighting the value of structured psychological support in educational settings (Rahayu et al., 2026).

The counselling-based format also enables efficient delivery of psychological training to multiple athletes simultaneously, making it suitable for school and university sport programs with limited psychological support resources. Incorporating psychological skills sessions alongside regular physical training may contribute to more balanced athlete development by addressing emotional regulation and performance stability. Consequently, psychological preparation should be considered an essential component of athlete training programs rather than a supplementary activity applied only after performance problems arise.

Conclusions

This study found that Psychological Skills Training delivered through group counselling significantly reduced competitive anxiety and enhanced athletic performance among student-athletes. The findings indicate that counselling-based psychological training may serve as a practical and accessible intervention within educational sport programs. Accordingly, psychological preparation should be integrated with physical and technical training to support more comprehensive athlete development.

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