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The effect of optimism on competitive state anxiety and state confidence among Korean youth badminton national team member

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Abstract

The purpose of this study was to investigate the differences in competitive state anxiety and state confidence depending on the optimism of Korea national youth badminton team players. Optimism, competitive state anxiety and state confidence are known to be closely related to sports performance, so analyzing the relationship between these three variables can be considered a meaningful task. Accordingly, this study divided 95 Korean youth badminton national team members into high and low optimism groups and examined the differences in their competitive state anxiety and state confidence. As a result of data analysis, it was found that there were differences in cognitive and physical competitive state anxiety and state confidence depending on the level of optimism. In other words, players with higher optimism have lower cognitive and physical competitive state anxiety and higher state confidence

keywords: badminton, optimism, competitive state anxiety, state confidence

1. Introduction

Sports performance is determined by a combination of physical and psychological conditions depending on the characteristics required by the sport [1][2]. Badminton is a sport that requires strong mental preparation along with high physical ability. During a game, players must exert quick judgment, psychological agility and concentration, but in high-intensity sports such as badminton, anxiety can negatively affect these psychological factors and reduce physical performance, which can have a negative impact on the outcome of the game. Therefore, it is essential to identify the causes and effects of anxiety that badminton players experience during games and to study ways to effectively manage it.

Confidence is the opposite concept of anxiety. Confidence refers to a psychological state in which an individual positively evaluates his or her own abilities and value and believes that he or she can succeed in a given task or challenge. Confidence is known to be one of the factors that have an important influence on an athlete's performance in sports situations, and high confidence is known to play an important role in producing positive results even in difficult situations. For badminton players, confidence has a direct impact on improving performance, which can ultimately have a significant impact on the outcome of the game. Therefore, it is important to understand the psychological characteristics of athletes with high confidence.

Because anxiety and confidence contribute significantly to sports performance, it is necessary to explore and understand the psychological variables that affect these variables. One of them is optimism. Optimism refers to the tendency of an individual to have positive expectations about the future and believe that they can overcome difficulties when faced with them. In fact, Seligman's book states that optimistic players are less depressed and anxious than pessimistic players, and that optimistic people are more constructive, have greater perseverance, and are faster and more hopeful when it comes to recovery from failure [3].

For athletes, optimism plays an important role in reducing anxiety before competition, recovering quickly after failure or mistakes, and maintaining confidence. And anxiety and confidence play a significant role in an athlete's preparation and performance process. Anxiety can hinder optimal performance by reducing an athlete's concentration before or during a game, while confidence acts as a key factor in driving positive game results.

In addition, optimistic athletes effectively manage stress during competition, maintain psychological stability through positive self-talk, and set long-term goals and continuously pursue them. Therefore, optimism serves as an important motivating factor in helping humans achieve higher levels of achievement.

The purpose of this study is to analyze the differences in anxiety and confidence according to the level of optimism of badminton players, confirm whether there are actual differences, and obtain basic data for developing an educational program to cultivate optimistic athletes based on the results.

In order to achieve the purpose of this study, the following research hypotheses were established. First, there will be differences in cognitive state anxiety depending on the level of optimism of badminton players. Second, there will be differences in physical state anxiety depending on the badminton player's level of optimism. Third, there will be differences in state confidence depending on the badminton player's level of optimism.

2. Research Methods

2.1 Participants

The participants of this study were 95 middle and high school male and female players who participated in the 2018 youth national team summer camp training hosted by the Korea Badminton Association. The Korean youth national badminton team is comprised of middle and high school students. Each year, 80 to 100 male and female players are convened for approximately 2 to 4 weeks during the summer and winter vacations, taking comprehensive consideration of their performance and future potential. The general characteristics of the research participants are shown in <Table 1>.

Looking at the specific characteristics of the research participants, as shown in Table 1, depending on gender, there were 18 male and 17 female middle school students, 30 male and 30 female high school students.

And there were 14 1st-year, 19 2nd-year, 15 3rd-year middle school students, 14 1st-year, 19 2nd-high, and 14 3rd-year high school students.

Lastly, there were 48 high optimists and 47 low optimists.

2.2 Questionnaire for data selecting

2.2.1 Optimism

The optimism questionnaire used in this study is the Revised Life Orientation Test (LOT-R) developed by Scheier, Carver, and Bridges [4] and adapted by Shin [5].

This questionnaire, LOT-R, which measures temperamental optimism, consists of a total of 10 questions, and the response method for each question is a scale from 0 for 'not at all' to 4 for 'very much'. Among the 10 questions, 3 questions measure generalized positive expectations about the results, 3 questions measure pessimistic expectations, and the remaining 4 questions were inserted to prevent the test's intention from being understood. Among these questions, only the sum score of 6 questions is used for data processing, and the

Table 1. General Characteristics of research participants

	School		Frequency	%
sex	Middle	Male	18	51.4
		Female	17	48.6
	High	Male	30	50.0
		Female	30	50.0
Grade	Middle	1	14	29.2
		2	19	39.6
		3	15	31.3
	High	1	14	29.8
		2	19	40.4
		3	14	29.8
Optimism		High	48	50.5
		Low	47	49.5

higher the sum score of the questions, the higher the optimism of the research subject. Therefore, the score range is from 0 to 24 points. In the study by Jang [6], the internal consistency (Cronbach's α) coefficient was .78, and in this study, In this study, reliability was proven to be .81.

2.2.2 Competitive state anxiety and state confidence

The competitive state anxiety and state confidence questionnaire used in this study was the CSAI-2 (Competitive State Anxiety Inventory-2) developed by Martens, et al [7] and used by Kim [8]. This questionnaire has been used in many domestic studies and is known as a scale with high reliability and validity. The sub-components of CSAI-2 are comprised of cognitive state anxiety, somatic state anxiety, and state confidence, and each item is composed of a 4-point likert scale. These three sub-factors have a total of 27 questions (9 questions each), and the higher the average score, the higher the degree of the factor. In the study by Kim & Jung [9], the reliability was α = .86 for cognitive state anxiety, α = .81 for somatic state anxiety, and α = .84 for state confidence, and in this study, .89, .87, and It was found to be .87, proving to be a relatively reliable measure.

2.3 Data collection

In 2018, the researcher and one research assistant visited the badminton youth national team summer camp training center held in Hwasun-gun, Jeollanam-do, South Korea and conducted a survey. I asked an acquaintance I know well to contact the head coach, explained the purpose and purpose of the study, and proceeded with the study through the consent process.

The survey was conducted using a self-report method in a classroom within the training center during break time after finishing the day's work. The purpose of the study, which had been explained to the coach, was informed to the players and their consent was obtained. Additionally, we asked them to take the survey honestly and faithfully, and we made an effort to increase the reliability of the study by providing detailed and easy explanations to players who had difficulty understanding the test questions. The survey time took approximately 15 minutes, and the questionnaire was immediately get it back on the spot after the survey was completed.

2.4 Data analysis

The data of this study were analyzed using the PASW 23.0 window program. Frequency analysis was conducted to identify trends in the data, and a reliability test was conducted to determine the reliability of the questionnaire. Additionally, an independent t-test was conducted to determine whether there were differences in cognitive and physical competitive state anxiety and state confidence depending on the players' level of optimism (high or low). The method of classifying the level of optimism into high and low was to assign those above to the high group and those below to the low group based on 50% of the survey score distribution. All statistical significance levels were set at $\alpha=.05$.

3. Results and Discussion

3.1 Differences in competitive state anxiety depending on the level of optimism

As shown in Table 2, the average score of cognitive state anxiety for the group with high optimism was 2,1516, and for the group with low optimism, it was 2,6028. The average score of physical state anxiety for the group with high optimism was 1,9294, and for the group with low optimism, it was 2,4787.

Accordingly, as a result of conducting a statistical difference test, the difference in competitive state anxiety according to the level of optimism of the Korean youth national badminton team, the results showed that depending on the level of optimism, cognitive competitive state anxiety (t=-3,479, p<.001) and somatic competitive state anxiety (t= -4.975, p<.000). Both showed significant differences, so the first research hypothesis set in this study was accepted. In other words, players with high optimism experienced low competitive state anxiety, while players with low optimism experienced high competitive state anxiety. This result supports the existing argument that athletes with high optimism maintain a positive attitude even in stressful situations before a game, suggesting that they can effectively manage anxiety.

Table 2. t test results for differences in competitive state anxiety

according to level of optimism

	Optimism	N	M	sd	*t*
Cognitive state anxiety	High	48	2.1516	.59931	-3,479*
	Low	47	2.6028	.66374	
Somatic state anxiety	High	48	1.9294	.42197	-4.975**
	Low	47	2.4787	.63147	

*p<.001 **p<.000

3.2 Differences in state confidence depending on the level of optimism

As shown in Table 3, the average state confidence score of the high-optimism group was 2,4734 points, and the average state confidence score of the low-optimism group was 1,8664 points. Accordingly, as a result of conducting a statistical difference test, the difference in state confidence according to the level of optimism, players with high optimism had significantly higher state confidence than players with low optimism (t=.5.916, p<.000). The second hypothesis of this study was also accepted. This result supports the existing argument that athletes with high optimism evaluate their abilities and values positively and have the belief that they can succeed in given tasks or challenges.

All national team players experience tremendous stress, including difficult training and practice, competition with fellow players for starting positions, pressure from competition, expectations from those around them, and the media. This perception of stress and coping style can have a significant impact on an athlete's performance [10][11][12]. Even with the same stress, each person has a different direction and level of acceptance depending on their cognitive structure. According to Seligman, optimists are less vulnerable to stress than other people, and this optimism can be improved through training [13][14].

The results of this study suggest that success in sports may be related to differences in optimism. This is consistent with previous research showing that optimistic people are more successful and that optimism can be associated with better outcomes [15][16].

Table 3. t-test results for differences in state confidence according to level of optimism

	optimism	N	M	sd	t
state confidence	high	48	2.4734	.59339	5.916**
	low	47	1.8664	.38710	

**$p<.000$

4. Conclusion

This study analyzed the differences in competitive state anxiety and state confidence according to the level of optimism of youth badminton players. As a result of the study, it was confirmed that optimism plays an important role in reducing competitive state anxiety and improving state confidence, which can ultimately contribute to improving athletes' performance. These results suggest that psychological interventions to promote optimism may be effective in improving badminton players' psychological health and performance. Therefore, it seems necessary to develop specific programs to increase optimism and conduct research to verify their effectiveness.

Acknowledgement

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