

Research Article / Araştırma Makalesi

The effect of 'Athlete Mindset Program (AMP)' on sports injury anxiety and athletic coping skills in U-16 football players

'Atletik Zihin Programının (AZP)' U-16 futbol oyuncularında spor yaralanması kaygısı ve sportif sorunlarla başa çıkma becerileri üzerine etkisi

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ABSTRACT

Objective: The aim of this study is to introduce and evaluate the effect of the "Athlete Mindset Program (AMP)" on sports injury anxiety and athletic coping skills among U-16 football players.

Material and Methods: A total of 40 participants attended the 10-week anxiety management training program, which the authors entitled the 'Athlete Mindset Program'. The effect of the program was evaluated with "Sport Injury Anxiety Scale (SIAS)" and 'Athletic Coping Skills Inventory (ACSI)' before and after the implementations.

Results: The AMP reduced sports injury anxiety and improved athletic coping skills of U-16 football players.

Conclusion: The AMP holds the potential of coping with injury anxiety by improving athletes' coping skills.

Keywords: Sport injury anxiety, athletic coping skills, football

ÖZ

Amaç: Bu çalışmanın amacı, 'Atletik Zihin Programının (AZP)' U-16 yaş futbolcularında spor yaralanması kaygısı ve atletik başa çıkma becerileri üzerindeki etkisini incelemek ve değerlendirmektir.

Yöntem: Toplam 40 katılımcı, yazarların AZP adını verdikleri 10 haftalık anksiyete yönetimi eğitim programına katıldı. Programın etkisi, uygulama öncesi ve sonrasında 'Spor Yaralanması Kaygı Ölçeği' ve 'Atletik Başa Çıkma Becerileri Envanteri' ile değerlendirildi.

Sonuçlar: AZP, U-16 futbolcuların spor yaralanması kaygılarını azalttı ve atletik başa çıkma becerilerini geliştirdi.

Tartışma: AZP programının sporcuların başa çıkma becerilerini geliştirerek yaralanma kaygısıyla başa çıkmalarını destekleme potansiyeli vardır.

Anahtar Sözcükler: Spor yaralanması kaygısı, atletik başa çıkma becerileri, futbol.

INTRODUCTION

The performance in football is related to psychological factors as well as physical effort (1). Anxiety has an impact on both the performance and psychological well-being of football players (2). One of the factors that cause anxiety among athletes is sports related injuries (3).

Athletes' personality traits, previous injury experiences and coping strategies have an impact on coping with sports injuries (4). Psychological reactions are observed in the processes of injury, rehabilitation and return to sports. Both medical and social support can help the athletes when they feel furious and anxious during their injury process (5).

Sport Injury Anxiety

Injuries are common in different sports disciplines. Injury anxiety may cause increases in the stress levels of athletes (6). Increased anxiety levels have an impact on physical symptoms such as muscle tension, increased heart rate, and body aches (7), as well as on participation willing in sports, athletic performance, and psychological well-being of the athletes (8). Therefore, athletes are required to have skills in order to cope with challenging situations in sports that may cause anxiety. Sports environments also create anxiety for the athletes, so they need to learn how to manage their anxiety (9).

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Athletes reflect emotional and psychological reactions as a result of sports injuries. Injury related loss perceived by the athletes cause psychological reactions. The level of injury perception cause symptoms of anxiety and depression, and hold the potential to damage self-esteem (10). Sometimes, sports injuries cause athletes to show similar reactions to grief. They go through the stages of denial, anger, bargaining, depression, and acceptance in Kubler-Ross's stages of grief model (11).

Athletic Coping Skills

Coping attitudes are emotional, cognitive and behavioral mechanisms that enable individuals to manage the challenging event (10). Coping attitudes are examined under two strategies: emotion-focused and problem-focused. Emotion-focused coping strategies are methods such as avoidance, humor, and seeking emotional support. On the other hand, problem-focused coping strategies include strategies in which individuals tend to define the situation they are experiencing, generate solutions and choose the most appropriate solution (12). Challenging situations in sports require athletes develop coping skills such as concentration, peak under pressure, and goal setting (13). Psychological interventions with athletes can improve both their wellness and athletic coping skills (14).

Studies evaluating the impact of training programs that support athletes to cope with anxiety are limited. The aim of this study was to investigate the effect of 10-week Athlete Mindset Program (AMP) which was developed by the authors on sports injury anxiety and athletic coping skills in U-16 football players.

MATERIAL and METHODS

This study was designed as Single-Case Experimental Design (SCEDs). SCEDs are common research methods to test the introduction of interventions such as *Athlete Mindset Program*. SCEDs enable reliable researches that are conducted in small numbers of participants, in clinical settings as well as in small-sized research populations (15). Sports injury anxiety and athletic coping skills were evaluated before and after AMP implementations.

Participants

The participants of this study were U-16 football players from a football club located in Istanbul. The mean age of the participants was 15.5 ± 0.5 years. The study started with 49 participants and ended with 40 participants. Nine participants did not meet the criteria of maintaining AMP during the process. A single team was selected to ensure that participants were in the same environment. Inclusion criterion

of the participants was not receiving previous psychotherapy or psychology training. Participants who were involved in anxiety training before were excluded from the study. Participants included in the study continued AMP twice-a-week for 10 weeks. The program was implemented by dividing the total group into two groups consisting of 25 and 24 participants.

Ethical permission was obtained from Haliç University Ethics Committee with the number 267. Parental consent form was obtained for the participants in the study.

Data Collection

Personal Information Form, *Sports Injury Anxiety Scale and Athletic Coping Skills Inventory* were used in the study.

A personal information form was used to collect such information of the participants. In the form, information such as the age, education level, sport experience was asked.

The Sports Injury Anxiety Scale was developed by Rex and Metzler (3). It's a 5-point Likert-type scale consisting of 21 items and seven subscales. The subscales are loss of athleticism, being perceived as weak, experiencing pain, loss of social support, letting down important others, re-injury, having an impaired self-image. Turkish reliability and validity of the scale was carried out by Caz et al (16).

The Athletic Coping Skills Inventory was developed by Smith et al. (17). The scale consists of 28 items and seven subscales. Subscales are coping with adversity, coachability, concentration, confidence and achievement motivation, goal setting and mental preparation, peaking under pressure, and freedom from worry. Turkish reliability and validity of the scale was carried out by Özcan and Günay (13). The study plan is given in Figure 1.

Athlete Mindset Program

The Athlete Mindset Program (AMP) is a training program designed with experiential learning techniques by the authors. It is designed and conducted by an experienced clinical psychologist. Experimental learning is based on experiences. People gain knowledge by experiences rather than instructions. It addresses different types of learning; and conflicts in the process support the individual's learning (18).

AMP is based on cognitive behavioral therapy. Cognitive behavioral therapy evaluates individuals' cycles of emotion, thought, and behavior. A dysfunctional cycle causes individuals to experience symptoms of anxiety. Therefore, functional feelings, thoughts and behaviors can reduce the anxiety symptoms of individuals (19).

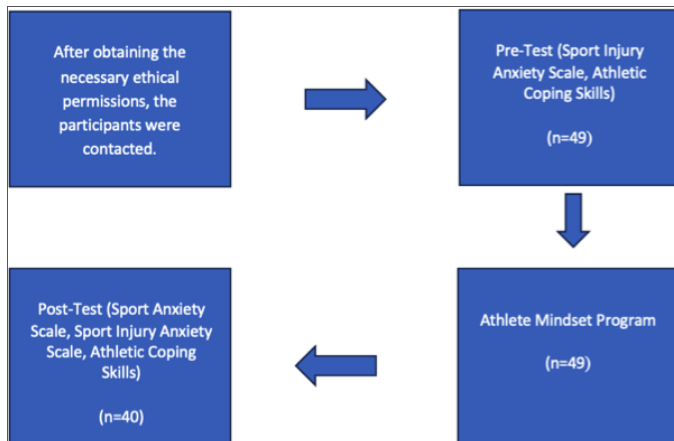


Figure 1. The research plan

According to AMP, it is important for participants to express themselves and to learn from each other's experiences. Topics covered were supported by applied practices. Participants were seated in a circular setting, and active involvement in the process was encouraged and every stage of the program was interactive. Each AMP session lasted 45 min a day, two times per week for 10 weeks.

The objectives of AMP

- Identifying and evaluating the areas of anxiety sources in participants.
- Giving information about sports injury anxiety and to teach coping methods.
- Teaching coping skills to deal with anxiety.
- Development of group dynamics and team building applications.
- Improving communication skills within the group.

Week 1:

- Meeting
- Conducting pre-test of the scales
- Giving information about the program

The purpose of the first week was to ensure that participants get to know each other and fill in the scales. Participants played different types of ice breaking and team building games on each meeting.

Week 2:

- Definition of anxiety
- Physiological and psychological symptoms of anxiety
- Emotion-thought-behavior cycle

The purpose of the second week was to define anxiety and to identify the sources in which situations participants ex-

perience anxiety. On the first day, participants were requested to talk about their anxiety situations, and they discussed the physiological and psychological symptoms of their anxiety. Then, emotion, thought and behavior cycle of cognitive behavioral therapy was shared. Participants conveyed their feelings, thoughts, and behaviors through a recent event which caused anxiety.

Week 3:

- Causes of anxiety
- The benefits and harms of anxiety
- Safe place and progressive muscle relaxation exercises

The causes of anxiety were discussed and relationship between the autonomic nervous system and anxiety was shared. The benefits and harms of anxiety were assessed. When the group was assessed, team building activities that would improve their communication skills were added in the third week's implementations. Additionally, safe place and progressive muscle relaxation exercise were explained and practiced.

Week 4:

- The relationship between motivation and anxiety
- Extrinsic and intrinsic motivation
- Maintaining motivation
- SWOT Analysis

Motivation was discussed. Factors that motivate the participants and the maintenance of motivation were mentioned. They were requested to make a SWOT analysis by considering the variables that motivate their team. SWOT analysis included evaluation of strengths, weaknesses, opportunities, and threats of team by the participants.

Week 5:

- Communication in Football
- Feedback

The theme of the fifth week was communication. Games were played to improve communication skills of the participants. This topic was included in the training plan due to perceived participant needs.

Week 6:

- Reactions to sports injuries
- Sports injury anxiety

Psychological reactions to sports injuries were conveyed. Participants' injury experiences were heard. Strategies of coping with sports injury anxiety were evaluated and func-

tional strategies were discussed. Communication games were played in the second day.

Week 7:

- Coping with anxiety
- Cognitive and somatic techniques

Participants were requested to explain how they have been coping with challenging situations. Coping techniques were discussed. Imagination, self-talk, goal setting, thought stopping techniques were explained and practiced.

Week 8:

- Mental Training

Mental training was explained and practiced together. Participants were instructed to imagine the game that would take place. Debriefing was done after the application.

Week 9:

Participants were preparing for the national championship, and were requested to play educational games for overcoming their anxiety and for motivation. Games were played with the participants on the last two weeks. Additionally, participants were requested to write a letter to own, to be read a few weeks later. They talked to themselves by writing down their goals.

Week 10:

The summary of the program was discussed with the participants, and evaluation was made. Participants were requested to explain what they learned and how they applied it during AMP. Posttest scales were implemented at the end of week 10.

Statistical Analysis

In this study, paired sampled T-test was implemented as the statistical method. A paired sample T-test is a statistical significance test used to compare measurements of the same individuals at different times or under different conditions, assuming the parametric assumptions are met (20). The results of skewness and Curtosis analysis of Sports Injury Anxiety Scale and Athletic Coping Skills Inventory were obtained in ± 2 value range which met the parametric assumptions. IBM’s Statistical Package for the Social Sciences v28 (SPSS) was used to evaluate data. Data were evaluated at p<0.05 confidence interval.

RESULTS

There was a significant difference between pre-test and post-test measurements of the total score of Sports Injury Anxiety Scale and sub-dimensions. The findings obtained as a result of the analysis are given in Table 1.

Table 1. Skewness and Curtosis results of sport injury anxiety scale

Parameter	N	Pre-test		Post-test	
		Skewness	Curtosis	Skewness	Curtosis
Sports Injury Anxiety Scale	40	0.78	0.14	1.06	0.86
Loss of Athleticism	40	0.91	0.32	1.43	1.40
Being Perceived as Weak	40	0.49	0.03	1.26	0.95
Experiencing Pain	40	-0.35	-0.30	0.67	-0.14
Letting Down Important Others	40	0.08	-0.36	0.87	-0.29
Loss of Social Support	40	-0.88	1.78	1.41	1.00
Reinjury	40	0.26	-0.43	0.24	-0.65

There was a significant difference between pre-test and post-test of Athletic Coping Skills Scale and its sub-dimensions.

The findings obtained as a result of the analysis are given in Table 2.

Table 2. Pre-test and post-test results of Athletic Coping Skills Scale

Parameter (N=40)	Tests	X	SD	t	p																																																												
						Athletic Coping Skills	Pre test	2.92	0.33	-10.832	<0.001																																																						
Post test	3.47	0.37	Coping with Adversity	Pre test	2.81	0.48	-6.685	<0.001	Post test			3.54	0.65	Concentration	Pre test	3.02	0.48	-3.885	<0.001	Post test	3.72	0.65	Coachability	Pre test	2.60	0.37	-7.359	<0.001	Post test	2.91	0.47	Confidence and Achievement Motivation	Pre test	3.55	0.53	-7.359	<0.001	Post test	4.31	0.64	Goal Setting and Mental Preparation	Pre test	3.23	0.57	-3.775	<0.001	Post test	3.68	0.83	Peaking Under Pressure	Pre test	2.83	0.68	-4.739	<0.001	Post test	3.48	0.91	Freedom from Worry	Pre test	2.37	0.75	-2.102	0.042	Post test
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DISCUSSION

In this study, an anxiety management training program entitled ‘Athlete Mindset Program’ was formed and applied on U-16 football players. The participants’ levels of sports injury anxiety and athletic coping skills were assessed before and after the program.

Sports Injury Anxiety

In our study, AMP significantly reduced the sport injury anxiety levels of participants. We believed that the 10-week-training program had an impact on reducing the anxiety caused by injury. Sport injuries may lead to hesitation on getting back to training and competition among recently injured athletes (21). According to Tomalski (22), athletes’ injury anxiety was depending on coping methods. There is a relationship between avoidant coping style and sports injury anxiety. In our study, informing the participants about functional coping methods supported the participants to cope with sports injury anxiety by acquiring functional coping methods.

Teaching relaxation techniques to athletes support them to cope with challenging events such as injuries. Athletes are aware of their reactions towards stress, and it would be

easier for them to cope with injury (23). In our study, teaching techniques such as breathing exercises, progressive muscle relaxation, and mental visualization and encouraging participants to apply these techniques helped them managing their anxiety about injury.

Studies show that mindfulness-based training for reducing sports injury anxiety and improve sports performance in football players (24). Cognitive behavioral therapy was a part of AMP and it was considered that it reduced injury anxiety according to our results (see Table 2).

Athletic Coping Skills

Athletes’ way of coping with problems related to their sports would also interfere with their anxiety coping strategies (25). The sub-scales of athletic coping skills inventory and total score of athletic coping skills inventory were evaluated before and after the training in this study and displayed significant results (see Table 3).

Table 3. Pre-test and post-test results of Sports Injury Anxiety Scale

Parameter (N=40)	Tests	X	SD	t	p
Sports Injury Anxiety Scale	Pre test	2.44	0.49	4.907	<0.001
	Post test	1.93	0.64		
Loss of Athleticism	Pre test	1.90	0.79	2.326	0.013
	Post test	1.59	0.80		
Being Perceived as Weak	Pre test	2.05	0.63	3.619	<0.001
	Post test	1.60	0.75		
Experiencing Pain	Pre test	2.94	0.76	4.103	<0.001
	Post test	2.32	1.07		
Letting Down Important Others	Pre test	2.46	0.78	2.672	0.005
	Post test	2.05	0.99		
Loss of Social Support	Pre test	2.29	1.03	2.801	0.004
	Post test	1.69	0.91		
Reinjury	Pre test	3.00	0.82	4.398	<0.001
	Post test	2.37	0.93		

There are studies evaluating coping in sport. According to Meyers et al. (26), athletic coping skills of experienced soccer players were better than younger players in their study. In another study of Köyağasıoğlu ve Şenışık (27), American football players performed higher levels of social support, coping with adversity, coachability, concentration, confidence, and achievement motivation than football (soccer) players. Athletic coping skills are skills that can be developed through psychological interventions. Kanniyan (9) evaluated the competitive state anxiety levels of football players between the ages of 15-18. In his study, participants received eight weeks of positive self-talk training. Results revealed increased self-confidence levels in individuals by decreasing their cognitive and somatic anxiety. Mindful-

ness-based training (24,28) and training in mental toughness (25,29) improve the athletic coping levels of athletes. Individuals can manage the difficulties in the field of sports functionally when they receive training that supports them to cope with the challenging events they may experience. It may be interpreted that coping strategies of the participants in this study also developed.

Learning different psychological techniques improves athletes’ athletic coping skills. One of them is self-talk (9). In our study, participants were taught many mental training techniques such as self-talk, imagination, and thought stopping. Learning these techniques may support participants to cope under pressure. The 10-week duration of the program may be a factor that provides coping skills. There

is a need to see the impact of long-term programs on participants. Follow-up studies after the interventions will enable the long-term effects of the programs to be seen.

CONCLUSION

In this study, a 10-week anxiety management program was introduced and evaluated. As a result, sports injury anxiety decreased, and athletic coping skills increased. It reveals that AMP is an effective training program for injury anxiety management and improving athletic coping skills in U-16 football players.

This study has limitations. One of the limitations is the lack of a control group. This situation limits the evaluation of the effectiveness of the training program. In addition, Time may be one of the factors causing changes in the variables. Implementation of the training and factors related to the person applying it may be among variables that determine the effectiveness of the training program. It is recommended that these limitations be taken into consideration in future studies.

Ethics Committee Approval / Etik Komite Onayı

The approval for this study was obtained from Haliç University Ethics Committee (Decision No: 267, dated 28.12.2022).

Conflict of Interest / Çıkar Çatışması

The authors declared no conflicts of interest with respect to authorship and/or publication of the article.

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Author Contributions / Yazar Katkıları

Concept: GA, AP, YAK, MK; supervision: AP, YAK; design: GA, AP, MK; materials: GA, AP; data collection and/or processing: GA, MK; analysis and interpretation: GA, AP, YAK; literature review: GA, AP; writing manuscript: GA, AP, YAK; critical reviews: GA, AP, YAK, MK.

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