The Effect Of Imagery And Modeling On Anxiety In Netball Athletes

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Abstract. This study examined and compared the effects of imagery training combined with modeling on anxiety in netball athletes. 30 netball athletes, were chosen by using purposive sampling technique. Divide the population into 2 groups of 15 athletes each. The experimental group practiced netball training with imagery combined modeling training, the control group only practiced netball. The duration of the training three times a week for eight weeks. Using Revised Competitive State Anxiety Inventory-2R Test (CSAI-2R) measured anxiety and self-confident. And Polar H10 measured to the degree of heart rate variability for accuracy. All player and Variable data was measured by mean standard deviation t-test independent and One-way ANOVA with repeated measures. The results found that, the comparison of the experimental group and the control group were significant difference, at the .05 level in SD1 HF and LF/HF ratio in 8 weeks. The anxiety and self-confident in experimental group were significantly difference, at the .05 level between pre-test, 4 week and 8 weeks. There is significantly difference between pre-test and 8 weeks of self-confident in control group. The results showed that the experimental group who received imagery combined modeling training had decreased anxiety and increased self-confident more than the control group.

Keywords: imagery, modeling, heart rate variability, anxiety, self-confident, netball

1 Introduction

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Netball is a sport known all around the world and is very popular. It is a sport that can be played by both men and women. But the most popular will be more female athletes than male athletes. It is a sport that can improve physical performance and improve overall personality to human relationships in socializing. Netball is a sport that requires skills and techniques to play such as shooting goals, receiving - passing the ball, defending, running to change direction, and intercept the ball. In the performance of various skills in netball, there is one factor that affects the performance of athletes in training and competition is anxiety.

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Anxiety is a human emotional state that can always be experienced in daily life. It is a complex emotion in which a person responds to stimuli or threats according to their perception and interprets the results according to their own views. Causing physical or mental discomfort, both physical and mental changes. However, the changes will occur depend on the severity of the anxiety caused by the participating athletes. Therefore, the participants will be overwhelmed with anxiety both from the athletes themselves and the competitive environment. Anxiety may affect athletes both positively and negatively depending on their mental state, anxiety level of the athlete. If the athlete has no anxiety at all or has a moderate level of anxiety, it will help the athlete to fully demonstrate his or her athletic ability. But if an athlete is over-anxious, it may reduce the athlete's performance unlike before in practice.

A popular method of measuring physical anxiety currently is Heart Rate Variability (HRV), It is an assessment of the function of the autonomic nervous system that controls the heart. It can be estimated from the variance of heart rate, which is the variation in the duration of each heartbeat. It is known that physical symptoms caused by anxiety include increased heart rate, increased blood pressure, deep breathing and frequency, muscle tension, muscle twitching, etc. and mental symptoms such as confusion, disorientation, lack of concentration, and hesitation.[1] In highly capable or successful athletes, there are three main components: physical, skill, and mental. The psychological development of sports psychology is because the athlete's mind is delicate. It can change according to the athlete's situation and emotional state. If an athlete is trained in sports psychology skills, it allows athletes to control their minds and emotions in various situations properly.

In addition to imaginary training, imitation is another method that results in behavioral change, according to Professor Bandura[2] said that most of our learning comes from modeling. This is different from experience learning that requires trial and error because in addition to wasting time It can still be dangerous in some behaviors to learn through that example A single subject is able to convey both thoughts and expressions simultaneously. This is a behavior modification based on observation or imitation to modify both behavioral and cognitive skills to develop better.

From the foregoing, it was found that imagery and imitation had an effect on behavior modification in terms of skill building and anxiety reduction. The researcher therefore had an idea to study the effect of imagery and modeling on anxiety in netball athletes and how imagery and modeling affects anxiety in netball athletes. As a guideline for further improvement and development of visualization and imitation skills of netball.

2 The Purpose of Research

To compare the effect of imagery and modeling on anxiety in netball athletes.

3 Method

Participants

30 netball athletes, were chosen by using purposive sampling technique. Divide the population into 2 groups of 15 athletes each group, The experimental group practiced netball training with imagery combined modeling training, the control group only practiced netball.

Instruments

a. Imagery skills training program

The relaxation imagery training program is a relaxation sequence. The experiment with recording the imaginary sound to MP3, remember to training in a quiet room. clear air, and the temperature was controlled at 25 degrees for a period of 8 weeks, 3 days a week, i.e. Monday, Wednesday and Friday. each day for 10 minutes.

b. Modeling training program

The relaxation video program is used to experiment with the experimental group for 8 weeks, 3 days per week, on Monday, Wednesday and Friday. It takes 10 minutes to watch the video.

c. Netball training program

The netball training program both the experimental group and the control group performed regular netball training.

Procedure

Before starting research, all participants signed a letter of consent to participate in the research project after they were explained the purpose of the research, the benefits of being able to conduct research, the risks that may arise at the time of participation, and the withdrawal or termination of participation. The samples were netball athletes ages between 20-30 years, 30 people, divided into

2 groups of 15 people each, which will consist of: The experimental group is to training imagery programs along with modeling and netball training program, and the control group netball training program normally does not received imagery program along with modeling. Each group trained 3 times a week for 8 weeks. A total of 3 anxiety measurements were performed before, after the 4th week, and after the 8th week. Revised Competitive State Anxiety Inventory – 2: CSAI – 2R had participants do 10–15 stretches and warm -up 10 minutes. The researcher and two research assistants were attached to the heart rate variability (HRV) monitor and the Polar H10 Heart Rate Sensor–Black to measure the pulse level for accuracy. Then practice according to the netball training program.

Data Analysis

The results of the heart rate variability test of netball athletes before training after the 4th and 8th week of training of the control group and the experimental group were analyzed with the packaged program. Calculate the mean and standard deviation of your heart rate variability. In the experimental and control groups, Pre-test, after the 4th week of training and after the 8th week of training, the mean difference and the standard deviation of the heart rate variability were compared heart within the experimental and control groups, t-tests were independent, and anxiety and self-confidence were compared by a repeat-measure one-way analysis of variance. (Repeated-Measure One way analysis of variance: ANOVA)

4 Results

Table 1. Compare the mean, standard deviation, and t-test independent of the heart rate variability of both groups of athletes. It was found that Mean of heart rate variability in both groups. After 8 weeks of training, the variance 1 (SD1), high frequency (HF) and low frequency / high frequency ratio (LF/HF ratio) were statistically significant at .05, indicating that the training an imagery and modeling at week 8 had an effect on heart rate variability.

Heart rate variance		Experimental G.		Control G.		t	p
		$\bar{x}$	S.D.	$\bar{x}$	S.D.		
Heart Rate (HR)	Pre-test	61.14	5.49	59.79	5.98	.626	.537
	Weeks 4	60.43	5.52	60.29	6.46	.063	.950
	Weeks 8	60.29	5.94	60.43	5.95	-.064	.950
Variance 1 (SD1)	Pre-test	23.11	5.58	23.40	5.35	-.138	.891
	Weeks 4	24.05	6.42	24.72	4.02	-.332	.743
	Weeks 8	28.79	7.20	23.82	5.39	2.07	.049*
Variance 2 (SD2)	Pre-test	54.90	5.03	55.14	4.31	-.137	.892
	Weeks 4	52.51	3.84	54.64	3.65	-1.51	.144
	Weeks 8	51.71	4.39	53.03	3.94	-.833	.412
Low frequency (LF)	Pre-test	415.79	122.77	401.56	82.41	.360	.722
	Weeks 4	419.14	126.07	384.66	78.98	.867	.394
	Weeks 8	359.42	134.66	377.71	71.97	-.448	.658
High frequency (HF)	Pre-test	261.74	84.72	277.63	138.11	-.367	.717
	Weeks 4	301.35	96.10	271.77	125.76	.699	.491
	Weeks 8	387.95	93.76	275.67	121.39	2.74	.011*
LF/HF ratio	Pre-test	165.36	38.32	160.39	38.55	.342	.735
	Weeks 4	143.33	22.82	156.66	44.66	-.994	.332
	Weeks 8	93.52	26.64	150.64	39.82	-4.46	.000*

*p <.05

Table 2 Compare the mean somatic anxiety, cognitive anxiety and self-confidence Pre-test, Weeks 4 and Weeks 8 of the experimental group by analyzing the one-way variance of the repeat measurement type. It was found that the experimental group had somatic anxiety, cognitive anxiety, and self-confidence pre-test, weeks 4, and weeks 8, it was statistically significantly different at .05, so it tested the difference in pairs using Bonferoni's method.

*p <.05

Variable	Variance	SS	df	MS	f	p
Somatic anxiety	Period/Time	558.978	2	279.489	330.353*	.000
	Discrepancy	23.689	28	.846		
Cognitive anxiety	Period/Time	501.511	2	250.756	130.451*	.000
	Discrepancy	53.822	28	1.922		

Self-confidence	Period/Time	691.244	2	345.622	185.787*	.000
	Discrepancy	52.089	28	1.860		

Table 3 Test results for individual differences in somatic anxiety, cognitive anxiety and self-confidence of the experimental group. It was found that the experimental group had somatic anxiety, cognitive anxiety and self-confidence Pre-test, Weeks 4 and Weeks 8, the statistically significant difference of .05 showed that training an imagery and modeling as a result, the experimental group had decreased somatic anxiety, cognitive anxiety and self-confidence increased.

Variable		$\bar{x}$	Pre-test	Post 4	Post 8
			28.27	25.13	19.73
Somatic anxiety	Pre-test	28.27	-	3.133*	8.533*
	Weeks 4	25.13		-	5.400*
	Weeks 8	19.73			-
			30.27	25.47	22.13
Cognitive anxiety	Pre-test	30.27	-	4.800*	8.133*
	Weeks 4	25.47		-	3.333*
	Weeks 8	22.13			-
			20.47	25.33	30.07
Self-confidence	Pre-test	20.47	-	-4.867*	-9.600*
	Weeks 4	25.33		-	-4.733*
	Weeks 8	30.07			-

*p <.05

Table 4 Compare the mean somatic anxiety, cognitive anxiety and self-confidence pre-test, weeks 4 and weeks 8 in the control group by analyzing the one-way variance of the repeat measurement type. It was found that the control group had somatic anxiety and cognitive anxiety was pre-test, weeks 4 and weeks 8, there was no difference. In self-confidence was statistically significantly different at .05, The differences were tested individually by the Bonferroni method.

*p <.05

Variable	Variance	SS	df	MS	f	p

Somatic anxiety	Period/Time	7.644	2	3.822	3.961	.031
	Discrepancy	27.022	28	.965		
Cognitive anxiety	Period/Time	5.733	2	2.867	4.239	.025
	Discrepancy	18.933	28	.676		
Self-confidence	Period/Time	8.711	2	4.356	6.792*	.004
	Discrepancy	17.956	28	.641		

Table 5 The results of the individual differences test for self-confidence of the control group. It was found that the control group had a statistically significant difference in self-confidence on pre-test and post 8 at .05 only one pair.

Variable		$\bar{x}$	Pre-test	Post 4	Post 8
			20.07	20.47	21.13
Self-confidence	Pre-test	20.07	-	-.400	-1.067*
	Weeks 4	20.47		-	-.667
	Weeks 8	21.13			-

4 Discussion

Comparison between the experimental group and the control group with t-test of the heart rate variability A statistically significant difference was found at the .05 level in variance 1(SD1), high-frequency (HF) and low -frequency / high-frequency ratios (LF/HF ratio) after 8 weeks of training. The difference between the experimental group and the control group between the group receiving the image training program along with the simulation and the group without the training. Demonstrates the benefits and necessity of practicing sports psychology skills with athletes. in terms of relaxation, reducing anxiety[3] was said that the group of athletes who received sports psychology skills benefited more than those who did not.

The experimental group had somatic anxiety, cognitive anxiety and self-confidence pre-test, weeks 4 and weeks 8, it was statistically significantly different at .05 level. When comparing the mean, it was found that the experimental group had somatic anxiety, cognitive anxiety and self-confidence pre-test, weeks 4 and weeks 8 were significantly different at the .05 level. As a result, the experimental group had somatic anxiety, cognitive anxiety and self-confidence increased as[4] said each method of mental training affects the ability to practice skills as well as including imagery training. If trained with physical skills training, it may be more effective than physical skills training alone. It can be said that imagery training is a training in sports psychology that improves skills in netball, as well as reducing anxiety and building self-esteem for athletes. As[5] said imagery is the creation of images or flashbacks to create experiences in the mind. It improves athletic ability. It can help to an understanding of various events helps to regulate emotions reduce anxiety, anger or pain helps to concentrate build self-confidence and help in analyzing and reviewing various sports skills.

According to this study, the heart rate variability of experimental athletes who received imagery training along with modeling and Netball training with control athletes who received only training in netball was different after the 8th week. It may be concluded that imagery training with modeling has a beneficial effect on athletes in reducing stress, reduce anxiety and increase concentration and confidence in athletes. It also has the effect of helping athletes recover their physical condition (Recovery) from training and competition. [8] This study wanted to demonstrate the importance and usefulness of applying sports psychology skills to athletes. It is necessary to create a training program in accordance with the need individual athlete preferences. If athletes have different preferences, they should also create different imagery training programs should also be created in accordance with [9] said that coaches need to know the mental differences of individual athletes. It has to be applied appropriately for the best benefit to athletes.

References

[1] Bunveerabut S. Sport psychology. Chonburi: College of Physical Education, Chonburi campus ; 1998.

[2] Bandura, A. (1969). Principles of behavior modification. New York: Holt, Rinehart and Winston.

[3] Kanjanakit S, Jantharuthai S. Sport psychology : Concept of theory into practice, Bangkok: Chulalongkorn University; (1999).

[4] Weinberg, R. S.; and Gould, D. (1996). Foundations of Sport and Exercise Psychology. IIIinois: Human Kinetics Publishers.

[5] Patthanamontree C.(2003). Sports psychology and its application. Sports science journal 4 (43) : 14-15.

[6] Weinberg, R. S.; and Gould, D. (1999). Foundations of Sport and Exercise Psychology. IIIinois: Human Kinetics Publishers, Inc.

[7] Vealey, R. S. (1986). Conceptualization of sport-confidence and competitive orientation: Preliminary investigation and instrument development. Journal of Sport Psychology, 8(3), 221–246.

[8] Mark Froce. (2008). The Autonomic Nervous System: What Is It? Why Should I Care.The Elements of Health functional & natural healthcare. Scottsdale, Arizona, USA.

[9] Sports Authority of Thailand (2006). Advanced National Futsal Trainer Course . Bangkok.