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The Comparison of Metacognitive group Intervention and group Acceptance Based Behavioral Therapy on Competitive Aggression of Anxious Professional Soccer Athletes in Tehran

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A B S T R A C T

The aim of present study was comparison of metacognitive group intervention and group acceptance based behavioral therapy on competitive aggression of anxious professional soccer players in U-19 league in Tehran. Participants in this study were 60 professional soccer players who were occupied in professional soccer leagues in Tehran. These participants were entered into the assessment stage and after obtaining informed consent, they randomly assigned in one of the three experiment groups MCT MAC, WL. The participants completed the Sport Aggression Styles Inventory in pre-test, post-test and 3 months follow-up stages. The results of present study demonstrate that MCT and MAC can make some changes in aggression styles of anxious soccer players. MCT have been affecting on passive-aggressive and somatic aggression styles. In addition, MAC have been affecting on sadistic and masochistic aggression styles. According to these findings, it would ensure that soccer players affected by anxiety and aggression-related problems get the opportunity to gain advantages from such third wave's interventions.

Keywords: *Metacognitive Therapy, Acceptance based Behavior Therapy, Mindfulness Acceptance Commitment, Aggression Styles, Soccer Players.*

1. Introduction

Aggression is any verbal or physical behavior arising from the emotion of anger that results in destructive outcomes, whether intended or unintended (1). On the other hand, deliberate aggression aimed at causing harm is referred to as violence and can manifest physically, sexually, or psychologically (2). Aggressive behaviors can be active or passive and directed towards oneself or others (3). In athletes, we sometimes witness aggressive behaviors that can affect both individual and team performance (4).

Several factors influence aggression and the intensity of anger perceived by individuals. These factors include emotional intelligence (5), hardiness (6), and personality (7). There are various personality theories, but Millon is

among the few individuals who presents his personality theory based on clinical patterns and expands it in an evolutionary perspective. In his personality theory, Millon discusses four polarities: 1- Existential Goal: pain-pleasure polarity; 2- Adaptive Modality: active-passive polarity; 3- Replication Strategies: self-others polarity; 4- Abstract Processes: thought-feeling polarity (8-13). In the research by Alavizadeh et al. (2022), based on adaptation style and repetitive strategies, four styles of anger were predicted. These four aggression styles include sadism, masochism, passive-aggressive, and physical aggression (3).

According to the evolutionary perspective, anger is a common emotion and a usual reaction to frustration and maltreatment; however, all individuals encounter anger-inducing situations throughout their lives (14, 15). Aggressive behavior may occur in anyone, including athletes (16). When an athlete finds themselves in a competitive situation, given the conditions of the competition and the expectation of superiority, they may experience high psychological pressure, become anxious, and subsequently engage in aggression (3, 17). Such behavior by the athlete can lead to unpleasant consequences for them and create individual and social financial, psychological, and professional consequences (18). Aggression in the realm of sports manifests instrumentally, reflectively, verbally, and physically and is exhibited by individuals present and participating in sports events towards themselves, other players, spectators, coaches, sports officials, the general public, and property (1, 19). As stated, evolutionarily, anger is a common emotion and a usual reaction to frustration and maltreatment; however, not all individuals exhibit aggressive behaviors. Numerous researches have reported that aggression is not a universal phenomenon but that aggressive behaviors manifest based on different styles (3, 4, 19-23).

Many studies have been conducted regarding competitive anxiety and emotions in athletes. There are various methods for reducing arousal and anxiety, aggression, generally categorized into two types: physical and cognitive methods (24-26). Traditionally, physical methods include progressive muscle relaxation, breathing exercises, and biofeedback; cognitive methods include imagery, goal setting, internal dialogue, meditation, and mindfulness. Therapeutic approaches and methods such as humanistic/person-centered (27), existential psychology (28), positive psychology (29), psychodynamic therapies (30), life skills training, family systems interventions, approaches based on Eastern philosophy (31, 32), acceptance-based behavioral therapy (33-36), cognitive-behavioral therapy (25), and metacognitive therapy (24) have been applied in the sports context. Research literature in the field of consequential research shows that cognitive-behavioral therapy is an effective intervention (37). However, this intervention is only relatively effective. Meta-analysis of consequential research based on this program shows a very minimal effect size on aggressive behavior; and this intervention is less effective in anger management compared to clinical situations such as depression and anxiety (22, 23). Researchers in this study have conducted a comparative examination of two intervention methods: metacognitive therapy and mindfulness-acceptance-commitment treatment as one of the acceptance-based behavioral therapies.

The metacognitive model examines the role of metacognitions with emotions such as depression, anxiety, and fear. According to this model, a triggering stimulus activates positive metabeliefs, and the person chooses coping strategies to confront the triggering stimulus (38). This stage causes the person to become worried; this worry is healthy and does not create a problem because it makes the person believe that this worry is effective and keeps them away from danger; this worry is also called type one worry; emotions develop when negative thoughts about worry are activated; two types of negative thoughts about worry are being uncontrollable and harmful and dangerous; these negative thoughts cause the person to worry about their worry, called type two worry or meta-worry; this meta-worry affects behavioral, emotional, and cognitive symptoms reciprocally (39-42); and causes the person to show emotional symptoms. Metacognitive therapy, based on the metacognitive model, addresses the rectification of cognitive biases. This rectification, based on the improvement of the cognitive attention syndrome, reduces cognitive biases through the improvement of threat monitoring process (43).

Acceptance and Commitment Therapy (ACT) makes extensive use of acceptance and mindfulness processes as well as commitment and behavior change processes with the aim of creating greater psychological flexibility (44, 45). It has demonstrated suitable efficacy as an intervention for various types of clinical problems such as depression, eating and feeding disorders, generalized anxiety disorder, substance misuse and dependence, and borderline personality disorder (46). These revolutionary theoretical developments and associated interventions have not received much attention in the field of sports performance.

Health Nexus
E-ISSN: 2981-2569

Particularly in sports psychology, the mindfulness-acceptance-commitment approach to performance enhancement, developed by Gardner & Moore in 2001, is an acceptance-based intervention aimed at promoting high-level competitive performance and overall psychological well-being (33-36). Dogan (2016) at the University of Jyväskylä, Finland, reported in a case study that a program based on acceptance, commitment, and mindfulness was effective in influencing athletes' performance perception (47). In Iran, Alavizadeh and colleagues (2020) have also reported case studies on the effectiveness of metacognitive and acceptance and commitment-based interventions in reducing physical and cognitive competitive anxiety and increasing confidence and improving attention indices in football goalkeepers (24). The purpose of this study was to compare the group intervention based on metacognitive therapy and the mindfulness-acceptance-commitment program as a group-based acceptance behavioral therapy on sports aggression and professional football players with competitive anxiety in Tehran.

2. Methods and Materials

2.1. Study Design and Participants

This study was a quasi-experimental design featuring a pre-test, post-test, and a three-month follow-up period, with a control group. Random allocation was used for the peer groups. The statistical population included all professional football athletes in the U-19 league of Tehran province for the 2017-2018 season. The sampling method was judgmental sampling. Entry criteria included being employed in one of the U-19 league teams of Tehran province, having a minimum of a diploma education, scoring above 15 on the cognitive anxiety subscale and above 12 on the somatic anxiety subscale of the Competitive State Anxiety Inventory-2, being right-handed, and exclusion criteria included undergoing concurrent psychiatric or psychological treatments, having chronic mental disorders (substance abuse or schizophrenia spectrum disorders). In this study, one session of absence was set as the criterion for dropout. After obtaining informed consent, participants entered the randomization stage and were randomly assigned to one of the two intervention groups, metacognitive therapy and acceptance-based behavioral group therapy, or a control control group; each group consisted of 20 individuals. Randomization was done covertly using random number generation in Microsoft Excel. The number of sessions for metacognitive therapy and acceptance-based behavioral therapy was seven sessions (two sessions per week, totaling four weeks) and each session lasted 90 minutes. After the intervention period, participants completed the Sport Aggression Styles Inventory in the post-test phase; finally, after three months, the final assessments were conducted.

2.2. Measures

2.2.1. Competitive State Anxiety Inventory-2 (CSAI-2)

This 27-item test, also known as the Illinois Self-Evaluation Questionnaire, was developed by Martens, Vealey, Burton, Bump, and Smith (1990) and measures the physical and cognitive components of state anxiety (48). Its validity and reliability have been confirmed in various foreign and domestic studies (49). Martens et al. (1990) reported the internal consistency reliability coefficient of this questionnaire using Cronbach's alpha from 0.79 to 0.91 (48). Zamani and Moradi (2009) reported this coefficient as 0.81 (50).

2.2.2. Sport Aggression Styles Inventory

It was developed and standardized by Alavizadeh et al. (2022). This test consists of 20 questions answered with 'yes' or 'no'. Their research showed that this questionnaire has good internal consistency, as determined by Cronbach's alpha for the subscales of other-directed (active external) 0.62, passive-aggressive (external passive) 0.84, self-harm (internal active) 0.84, and physical aggression (internal passive) 0.82. The four-factor model of this questionnaire has also been confirmed. The reliability coefficient over a two-week interval for the components ranged from 0.70 to 0.81. Ultimately, the results indicated that the Sport Aggression Styles Inventory has acceptable convergent validity, discriminant validity, and composite reliability (3).

2.3. Therapist

A clinical sports psychologist with ten years of clinical and sports experience who had participated in metacognitive therapy and acceptance and commitment therapy courses was selected for this study. The therapist had undergone training by prominent national and international specialists.

Health Nexus
E-ISSN: 2981-2569

2.4. *Interventions*

2.4.1. *Metacognitive Therapy*

The Metacognitive Therapy for Anxiety (27, 39-42) was the primary source of metacognitive intervention in this study. It serves as a guide for the structure and content of sessions and can be flexibly adapted based on individual and group conditions (Wells, 2009). The structure of these sessions is reported in Table 1:

Table 1

Results of Descriptive Statistics

Session	Session Title	Session Content
1	Induction	Inducing metacognitive style
2	Control Challenge	Challenging metacognitive beliefs about uncontrollability of worry and anger
3	Risk Challenge	Challenging metacognitive beliefs about the danger of worry and anger
4	Positive Metacognition Challenge	Challenging positive metacognitive beliefs about the danger of worry and anger
5	Strengthening	Reinforcing new programs for processing worry and anger
6	Prevention	Preventing relapse
7	Ending	Familiarization with the metacognitive model and competitive anxiety, anger, sports aggression, and violence

2.4.2. *Acceptance and Commitment Behavioral Therapy*

ACT is a semi-structured program that utilizes various techniques to foster the acceptance of internal states by athletes, enabling them to focus on stimuli and tasks in the present moment to achieve meaningful values and goals (33-36, 47). This program typically lasts between 7 to 12 sessions (51). The original 8-session fixed format of the Acceptance and Commitment Therapy Guide was revised to a flexible 7-session format, allowing each module to be delivered over any number of required sessions (33-36). The ACT intervention protocol facilitates enhanced effective performance and generally promotes psychological well-being and overall health (36). The structure of these sessions is reported in Table 2:

Table 2

Structure of Acceptance and Commitment Therapy (ACT) Sessions

Session	Session Title	Session Content
1	Preparation	Preparing the group with concepts of competitive anxiety, anger, sports aggression, and violence
2	Mindfulness	Introducing mindfulness and cognitive defusion
3	Values	Introducing values and behavior-guiding values
4	Acceptance	Introducing acceptance
5	Commitment	Enhancing commitment
6	Balance	Strengthening balance and stability, combining mindfulness, acceptance, and commitment
7	Maintenance	Enhancing and maintaining mindfulness, acceptance, and commitment

2.5. *Ethical Considerations*

In clinical psychology research (including interventions, treatment, assessment, diagnosis, and pathology), special attention should be paid to ethical considerations (52). Utilizing ethical considerations in the scientific literature and professional researches and deductive theories is challenging; however, this does not mean that flexibility should be applied to ethical standards. In this research, ethical considerations have been meticulously observed, and informed consent was obtained from the participants. Informed consent included information about intervention methods, sampling methods, random allocation, the number and duration of sessions, confidentiality, participants' privacy, awareness of treatment outcomes, and the right to withdraw from the research at any time desired; written consent was taken from them (53).

2.6. *Data Analysis*

In this research, in addition to reporting descriptive statistics, inferential statistical methods were used. Given the research design, repeated measurements method was utilized for data analysis in the follow-up stage. Data were analyzed in the SPSS-21 environment.

Health Nexus
E-ISSN: 2981-2569

3. Findings

Table 3 presents the means and standard deviations of demographic features based on independent variables and the initial comparison between the experimental and control groups.

Table 3

Demographic Characteristics of Participants in the Research

Feature	Control Group	MCT Group	MAC Group	Total	F/χ2	P
Age	17.85 (0.81)	18.25 (0.75)	18.15 (0.74)	18.08 (0.77)	1.504	0.231
Cognitive Anxiety	23.50 (4.35)	23.45 (5.44)	21.85 (4.61)	22.93 (4.80)	0.757	0.474
Somatic Anxiety	16.15 (3.30)	17.60 (4.99)	17.50 (4.41)	17.08 (4.27)	0.713	0.494
Playing Position	-	-	-	-	0.485	0.785

As observed in Table 3, there were no significant differences between the three groups in the pre-test phase in terms of age (p = 0.23, f = 1.50), level of cognitive anxiety (p = 0.47, f = 0.76), somatic anxiety (p = 0.49, f = 0.71), and playing position (p = 0.78, chi-square = 0.48). To conduct each of the statistical methods, statistical assumptions are also required, which are briefly reported in Table 4.

Table 4

Checking the Assumption of Analysis of Variance Test

Tests for Equality of Variances and Comparison of Pretest Mean Measurements of the Two Experimental and Control Groups

Variable	Skewness	Kurtosis	k-s	P	Box's M	F	p	Levene's Test p
Sadism	0.04	-0.60	1.37	0.05	27.86	2.14	0.02	0.44
Masochism	0.03	-0.84	1.30	0.07	13.02	1.00	0.44	0.99
Passive-aggressive	-0.36	-0.22	1.90	0.10	78.09	6.01	0.01	0.06
Physical	0.29	-0.62	1.66	0.08	14.45	1.11	0.34	0.87

According to the results of Table 4, it is observed that the data have a normal distribution, and there is no significant difference in the variances of pre-test dependent variables of both experimental and control groups, hence conditions for conducting statistical analyses are established.

In Table 5, means, standard deviations, and results of the analysis of variance of aggressive styles in sports at the pre-test, post-test, and as well as repeated measurements in the follow-up phase along with the means and standard deviations of each of these sub-components separately at different measurement stages are observed.

Table 5

Analysis of Variance, Covariance, and Repeated Measurement of Sports Aggression Styles in Pre-test, Post-test, and 3-Month Follow-up

Scale	Stage	Control Group	MCT Group	MAC Group	F	P	η²	Pairwise Comparisons
Sadism	Pre-Test	2.65 (1.137)	2.55 (1.261)	2.55 (1.395)	0.073	0.93	-	MCT vs. MAC: p=0.93, MCT vs. Control: p=0.99, MAC vs. Control: p=0.97
	Post-Test	2.60 (1.095)	2.45 (0.759)	1.60 (0.883)	6.829	0.01	-	MCT vs. MAC: p=0.88, MCT vs. Control: p=0.02, MAC vs. Control: p=0.01
	Follow-Up	2.65 (1.348)	2.30 (0.923)	1.50 (0.889)	4.047	0.03	0.12	MCT vs. MAC: p=0.11, MCT vs. Control: p=0.87, MAC vs. Control: p=0.04
Masochism	Pre-Test	2.50 (0.192)	2.55 (1.356)	2.60 (1.046)	0.034	0.97	-	MCT vs. MAC: p=0.99, MCT vs. Control: p=0.99, MAC vs. Control: p=0.97
	Post-Test	2.60 (0.940)	2.40 (0.995)	1.55 (0.826)	7.299	0.01	-	MCT vs. MAC: p=0.02, MCT vs. Control: p=0.80, MAC vs. Control: p=0.01
	Follow-Up	2.65 (1.182)	2.30 (0.979)	1.60 (0.598)	3.684	0.04	0.11	MCT vs. MAC: p=0.16, MCT vs. Control: p=0.81, MAC vs. Control: p=0.04
Passive-Aggressive	Pre-Test	3.00 (1.124)	2.75 (1.164)	2.60 (0.995)	0.679	0.51	-	MCT vs. MAC: p=0.91, MCT vs. Control: p=0.77, MAC vs. Control: p=0.52

Health Nexus
E-ISSN: 2981-2569

	Post-Test	2.90 (1.210)	2.10 (0.788)	2.50 (0.889)	3.341	0.05	-	MCT vs. MAC: p=0.44, MCT vs. Control: p=0.05, MAC vs. Control: p=0.44
	Follow-Up	2.80 (1.196)	2.05 (0.826)	2.45 (0.826)	3.835	0.03	0.12	MCT vs. MAC: p=0.62, MCT vs. Control: p=0.03, MAC vs. Control: p=0.23
Physical	Pre-Test	2.80 (1.196)	2.90 (1.071)	2.65 (1.040)	0.260	0.77	-	MCT vs. MAC: p=0.78, MCT vs. Control: p=0.96, MAC vs. Control: p=0.92
	Post-Test	2.75 (1.118)	1.80 (0.834)	2.20 (1.281)	3.806	0.03	-	MCT vs. MAC: p=0.52, MCT vs. Control: p=0.03, MAC vs. Control: p=0.29
	Follow-Up	2.80 (1.240)	1.75 (1.020)	2.25 (1.118)	3.459	0.04	0.11	MCT vs. MAC: p=0.69, MCT vs. Control: p=0.05, MAC vs. Control: p=0.25

As seen in Table 5, the results of the one-way ANOVA between groups in the pre-test phase in the sub-components of other-directed aggression (p = 0.93, f = 0.07), masochism aggression (p = 0.97, f = 0.03), passive-aggressive aggression (p = 0.51, f = 0.068), and physical aggression (p = 0.77, f = 0.26) indicate no significant differences between the groups under study. Furthermore, the results of the one-way ANCOVA between groups in the post-test phase and, finally, the results of the repeated measures ANOVA in the follow-up phase are observable. The pre-test results in the sub-components of other-directed aggression (p = 0.03, f = 5.04, eta squared = 0.12), masochism aggression (p = 0.03, f = 3.68, eta squared = 0.11), passive-aggressive aggression (p = 0.04, f = 3.84, eta squared = 0.12), and physical aggression (p = 0.04, f = 3.46, eta squared = 0.11) indicate significant differences between the groups under study. Pairwise comparisons showed that the mindfulness-based acceptance and commitment intervention was more effective in reducing other-directed and masochism aggression styles compared to the other groups, and the metacognitive-based intervention was more effective in reducing passive-aggressive and physical aggression compared to the other groups.

4. Discussion

The purpose of this study was to compare group-based interventions on metacognitive therapy and the mindfulness-acceptance-commitment program as an acceptance-based group behavioral therapy on the aggression in professional football athletes in Tehran. The findings show that these two third-wave behavioral interventions have the capacity to reduce various styles of aggression in professional football athletes, but there is no significant difference between these treatment methods in reducing aggression among professional football players. The only observed difference in the posttest phase was in the masochism aggression style. Accordingly, mindfulness-based on acceptance and commitment intervention was more effective in reducing sadism and masochism aggression styles compared to the control group. Also, the intervention based on metacognitive therapy was more effective in reducing passive-aggressive and physical aggression compared to other groups. These findings are supported by several researches; for example, Galle Girian and Direh (2017), have reported metacognitive therapy as effective in reducing aggression as an externalizing problem (26). Also, several researchers reported that acceptance and commitment therapy had been effective in reducing anger and aggression (21-23, 54, 55).

In general, it can be explained that during aggression, information that is subject to metacognitive monitoring is often experienced as mental feelings, and these mental feelings can impact behavior. These impacts are exerted in mental processing before they manifest in behavior (26). Individuals with passive aggression styles (passive-aggressive and physical aggressor) often experience their thoughts along with rumination. These individuals have both positive and negative metacognitive beliefs about these ruminations, which align with the model of autonomous executive functioning (41, 42). It may be suggested that because metacognition oversees cognition, the method of processing and organizing thoughts through modification of the primary components of the cognitive attention syndrome, including persistent worry, responding to negative thoughts, suppressing thoughts, and avoidance (39-42). As individuals evolve in cognitive process, metacognitive knowledge also undergoes a similar evolutionary process, and the impact of metacognitive knowledge on learning, cognitive processing, ways of organizing thinking, and expressing emotions and behaviors often occurs automatically (56, 57). In such a way that these individuals in learning, cognitive processing, and behavioral methods, by employing this knowledge, have gained sufficient mastery over their learning methods and how they express emotions and behavior. However, in individuals with aggression, unlike normative individuals, the metacognitive process does not occur automatically; therefore, teaching metacognitive knowledge, which is a

Health Nexus
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supervisory process, helps them to think before thinking another thought, a process that also occurs in normative individuals. This process helps aggressive individuals benefit more from behavioral inhibition and results in reducing aggressive problems (26, 58).

Moreover, the results showed that the mindfulness-acceptance-commitment program as an acceptance-based group behavioral therapy was effective on the active styles of sports aggression (sadism and masochism) of professional football players in Tehran. From the acceptance and commitment-based viewpoint, an individual's ability to accept unwanted internal experiences and participate in value-driven behaviors can be more effective over time and as long as such skills are repeatedly practiced, leading to the reduction of relational problems including active aggressions. These findings are consistent with previous research on acceptance and commitment-based interventions indicating that the effects of the treatment remained in follow-up (21-23, 59-61). In explaining this perspective, it can be assumed that the acceptance and commitment-based viewpoint causes a reduction in experiential avoidance, that is, the reluctance to experience unpleasant feelings and thoughts (55), and changes in this process have played a role in the obtained results. These results are consistent with other studies that have shown that reducing experiential avoidance improves test anxiety (62, 63), depression (38), work stress, chronic pain, and nicotine addiction (60). There are significant researches in this area, one of the most prominent identified factors in aggression being difficulty in coping and dealing with negative emotions (64), so much so that many researchers consider aggression as an attempt to regulate or avoid negative emotions (65). Furthermore, there is growing evidence that experiential avoidance and lack of emotional skills are associated with aggressive behaviors (23, 66). According to these researches, the aggression model shows that experiential avoidance leads to the continuation and intensification of discomfort and increases the potential for aggressive behaviors. Since aggression leads to short-term ease, this ease reinforces aggression and increases the likelihood of repeated aggression until it eventually becomes an automatic reaction to any sign of discomfort (23, 66). On the other hand, defusion in acceptance and commitment-based therapies means taking a step back and being an observer of thoughts, which causes thoughts to be just thoughts and not absolute reality (67). The aim of this method is to change the context in which thoughts occur to diminish the effect and significance of difficult personal events (44). After removing mental barriers and changing the context of thoughts, a behavioral path for maintaining and creating specific behavioral commitments is necessary. In terms of actively aggressive behaviors, improvement in social functioning leads to increased self-reflection, self-awareness, emotional regulation, personal care behaviors, and reduced emotional reactivity (22, 23) through increased personal monitoring, which ultimately leads to a reduction in active aggressions (sadism and masochism).

5. Conclusion

According to the findings of this research, it can be concluded that group-based interventions on metacognitive therapy and mindfulness-acceptance-commitment program as an acceptance-based group behavioral therapy can be effective on sports aggression of professional football players as third-generation behavioral therapy interventions. Although this effectiveness is different based on the adaptive dimension, that is, being active or inactive or passive.

The study's limitations include reliance on self-report measures, which might be subject to response biases. The sample was exclusively drawn from professional football athletes in Tehran, which limits the generalizability of the findings to other sports or regions. The study's duration, with a three-month follow-up, may not suffice to observe long-term effects of the interventions. Additionally, the study did not account for individual differences in psychological traits that might influence the response to treatment, nor did it control for concurrent psychological or physical training the athletes might have been receiving.

Future research should consider a broader demographic, including athletes from various sports and regions, to enhance the generalizability of the results. A longer follow-up period is suggested to observe the sustained effects of metacognitive therapy and acceptance and commitment therapy. Incorporating objective measures alongside self-reported questionnaires can provide a more comprehensive understanding of the impact of interventions. Research could also explore the individual differences in psychological resilience or susceptibility to aggression, providing a more tailored approach to therapy. Investigating the interaction effects with other forms of psychological or physical training might offer insights into how concurrent training can influence the outcomes.

Health Nexus
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Ultimately, the implications of this study underscore the potential of metacognitive therapy and acceptance and commitment therapy in reducing competitive anxiety and aggressive behaviors in professional athletes. Such interventions can be integrated into athletes' regular psychological training programs to enhance mental resilience, focus, and overall performance. Sports psychologists, coaches, and trainers might consider these therapeutic approaches as part of a comprehensive strategy to promote well-being and optimize performance among athletes. The findings also suggest that sports governing bodies and team managers might invest in psychological support services, including tailored aggression management programs, to foster a healthier, more productive sporting environment. As mental health continues to gain recognition as crucial to athletes' overall performance and well-being, such research contributes valuable insights into effective strategies for mental training and athlete support.

Authors' Contributions

S. M. A.: Conceptualization of the study, Methodology design, Execution and supervision of the research, Writing and manuscript preparation; N. S. G: Participant recruitment and informed consent procedures, Random assignment of participants to experimental groups, Data collection and management, Contribution to data analysis and interpretation; S. E.: Administration of the Sport Aggression Styles Inventory, Data collection in pre-test, post-test, and follow-up stages, Contribution to data management and analysis, Collaboration in drawing meaningful conclusions; F. M.: Interpretation of study findings, Analysis of effects on various aggression styles, Contribution to discussion and implications, Ensuring comprehensive articulation of research results and implications.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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Health Nexus
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Health Nexus
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