

The Effect of a Proposed Psychological Training Program on Reducing Competitive Anxiety and Developing Psychological Hardiness among First-Division Handball Players

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ABSTRAK

Penelitian ini menyelidiki efektivitas program pelatihan psikologis selama 10 minggu terhadap penurunan kecemasan kompetitif dan pengembangan ketangguhan mental pada pemain bola tangan divisi pertama di Klub Olahraga Al-Taawoun selama musim 2025–2026. Menggunakan metode eksperimen dengan desain kelompok kontrol *pretest-posttest* ekuivalen, peneliti mengevaluasi sampel sebanyak 22 pemain yang dibagi secara merata ke dalam kelompok eksperimen dan kontrol (masing-masing 11 orang). Kelompok eksperimen mengikuti sesi terstruktur tiga kali seminggu berdurasi 45 menit, yang mencakup relaksasi otot progresif, citra mental, pengaturan pernapasan, *self-talk* positif, penetapan tujuan, latihan konsentrasi, dan pelatihan *mindfulness*. Pengumpulan data menggunakan kuesioner kecemasan kompetitif Martens dan kuesioner ketangguhan mental Sheard. Hasil statistik menunjukkan peningkatan yang signifikan, dengan perbedaan mencolok antara skor *pretest* dan *posttest* pada kelompok eksperimen, serta hasil *posttest* yang lebih unggul dibandingkan kelompok kontrol. Penelitian ini menyimpulkan bahwa integrasi intervensi psikologis ke dalam sistem latihan bola tangan sangat efektif dalam meredakan kecemasan kompetitif dan membangun ketangguhan mental, serta direkomendasikan untuk diterapkan di klub-klub olahraga kompetitif.

Kata kunci: Program pelatihan psikologis, Kecemasan kompetitif, Ketangguhan mental, Bola tangan.

ABSTRACT

This study investigated the effectiveness of a proposed 10-week psychological training program on reducing competitive anxiety and developing psychological hardiness among first-division handball players at Al-Taawoun Sports Club during the 2025–2026 season. Employing an experimental method with an equivalent pretest-posttest control group design, the researcher evaluated a sample of 22 players equally divided into experimental and control groups ($n = 11$ each). The experimental group participated in structured sessions three times a week lasting 45 minutes each incorporating progressive muscle relaxation, mental imagery, breathing regulation, positive self-talk, goal setting, concentration exercises, and mindfulness training. Data were collected using Martens' Competitive State Anxiety Inventory-2 and Sheard's Sports Mental Toughness Questionnaire. The statistical results revealed significant improvements, showing marked differences between the pretest and posttest scores of the experimental group, as well as superior posttest outcomes compared to the control group. The study concludes that integrating such psychological interventions into comprehensive handball training systems is highly effective in mitigating competitive anxiety and building mental toughness, and recommends its implementation across competitive sports clubs.

Keywords: *psychological training program, competitive anxiety, psychological hardiness.*

INTRODUCTION

Sports psychology is one of the major fields that has undergone rapid development over recent decades. Its scientific contributions have increasingly played a direct role in enhancing athletic performance and improving athletes' ability to cope with the psychological demands of modern competition. Recent research indicates that successful athletic performance is not determined solely by physical, technical, and tactical abilities, but is also substantially influenced by athletes' psychological skills, emotional regulation, and capacity to manage stress during competitive (Robazza et al., 2023; Zhang et al., 2024). In particular, emotional regulation has been identified as an important psychological process that enables athletes to manage competitive pressure, regulate negative emotional responses, and maintain optimal functioning during performance (Robazza et al., 2023). Psychological skills training has likewise been recognized as an important component of preparation for high-performance sport, particularly through the development of skills such as attentional control, self-talk, goal setting, visualization, and competition planning (Zhang et al., 2024).

Handball is a fast-paced team sport that requires athletes to maintain a high level of mental alertness and make accurate decisions within very short periods of time, while continuously adapting to changing offensive and defensive situations throughout a match (Di Domenico et al., 2023). These demands become particularly relevant at higher levels of competition, where athletes are required to cope not only with the technical and tactical demands of the game but also with psychological pressure associated with competitive expectations. Recent research involving team-handball players has demonstrated that athletes may experience competitive anxiety in response to pressures arising from competition, coaches and teammates, spectators, and expectations concerning performance outcomes (Wang et al., 2024). Such pressures may affect athletes' psychological functioning and are therefore relevant to understanding the

need for systematic psychological preparation among competitive handball players.

Competitive anxiety is defined as a multidimensional psychological state characterized by negative expectations, tension, and confusion experienced by athletes before and during competition. This state comprises three principal dimensions within Martens' multidimensional framework of competitive anxiety: cognitive anxiety, somatic anxiety, and self-confidence (Martens et al., 1990). In contrast, psychological hardiness represents a positive personality characteristic that enables athletes to cope effectively with stressful situations. Sheard et al. (2009) conceptualized psychological hardiness in terms of three dimensions: control, constancy, and confidence.

Psychological hardiness not necessarily something that person have permanently from beginning. Study by Gucciardi (2017) and Sheard (2013) explain that hardiness can improve through psychological training that plan and carry out properly. Same kind of program may also help athlete manage competitive anxiety within its different form. Within Iraqi handball, Al-Janabi and Al-Saadi (2021) find clear psychological difference between team that win and team that lose within Iraqi league. This finding give another reason for giving more attention toward psychological preparation, especially for first-division handball player who have to deal with competitive pressure during important match.

Study develop not only for discuss psychological training within theory but also for apply it directly toward first-division handball player within Iraq. A psychological training program prepare specifically for this group and its effectiveness then test through experimental design. Study focus toward Al-Taawoun Sports Club, which take part within Iraqi first-division handball competition and include player competing at relatively advance level. Result expect for add more information toward sports psychology research within Iraq and may also encourage coach for give psychological preparation larger place within normal training process. This important because physical, technical, plus tactical preparation alone may not enough when athlete have to perform under strong pressure. Recent evidence also suggest that psychological intervention can support athlete psychological functioning and performance,

although size of effect can become different depend toward type of intervention, outcome being measure, plus quality of research design Reinebo et al., 2024; Mühlbauer et al., 2023).

During handball match, player do not only need physical ability and technical skill. They also have to stay focus, manage emotion, plus keep perform when situation become difficult. This become more important during critical moment of game, when one mistake can change result. Research on team-handball player have show that competitive anxiety can relate toward psychosocial condition around team, including coaching behavior, team cohesion, and achievement goal (Wang et al., 2024). During observation of first-division player at Al-Taawoun Sports Club and several other club, researcher notice that some player do not always show same level of performance during important part of match. Their performance sometimes decrease together with sign of tension and anxiety. These reaction may make it harder for player control attention, manage emotion, plus perform technical skill as they normally do. Finding from recent systematic review also suggest that psychological intervention may influence several form of performance anxiety, including state anxiety, cognitive anxiety, somatic anxiety, plus self-confidence (Mühlbauer et al., 2023).

Main problem is that psychological preparation still receive less systematic attention than physical, technical, plus tactical training. Within many sport training program, psychological exercise are not yet include as consistently as other part of preparation. At same time, study on psychological skill training, mindfulness-based method, plus imagery have report possible benefit for athletic performance. However, recent review also point out that stronger experimental research still need, especially when intervention design for particular sport and competitive setting (Reinebo et al., 2024; Lange-Smith et al., 2024). This situation create need for test structured psychological training program that adjust toward actual competitive condition face by first-division handball player within Iraq.

Accordingly, research problem

formulate within following question:

What is effect of proposed psychological training program based on fundamental psychological skill for reducing competitive anxiety plus developing psychological hardiness among first-division handball player at Al-Taawoun Sports Club?

Recent evidence indicates that psychological skills training, including multimodal psychological skills training, mindfulness- and acceptance-based approaches, and imagery, can contribute to improved athletic performance, although the magnitude and stability of these effects depend on intervention characteristics and methodological quality (Reinebo et al., 2024). In addition, research specifically involving team-handball players has demonstrated that competitive anxiety is associated with psychosocial factors such as team cohesion, coaching behavior, and achievement goals, highlighting the importance of psychological preparation in competitive handball (Wang et al., 2024). Against this background, the present study aims to develop a proposed psychological training program that incorporates fundamental psychological skills specifically designed for first-division handball players. It also seeks to examine the effectiveness of the proposed program in reducing competitive anxiety among participants in the experimental group, particularly across its three dimensions: cognitive anxiety, somatic anxiety, and self-confidence. In addition, the study aims to investigate the effect of the proposed psychological training program on developing psychological hardiness across its three dimensions, namely control, constancy, and confidence. Furthermore, the study seeks to identify differences between the experimental and control groups in the posttest results with respect to the study variables.

Based on the theoretical framework, empirical evidence, and objectives of the study, the researchers formulated hypotheses concerning the expected changes in competitive anxiety and psychological hardiness following the implementation of the proposed psychological training program. The first hypothesis states that there are statistically significant differences between the pretest and posttest results of participants in the experimental group in terms of competitive anxiety and psychological hardiness, with the

differences favoring the posttest results. This hypothesis is based on evidence that structured psychological skills interventions can produce beneficial changes in athletes' psychological functioning and performance outcomes (Reinebo et al., 2024). The second hypothesis concerns changes in the control group and states that there are statistically significant differences between its pretest and posttest results with respect to the study variables. The third hypothesis states that there are statistically significant differences between the experimental and control groups in the posttest results for the study variables, with the differences favoring the experimental group. This hypothesis is consistent with the experimental rationale that athletes receiving a structured psychological intervention may demonstrate different psychological outcomes from those receiving regular training without the proposed intervention.

Operationally, the proposed psychological training program is defined as a series of structured training sessions designed and implemented by the researcher for the experimental group at a frequency of three sessions per week, with each session lasting 45 minutes over a period of 10 weeks. The program incorporates a range of fundamental psychological skills, including progressive muscle relaxation, mental imagery, breathing regulation, positive self-talk, goal setting, concentration, pre-competition routines, and mindfulness. These techniques are systematically integrated into the training sessions to help athletes regulate psychological responses, enhance mental readiness, and develop psychological skills relevant to competitive performance.

Competitive anxiety is operationally defined as a multidimensional psychological state characterized by negative expectations, apprehension, and anxiety-related feelings that arise in competitive situations. In this study, competitive anxiety encompasses three dimensions: cognitive anxiety, which refers to negative thoughts and concerns related to competition; somatic anxiety, which reflects physiological and bodily

symptoms associated with competitive stress; and self-confidence, which represents the positive or reverse dimension of competitive anxiety (Martens et al., 1990). These dimensions are assessed to determine changes in athletes' psychological responses before and after the implementation of the proposed psychological training program.

Psychological hardiness is operationally defined as a multidimensional psychological characteristic reflected in an athlete's ability to regulate emotions and behavior under stressful competitive conditions, maintain stable performance despite fluctuations in match outcomes, and demonstrate confidence in their own abilities to achieve effective and outstanding performance. In this study, psychological hardiness consists of three dimensions: control, referring to the athlete's perceived ability to regulate responses and remain composed under pressure; constancy, referring to the ability to maintain commitment and performance despite difficulties; and confidence, referring to belief in one's own abilities and capacity to perform successfully (Sheard et al., 2009).

METHODOLOGY

The researcher employed an experimental method using a pretest–posttest design with two equivalent groups (experimental and control), as this design was considered appropriate to the nature of the research problem and its objectives. The experimental method is regarded as “the most appropriate method for testing causal relationships between variables and measuring the effect of experimental treatment on the dependent variable” (Obeidat et al., 2016, p. 112).

Scope of the Study

The scope of this study is limited to first-division handball players of Al-Taawoun Sports Club who participated during the 2025–2026 sports season. Geographically, the study was conducted in the indoor handball hall of Al-Taawoun Sports Club, which served as the setting for the implementation of the psychological training program and the administration of the research procedures. In terms of time, the study was conducted from October 1, 2025, to December 30, 2025, covering the stages of preparation, pretesting, implementation of the proposed psychological

training program, and posttesting.

Research Population and Sample

The research population consisted of 26 first-division handball players from Al-Taawoun Sports Club during the 2025–2026 sports season. The researcher selected the sample using purposive sampling. Four players were excluded due to injury and irregular attendance in training. Consequently, the final sample consisted of 22 players, representing 84.6% of the original population. The participants were then randomly allocated by drawing lots into two equal groups: an experimental group consisting of 11 players and a control group consisting of 11 players, as presented in Table 1.

Table 1. Distribution of the Research Sample

Group	n	Percentage	Mean Age (years)
Experimental group	11	50%	23.86
Control group	11	50%	24.05
Total	22	100%	23.95

Equivalence of the Two Groups

To ensure equivalence between the two groups before implementing the intervention, the researcher administered pretests to both groups on all study variables. The data were analyzed using an independent-samples *t*-test. The results indicated no statistically significant differences between the two groups across all variables, as shown in Table 2, confirming that the groups were comparable at baseline.

Table 2. Equivalence of the Two Groups at Pretest

Variable	Experimental Mean	Experimental SD	Control Mean	Control SD	<i>t</i>	Significance
Cognitive anxiety	23.42	3.18	23.17	3.05	0.192	Not significant
Somatic anxiety	21.83	2.94	22.08	3.12	0.198	Not significant
Self-confidence	21.50	3.08	21.75	2.97	0.199	Not significant
Control	5.25	1.02	5.42	0.98	0.187	Not significant

Constancy	9.83	1.87	10.08	1.79	0.201	Not significant
Confidence (hardiness)	19.75	2.94	20.08	2.86	0.211	Not significant

Critical *t*-value = 2.086 at *df* = 20 and $\alpha = .05$.

Research Instruments

Competitive Anxiety Scale

The researcher adopted the Competitive State Anxiety Inventory-2 (CSAI-2) developed by Martens et al. (1990), using the standardized Arabic version validated by Allawi (1998). The instrument consists of 27 items distributed equally across three dimensions, with nine items for each dimension: cognitive anxiety, somatic anxiety, and self-confidence. Participants responded to each item using a four-point Likert scale ranging from 1 = Not at all to 4 = Very much so. Scores for each dimension range from 9 to 36.

Sports Psychological Hardiness Scale

The researcher adopted the scale developed by (Jiang, 2026) Sheard et al. (2009), using an Arabic version adapted to the Iraqi sports context. The scale consists of 14 items distributed across three dimensions: confidence (8 items), constancy (4 items), and control (2 items). Participants responded to each item using a four-point Likert scale ranging from 1 = Not applicable at all to 4 = Completely applicable. The total score ranges from 14 to 56.

2.5 Psychometric Properties of the Two Scales
To verify the suitability of the two instruments for the Iraqi context, the researcher conducted a pilot study involving 14 players who were not included in the main research sample. The validation procedures produced the following results:

1. Content/face validity: The expert panel unanimously confirmed the suitability of the items (Appendix 3), with an agreement rate exceeding 90%.
2. Internal consistency reliability: Cronbach's alpha coefficient was 0.87 for the Competitive State Anxiety Inventory-2 (CSAI-2) and 0.84 for the Sports Psychological Hardiness Scale.
3. Internal consistency: Statistically significant correlations were found between the individual items of each

dimension and their respective total dimension scores.

These findings indicate that both instruments demonstrated acceptable psychometric properties for the purposes of the present study.

Proposed Psychological Training Program

The researcher designed the proposed psychological training program based on the theoretical frameworks of Weinberg and Gould (2019) and Cox (2012), as well as a review of several psychological training programs implemented with team-sport athletes. Prior to implementation, the program was submitted to a panel of experts specializing in sports psychology and handball coaching for evaluation.

Table 3. Structure of the Proposed Psychological Training Program

Psychological Skill	Number of Sessions	Phase	Main Objective
Progressive muscle relaxation	4	Weeks 1–2	Reduce physiological arousal
Breathing regulation and diaphragmatic breathing	3	Weeks 1–2	Regulate physiological rhythm
Mental imagery and visualization	5	Weeks 3–5	Develop perceived competence
Positive self-talk	4	Weeks 3–5	Modify negative thoughts
Short- and long-term goal setting	3	Weeks 5–7	Strengthen commitment and motivation
Concentration and selective attention training	5	Weeks 5–8	Develop attentional awareness
Pre-competition routines	3	Weeks 8–9	Regulate pre-match readiness
Mindfulness	3	Weeks 9–10	Develop present-moment awareness
Total	30 sessions	10 weeks	

The program was implemented through three sessions per week (Saturday, Monday, and Wednesday) before physical training. Each session lasted 45 minutes, structured as follows:

1. Introduction and preparation: 5 minutes
2. Presentation and explanation of the psychological skill: 10 minutes
3. Practical application under the

researcher's supervision: 20 minutes

4. Feedback and discussion: 10 minutes

The control group continued its regular physical and technical training without receiving the psychological intervention. To maintain experimental control, participants in the control group were instructed not to receive any additional psychological training content during the intervention period.

Implementation Procedures

The pretest was administered to both groups on October 1–2, 2025. The psychological training program was then implemented with the experimental group from October 5 to December 13, 2025, over a continuous period of 10 weeks. The posttest was administered to both groups on December 14–15, 2025, under the same conditions as the pretest in order to control potential extraneous variables.

The researcher administered both instruments immediately before a regular training session to maintain relatively similar psychological conditions among the players. All participants agreed to participate in the study by providing written informed consent.

Statistical Methods

The researcher used the Statistical Package for the Social Sciences (SPSS) for data analysis. The statistical procedures included the paired-samples *t*-test and independent-samples *t*-test.

PRESENTATION, ANALYSIS, AND DISCUSSION OF RESULTS

Differences Between Pretest and Posttest Results in the Experimental Group

To test the first hypothesis, the researcher employed a **paired-samples *t*-test** to compare the pretest and posttest results of the experimental group across the study variables.

Table 4. Paired-Samples *t*-Test Results for the Experimental Group

Vari able	Pr ete st Me an	Pr ete st SD	Pos ttes t Me an	Pos ttes t SD	<i>t</i>	Impro vemen t (%)	Signi fican ce
Cogn itive anxie ty	23. 42	3.1 8	15. 83	2.7 4	9. 8 4	32.4%	Signif icant
Som atic anxie ty	21. 83	2.9 4	14. 92	2.6 1	9. 2 1	31.7%	Signif icant
Self-	21.	3.0	29.	2.8	8.	38.4%	Signif

confidence	50	8	75	3	95		ificant
Control	5.25	1.02	6.92	0.79	6.84	31.8%	Significant
Constancy	9.83	1.87	13.17	1.42	7.35	34.0%	Significant
Confidence (hardiness)	19.75	2.94	26.83	2.31	8.12	35.8%	Significant

Critical t -value = 2.228 at $df = 10$ and $\alpha = .05$.

As shown in Table 4, all calculated t -values exceeded the corresponding critical value, indicating statistically significant differences between the pretest and posttest results of the experimental group in favor of the posttest. The mean scores for cognitive and somatic anxiety decreased by 32.4% and 31.7%, respectively, whereas self-confidence and the three dimensions of psychological hardiness increased, with improvement rates ranging from 31.8% to 38.4%.

Differences Between Pretest and Posttest Results in the Control Group

Table 5. Paired-Samples t -Test Results for the Control Group

Variable	Pre test Mean	Pre test SD	Post test Mean	Post test SD	t	Significance
Cognitive anxiety	23.17	3.05	22.83	3.12	1.421	Not significant
Somatic anxiety	22.08	3.12	21.75	3.18	1.385	Not significant
Self-confidence	21.75	2.97	22.17	3.04	1.512	Not significant
Control	5.42	0.98	5.58	1.01	1.34	Not significant
Constancy	10.08	1.79	10.33	1.82	1.29	Not significant
Confidence (hardiness)	20.08	2.86	20.42	2.91	1.41	Not significant

Critical t -value = 2.228 at $df = 10$ and $\alpha = .05$.

The results presented in Table 5 show that all calculated t -values were lower than the critical value. Therefore, no statistically significant differences were

found between the pretest and posttest results of the control group. This indicates relative stability in the study variables among control-group participants despite their continued participation in regular physical and technical training.

Differences Between the Two Groups in the Posttest

Table 6. Independent-Samples t -Test Results for the Experimental and Control Groups at Posttest

Variable	Experimental Mean	Experimental SD	Control Mean	Control SD	t	Cohen's d	Significance
Cognitive anxiety	15.83	2.74	22.83	3.12	5.62	2.38	Significant
Somatic anxiety	14.92	2.61	21.75	3.18	5.53	2.34	Significant
Self-confidence	29.75	2.83	22.17	3.04	6.08	2.58	Significant
Control	6.92	0.79	5.58	1.01	3.85	1.53	Significant
Constancy	13.17	1.42	10.33	1.82	4.32	1.76	Significant
Confidence (hardiness)	26.83	2.31	20.42	2.91	5.98	2.44	Significant

Critical t -value = 2.086 at $df = 20$ and $\alpha = .05$.

Table 6 indicates statistically significant differences between the experimental and control groups in the posttest across all study variables, with the differences favoring the experimental group. All calculated t -values exceeded the critical value. Furthermore, the reported Cohen's d values ranged from 1.53 to 2.58, indicating large standardized between-group differences according to commonly used effect-size conventions. These findings provide evidence of substantial differences between the groups following the intervention and are consistent with the intended effects of the proposed psychological training program.

DISCUSSION OF THE RESULTS

Finding present within preceding table indicate that first and third research hypothesis receive support, demonstrating effectiveness of proposed psychological training program within reducing competitive anxiety and developing psychological hardiness among participant within experimental group. Significant difference observe between pretest and posttest result suggest that systematic psychological skill training can contribute toward meaningful change within athlete psychological response toward competitive situation. Finding particularly relevant because intervention not focus on single psychological technique but combine several complementary strategy, including relaxation, breathing regulation, mental imagery, positive self-talk, goal setting, concentration training, pre-competition routine, plus mindfulness. Integration of these technique may have enable player for address different component of competitive stress simultaneously, rather than treating anxiety or psychological hardiness as isolated phenomenon.

Regarding cognitive plus somatic anxiety, psychological skill incorporate within program, particularly progressive muscle relaxation and breathing regulation, contribute toward reducing physiological arousal before and during competition. Progressive muscle relaxation may help athlete recognize and reduce unnecessary muscular tension, while controlled breathing can facilitate physiological regulation and help player return toward more controlled state of arousal. This finding consistent with Cox (2012), who emphasize that physical symptom of anxiety, such as increased heart rate, muscle tension, plus sweating, may interfere with precise motor performance require within handball. Positive self-talk also contribute toward restructuring negative thought experience by player before match and transform them into positive plus motivating thought, thereby contribute toward reduction within cognitive anxiety. From this perspective, reduction within anxiety observe after intervention may reflect combined influence of physiological regulation plus cognitive restructuring rather than effect from single psychological technique.

Researcher consider marked improvement within self-confidence, which reach 38.4%, as one of most important outcome from program. This improvement may attribute toward integration of several psychological skill include within program, particularly mental imagery, which enable player for mentally rehearse technical skill before actual performance, plus progressive short-term goal setting, which provide player with successive experience of achievement and help rebuild confidence within their ability. Mental imagery may provide athlete with opportunity for anticipate successful execution and become psychologically prepare for competitive situation, while goal setting provide clear and attainable performance target. Combination of these technique may strengthen athlete perception of competence and reduce uncertainty before competition. This finding consistent with meta-analysis conduct by Craft et al. (2003), which indicate self-confidence among strongest predictor within athletic performance.

Improvement within self-confidence also important because confidence may influence how athlete interpret challenging competitive situation. Player who perceive themselves as capable for handle difficult situation may become more likely for approach competition with sense of control rather than excessive apprehension. Within team sport such as handball, where player require respond rapidly toward changing tactical circumstance, confidence may also support decisive action and reduce hesitation. Present finding therefore suggest psychological training should not view solely as means for reducing undesirable psychological state such as anxiety. Rather, it should also use proactively for cultivate positive psychological resource, particularly self-confidence, that can support athlete when they encounter pressure, mistake, change within score, or unexpected development during competition.

With regard toward three dimension of psychological hardiness, improvement rate remain relatively similar, ranging from 31.8% toward 35.8%, suggesting program address these dimension within integrated manner rather than isolated way. For control dimension, relaxation technique plus mindfulness training help player regulate emotional response within stressful situation. For constancy dimension, pre-competition

routine and concentration exercise help player maintain stable performance despite fluctuation within match score or exposure toward unexpected situation. This finding consistent with Sheard (2013), who highlight ability for maintain performance under pressure as one prominent characteristic of psychological hardiness among high-performing athlete. Regarding confidence dimension of psychological hardiness, integration from preceding psychological skill contribute toward strengthening player sense of self-efficacy, consistent with Gucciardi (2017), who emphasize confidence within own ability as fundamental component of psychological hardiness among elite athlete.

Relatively consistent improvement across three dimension of psychological hardiness suggest psychological preparation may become more effective when implement as comprehensive system rather than through isolated exercise. Control, constancy, plus confidence theoretically interconnect because athlete who can regulate emotional response may become better able for maintain concentration and persistence, while successful persistence may later strengthen confidence within personal capability. Within this study, combination of relaxation, mindfulness, concentration, goal setting, mental imagery, plus self-talk provide repeated opportunity for player practice these psychological response within structured manner. Finding therefore suggest psychological hardiness may strengthen through repeated exposure toward psychological skill training that enable athlete regulate themselves, maintain commitment, and develop confidence when facing competitive demand.

Researcher also note that effect-size value, ranging from 1.53 toward 2.58 across study variable, indicate substantial standardized difference associate with intervention. These value fall within large-effect range according toward commonly use Cohen convention. Magnitude of these effect become noteworthy because intervention produce difference across both dimension of competitive anxiety and dimension of psychological hardiness.

Nevertheless, effect size should interpret within context of study design, sample size, plus specific characteristic of participating athlete. Absence of statistically significant change within control group, despite continued participation within regular training, further support interpretation that observed change within experimental group associate with experimental intervention rather than merely maturation or self-directed learning. However, future study involve larger sample and multiple club would become useful for determine extent toward which finding can generalize toward other population of handball player.

Another important consideration refer toward practical feasibility of implementing program within regular training environment. Intervention deliver three time per week for 45 minute over period of 10 week, allowing psychological preparation for incorporate systematically without require separate long-term training structure. Use of relatively accessible technique, such as breathing regulation, self-talk, goal setting, concentration exercise, plus mental imagery, may facilitate implementation by coach and sport psychologist. At same time, structured nature of program provide opportunity for psychological skill practice repeatedly rather than introduce only immediately before important competition. Such continuity important because psychological skill, like physical and technical skill, generally require repeated practice before they can effectively apply under competitive pressure.

Researcher further argue that nature of handball as fast-paced team sport require player for make successive offensive and defensive decision within matter of second, making psychological factor important component of athletic performance. Player have limited time for regain concentration when attention disrupt during continuous play. This characteristic may enhance practical relevance of psychological skill incorporate within program, particularly pre-performance routine plus concentration training. In addition, interaction between individual psychological response and team environment mean athlete ability for regulate emotion may have implication not only toward individual performance but also toward communication, coordination, plus tactical execution with teammate. Accordingly, psychological

preparation within handball should consider as part of broader performance system rather than independent component separate from physical, technical, plus tactical preparation.

Finally, the findings provide an applied basis for strengthening the role of psychological preparation within Iraqi handball training programs. The observed improvements in competitive anxiety, self-confidence, and psychological hardiness indicate that psychological training can be incorporated into the preparation of first-division players in a structured and measurable manner. Nevertheless, the findings should be interpreted in relation to the characteristics of the present sample and the specific competitive context of Al-Taawoun Sports Club. Future research could examine the effectiveness of similar programs across different Iraqi clubs, age categories, competitive levels, and female and male players, while also examining whether psychological improvements are maintained over longer follow-up periods. Accordingly, the researcher recommends extending this type of psychological training program to first-division handball teams in Iraqi sports clubs as an integral component of comprehensive athletic preparation, alongside physical, technical, and tactical training.

CONCLUSIONS

Based on the statistical analysis of the data and the interpretation of the findings, the study concludes that the proposed psychological training program contributed significantly to reducing competitive anxiety among participants in the experimental group, particularly in its cognitive and somatic dimensions. At the same time, the program contributed significantly to an increase in self-confidence, with an improvement exceeding 38%. The findings also indicate that the proposed program contributed significantly to the development of all three dimensions of psychological hardiness, namely control, constancy, and confidence, among participants in the experimental group.

In contrast, the control group showed no statistically significant

differences between its pretest and posttest results across the study variables. This finding provides support for the interpretation that the changes observed in the experimental group were associated with participation in the proposed psychological training program rather than with changes occurring in the regular training process alone. Furthermore, statistically significant differences were found between the experimental and control groups in the posttest results across the study variables, with large standardized effect sizes ranging from 1.53 to 2.58, indicating substantial differences between the groups following the intervention.

Overall, proposed psychological training program appear feasible for field implementation within Iraqi sport club. Program utilize relatively simple resource and can deliver within manageable period of 10 week, making it potentially applicable as complementary component of comprehensive athletic preparation alongside physical, technical, plus tactical training.

RECOMMENDATIONS

Based on finding from study, researcher recommend following:

1. Proposed psychological training program should implement among first-division handball team within Iraqi sport club as integral component of comprehensive athletic preparation.
2. Psychological preparation should incorporate within daily handball training program rather than limiting training toward physical, technical, plus tactical aspect.
3. Training course should organize for handball coach within Iraq focusing toward fundamental of sport psychology and its practical application, within coordination with college of physical education and sport science.
4. Iraqi sport club should consider engaging qualified sport psychologist and integrating them within technical coaching staff of handball team.
5. Similar study should conduct with other age category, club within first and premier division, plus female handball player for facilitate broader generalization.

6. Further experimental study should investigate psychological training program addressing other variable, such as achievement motivation, emotional intelligence, plus psychological flow among handball player.

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