

# The Effect of the Mental Imagery Training on Anxiety in Soccer Players

## Futbolcularda Zihinsel Hayal Etme Antrenmanının Kaygı Üzerine Etkisi

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Geliş Tarihi/Received: 08.03.2010  
Kabul Tarihi/Accepted: 20.09.2010

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**ABSTRACT Objective:** Most comprehensive mental training programs stress the development of psychological skills and techniques such as anxiety management, imagery, goal settings, concentration and confidence. According to this introduction the purpose of this study was to investigate the effect of the mental imagery training on anxiety on the soccer players. **Material and Methods:** The direction of this purpose, Sakaryaspor's and Kocaelispor's players who play in super young league, were subjects of this study. Sakaryaspor's players whose ages were approximately  $18 \pm 0.76$ , Kocaelispor's players whose ages were approximately  $17.66 \pm 1.02$ , were assigned to experiment group (Sakaryaspor) and control group (Kocaelispor). To measure anxiety, CSAI-2 (Competitive State Anxiety Inventory), STAI (State Trait Anxiety Inventory) were used. Kolmogorov-Smirnov, Independent-Samples t Test and Paired-Samples t Test were used for statistical analysis. Significance was set at the  $p < 0.05$  level. Data was analyzed SPSS for Windows. **Results:** The result of the statistical analysis, only it was found significant difference between experiment groups' trait anxiety's pre-test point and post-test point ( $t: 2.216; p < 0.05$ ), however it wasn't found significant difference between cognitive anxiety's pre-test post test ( $t: 1.106$ ), somatic anxiety's pre-test and post-test ( $t: -0.952$ ), self-confidence's pre-test and post-test ( $t: -0.297$ ) and state anxiety's pre-test and post-test ( $t: 0.596$ ) ( $p > 0.05$ ). **Conclusion:** As a conclusion, mental imagery training can be used for regulating anxiety level but in order to benefit much more from mental imagery training, much more work out.

**Key Words:** Mental imagery training; anxiety; soccer

**ÖZET Amaç:** Bir çok kapsamlı zihinsel antrenman tekniği kaygıyla başa çıkma, hayal etme, hedef belirleme, kendine güven oluşturma konsantrasyon gibi psikolojik beceri ve tekniklerin gelişimine vurgu yapar. Bu açıklamaya göre bu çalışmanın amacı; futbolcularda zihinsel hayal etme antrenmanının kaygı üzerine etkisini araştırmaktır. **Gereç ve Yöntemler:** Bu amaca yönelik, süper gençler liginde oynayan Sakaryaspor ve Kocaelispor süper genç takım sporcuları denek olarak alınmıştır. Deneklerin yaş ortalamaları Sakaryaspor' da  $18 \pm 0.76$ , Kocaelispor' da  $17.66 \pm 1.02$  yıldır. Kaygıyı ölçmek amacıyla CSAI-2 ve STAI kaygı envanterleri kullanılmıştır. Veriler ön test, son test deney deseni ile toplanmıştır. Elde edilen verilerin analizi için Kolmogorov-Smirnov Testi, İki Eş Arasındaki Farkın Önemlilik Testi, Bağımsız Gruplarda t Testi kullanılmıştır. Araştırmada hata payı 0.05 olarak kabul edilmiştir. Çalışmada elde edilen veriler Windows için SPSS programında analiz edilmiştir. **Bulgular:** İstatistiksel analizler sonucunda deney grubunun sürekli kaygı ön test-son test puanları arasında anlamlı farklılık bulunmuştur ( $t: 2.216; p < 0.05$ ). Bununla birlikte, bilişsel kaygı ( $t: 1.106$ ), bedensel kaygı ( $t: -0.952$ ), kendine güven ( $t: -0.297$ ) ve durumluk kaygı ( $t: 0.596$ ) ön test son test puanları arasında anlamlı fark elde edilememiştir. **Sonuç:** Zihinsel hayal etme antrenmanları sporcuların kaygı seviyelerinin düzenlenmesi için kullanılabilir, ancak bu antrenmanlardan yeterince faydalanılabilmesi için daha fazla çalışma yapılmalıdır.

**Anahtar Kelimeler:** Zihinsel hayal etme antrenmanı; kaygı; futbol

Together with increasing performance in sport, the necessity in sport psychology has been understood. Until psychological factor effects on performance came out, sport psychologists had helped to athletes. It can settle various psychological training techniques in physical training which can be done intensively, these are helped to increase athletes' endurance, to organize preparing, and to speed up recovery.

The most tackled topics by sports psychologists and researchers are to struggle against anxiety which affects performance negatively. Anxiety is a multi-dimensional subject involving somatic, psychological and behavioral processes. According to Zaichkowsky (1982); anxiety is subjective feeling of fear, nervousness, irritability resulting the over activation of Autonomy nervous system.<sup>1</sup> On the other hand, Anshel and his colleagues (1991) defined anxiety as subjective feeling of tenseness associated with the perception of apprehension and physical stimulation.<sup>2</sup> It is also distinguished between two types, one type of anxiety called trait anxiety, represents the general level of anxiety. The other type, state anxiety, refers to temporary situational anxiety.<sup>3,4</sup> Besides these, Martens and his colleagues developed an inventory studying competition state anxiety in 3 subscales: cognitive, somatic and self- confidence.

The imagination drill, a technique of coping with anxiety occurring before the competition is frequently used by sports psychologists. Imagination of a sportsperson is to fantasy himself/herself in a specific situation or activity.<sup>5</sup> On the other hand, Richardson (1966) defined imagination as being consciously aware of our actual sensual and perspective responses. In cases where there are no responses, we refer to so-called sensual and perceptiveness by imagination.<sup>6</sup>

Many research studies have been conducted in different sports branches. In one of those studies performed by Leahy, Cheng and Xueguin (1999), the effect of imagination training on the decreasing of cognitive and somatic anxiety has been observed and the effect of personal differences searched in the study, it was found out that desensitization, practices the come of lowering anxiety, had an equal effect on the applicants no matter what their cognitive

styles are.<sup>7</sup> On the other hand, in a study conducted by Weinberg, Seabourne and Jackson (1987), they exhibited that there were no effects of imagination and relaxation on being stimulated.<sup>8</sup> In a different research study performed with the participation of young roller skaters, Vados, Hall and Maritz (1997), it was found that imagination was an effective strategy to bring anxiety under control.<sup>9</sup>

As an outcome, the aim of this research is to study the effect of imagination on anxiety.

## MATERIAL AND METHODS

Pre-test, post-test with control group

Groups	experiments	measure	measure
Exp.	Pre-test	test	post-test
Control	pre-test	-	post test

## SUBJECTS

Experiment subjects were young football players who played in super young team and super young league. Subjects were separated in two groups as a control group and experiment group. Kocaelispor super young team was the control group, Sakaryaspor was the experiment group. Total subject number was 36, average of subjects ages, Sakaryaspor young team  $18 \pm 0.76$ , Kocaelispor young team  $17.66 \pm 1.02$ .

## DATA COLLECT TOOLS

STAI VE CSAI-2 was used to collect data to measure anxiety.

### CSAI-2 (Competitive State Anxiety Inventory)

Competitive state anxiety inventory is used to measure cognitive anxiety, somatic anxiety and self confidence. It was formed by Martens, Burton and Vealey in 1981 and there were 27 questions in this inventory. CSAI-2 was translated into Turkish and validity and reliability were done by Koruç in 1998. Translated reliability cognitive anxiety .925, somatic anxiety .928, self confidence .950, test-retest in a month, cognitive anxiety, 961, somatic anxiety .929, cognitive anxiety .929, self confidence .949. As a result of the comparison, there wasn't found a difference between STAI and CASI-2, ANOVA ( $26.1 = .69$ ;  $p (.05)$ ). This finding was received as criterion validity. Inventory loses decision near competition as construction validity. It was

found for two weeks with row, .561, .672, .541, end of two days with row, .230, .223, .321.

**STAI (State Trait Anxiety Inventory)**

STAI was developed to find state anxiety, trait anxiety level, by Spielberger and his colleges. It is a self evaluation inventory which implies two different kinds of criteria as trait anxiety and state anxiety. The emotions and the behaviors that have been described in the state anxiety inventory matters answered as choosing one of the alternatives according to the level of intensity of this kind of experiences. The alternatives are (1) never (2) occasionally (3) often (4) always.

**COLLECT DATA**

In the study which was aimed to investigate the effects of the imagery training on anxiety in football players, data was collected from pre-test, in the morning of the match, two hours before the match and in the players' dressing rooms. Later mental imagery exercises have made with experiment group that consists of 15 times of 20 minutes. The mental imagery exercises started with breathing exercises after that was going on single dimensional imagery and maintained with three dimensional imageries. After those exercises, anxiety tests were applied in the morning of the match and 2 hours earlier. According to these explanations data were collected by pre-test and post-test.

**STATISTICAL ANALYSES**

To analyze data description of statistics techniques, to find normality Kolmogorov-Smirnov test, to find difference between pre-test and post-test paired-samples t test, to find the differences between groups student t test were used. Significance was set at the  $p < 0.05$  level. Data was analyzed SPSS for Windows.

**RESULTS**

There wasn't found a significant difference between control group's ages as statistical ( $p > 0.05$ ) (Table 1).

There wasn't found a significant difference between control group's pre-test and post-test anxiety points' as statistical ( $p > 0.05$ ) (Table 2).

When comparing experiment group's pre-test and post-test point, the only significant difference that was found was between experiment groups' trait anxiety's pre-test point and post-test point as statistical ( $p < 0.05$ ). No significant difference was found between other anxiety points' as statistical ( $p > 0.05$ ) (Table 3).

**DISCUSSION**

In performance sports which achievement is of primary goal, today, sports persons have to compete in objective and subjective competition atmosphere. As Martens, Burton and Vealey (1990) pointed out objective competition atmosphere is the situation which affects a competition such as playground, spectators, referee, and weather condition.<sup>10</sup> Subjective competition atmosphere is, on the other hand, negative feelings towards the competition. These are all cited as competition anxiety.

Anxiety is defined as a varied combination of emotional stimuli involving nervousness, unpleasant and negative thoughts.<sup>10</sup> The objective of this study is to research the effect of imagination training.

**TABLE 1:** The difference between controls group and experiment group ages

	n	Exp. group	Control group	t	p
Age	18	18 ± 076	17.66 ± 1.02	1.102	0.27

$P > 0.05$ .

**TABLE 2:** The difference between control group's pre-test and post test point.

	n	Pretest	Posttest	t	p
Cognitive Anxiety	18	19.72 + 2.46	19.66 ± 3.19	1.106	0.28
Somatic Anxiety	18	13.94 + 2.41	13.55 ± 2.25	-0.952	0.35
Self Confidence	18	30.27 + 4.14	30.61 ± 3.97	-0.297	0.77
Trait Anxiety	18	48.55 + 6.93	46.11 ± 2.82	1.386	0.17
State Anxiety	18	46.0 + 4.45	46.77 ± 4.22	-0.914	0.54

$P > 0.05$ .

**TABLE 3:** The difference between experiment group's pre-test and post test point.

	n	Pretest	Posttest	t	p
Cognitive Anxiety	18	18.66 + 3.02	17.77 + 2.34	1.106	0.28
Somatic Anxiety	18	13.33 + 3.10	14.16 + 2.30	-0.952	0.35
Self Confidence	18	32.11 + 3.47	32.38 + 2.27	-0.297	0.77
Trait Anxiety	18	46.38 + 6.65	42.61 + 2.17	2.216	0.04*
State Anxiety	18	46.0 + 4.75	45.22 + 3.60	0.596	0.55

\*p < 0.05.

ning on footballers. In order to exhibit a high performance, footballers should not only do physical training but also mental training which enables them to optimize anxiety level in a study intended to observe the effects of mental training on decreasing physical and cognitive anxiety.

Leahy, Cheng and Xueguin, (1999) pointed out that desensitization is an imagination training, that helps anxiety level to decrease.<sup>7</sup> These findings obtained in the research by Leahy, Cheng and Xueguin. On the other hand, in our imagination training had just an effect on cognitive and trait anxiety. Special studies on how to cope with anxiety have revealed that somatic and cognitive anxiety at lower level and also higher level self confidence improves sports performance.

In those mental training studies, it was found that successful sports persons were fewer skeptics, of low anxiety and have a great self- confidence in comparison with less successful sportspersons. Those kinds of studies are suggested so as to lessen the negative effects of somatic and cognitive anxiety on self- confidence and performance<sup>11-13</sup> As for the findings obtained in our study, we haven't found any statistically significant effects of imagination training on self confidence suggested by above-mentioned studies. We only concluded that it had an effect on cognitive anxiety. We would say that prolonging of that study for 3 months or over could increase its researched parameters on imagination training. Since family and social lives of the subjects cannot be brought under control in the study, those factors may have affected the research results. But, as we took the measurements before competitions, we took the anxiety scores in the measurement as competition anxiety.

Weinberg, Seabourne and Jackson (1987) engaged 92 male subjects of karate performance in their

study to find out the effect of imagination and relaxation on being stimulated.<sup>8</sup> As a result, we found no effects of relaxation and imagination on being stimulated. It was also reported that subjects found imagination practices clear, fluent, and manageable.

The objective of the study performed by Vadoz, Hall and Maritz (1997) in which 57 American Junior roller skaters were engaged was to indicate imagination was an effective means to control competition anxiety.<sup>9</sup> An individual's ability is subjected to the use of imagination. In addition to this, self confidence and kinesthetic imagination were related to the medal ranking. Moreover, imagination and self-confidence are co-related. By the same token, the sportsperson benefiting from imagination training turned out to be self confident.

In a research study carried out by Solmon, Hall and Haslam (1994) which 362 footballers took part as applicants, it was indicated that footballers applied imagination drills so as to get motivated to the competition rather than cope with anxiety.<sup>14</sup>

In another study with the participation of male gymnastic performers by Deceria (1977), the effect of mental drills on anxiety was studied and it was reported that mental drills decreased the anxiety level in novice players.<sup>15</sup> The reason why we had similar results could be that we had studied with young sportspersons. According to the findings, we would suggest that early imagination drills will help younger players to cope with psychological problems more easily. Finally, The study which was research by Rogers, W., Hall, C., & Buckholz, E. (1991) Figure skaters (n= 29; mean age 13.7 yr) were divided into imagery only, verbal training, and a matched control group.<sup>16</sup> Subjects were assessed for imagery ability, imagery use, and free-skating performance before and after a 16 weeks training program. Skaters trained in imagery

use were more likely to use imagery before and after practice, to visualize skill elements more easily, and to see themselves winning more often. Their ability to “feel” themselves skate also improved more than in the verbal training and control groups. Skaters who became better at imagery also became more successful at completing their program elements, particularly the more difficult ones.

The study which was researched by David Fletcher and Sheldon Hanton (2001), investigate equivocal findings within the literature addressing the relationship between competitive anxiety responses and psychological skills.<sup>17</sup> Non-elite competitive swimmers ( $N= 114$ ) completed a modified version of the Competitive State Anxiety Inventory-2 (CSAI-2) which examined both intensity and direction dimensions prior to racing. Result of the study, revealed significant differences in the CSAI-2 scores between the high and low usage groups for the skills of relaxation, self-talk and imagery and result of the study indicated significant differences on all CSAI-2 subscales for relaxation groups, and differences on cognitive intensity, somatic direction and self-confidence for self-talk groups, and self-confidence for the imagery groups.

Consequently, it is seen that the studies performed on the imagination drills are usually focused on its effect on imagination and anxiety. Given anxiety level is a factor determining performance and sportspersons are under great stress, we should place more room for imagination drills to enable them to perform better. By having a look at the findings of our research, we could come to the same conclusion. With the important advances in performance, sports psychology has gained importance. As psychological factors have been proved to have an effect on performance, sports psychologists have taken part in sport activities. Various psychological training techniques within intensive physical training, motivation and improvement exercises are such activities.

## CONCLUSION

Mental imagery training can be used for regulating anxiety level but in order to benefit much from mental imagery training, much more work out is needed. Additionally, teaching imagery skills increases the use of imagery and is associated with performance improvements, particularly in difficult skill elements.

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