

The Effect of Tennis Participation on Optimism and Aggression

¹Kim, Deok-Jin

¹Associate Professor, Department of Sport and Health Care, Namseoul Univ., Korea
E-mail address: kdj275@nsu.ac.kr

Abstract

The purpose of this study was to find out how tennis participants' participation affects their optimism and aggression. A total of 249 (male: 163, female: 86) subjects were studied. The Revised Life Orientation Test (LOT-R) developed by Scheier, Carver, and Bridges (1994) was used as an optimism test, and the Aggression Questionnaire developed by Buss and Perry (1992) was used as an aggressiveness test. As data analysis methods, one-sample t-test, Pearson's correlation analysis, and simple regression analysis were performed. As a result, first, those who participate in tennis were more optimistic than those who do not. Second, those who participate in tennis were less aggressive than those who do not. Third, optimism affects physical aggression, anger and hostility negatively

Keywords: Tennis Participation, Optimism, Aggression

1. INTRODUCTION

A long life has been the main interest of everybody for all times and places. Researches on the impact of exercise on physiological, physical and biological aspects of human beings in the past century have found that exercise on a regular basis exerts a positive effect of all areas of human body [1]. In the field of exercise psychology, which has recently attracted much interest, it has also been reported that exercise has a positive influence on human beings' mind, emotion and behavior [2][3].

Recognition of the positive effect of exercise has led an increasing number of people to participate in an increasing number of exercise/sport clubs. A wide spread of internet and SNS(Social Network Services) has also helped such club systematically manage their members by becoming a place for effective communication and for enhancing interpersonal relationships as well. By participating such sport clubs, people expect to improve their competence and to meet a new group of other people, away from their jobs and studies. Their club activities can be strengthened through various events and social gatherings to promote friendship [4].

Tennis was introduced to Korea in the late 19th century and it is now one of the most popular sports in Korea: 4,422 clubs and 219,446 registered members. People, male or female and young or old, can play at their appropriate levels of physical conditions and skills. However, if competition gets too intense as possibly happens in other sports, players may show excessive aggression toward their opponents.

In particular, club members often play in-club matches without a referee, which can easily lead to controversial calls about in and out of the baseline and sideline. Such circumstances might often cause physical fights and suspension of matches. Thus, tennis players and participants are expected to possess and display sportsmanship, above all, and optimistic attitude that does not care about winning too much.

Optimistic character is considered a strength and involves a positive attitude toward the future. The positive emotion and high-spirited behavior can encourage and produce goal-oriented actions. Those with optimistic way of thinking are more likely to view a positive aspect of life, do not lose courage and hope in any adversity and exert every effort to accomplish their goals [5].

Various researches addressed the issue of the relationship between exercise participation and optimism. It was reported that those who participate in leisure sports such as jogging, mountain climbing and cycling are more likely to have a greater level of optimism [6]. It was also found that younger people and those who participate in exercise on a regular basis were more optimistic than others [7]. Other researches on the relationship between such variables as sport participation, self-control, vitality and optimism reported a similar result that sport participation exerts a positive effect on optimism [8][9]. It might be safe to conclude that there exists a positive correlation between sport participation and optimism.

As mentioned above, one with a high degree of optimism is more likely to possess positive mentality, which would help him or her better respond to stressful situations. Thus, it might be assumed that a more optimistic person should be less aggressive, since aggression is a typical expression of being under stress.

Lounsbury, Steel, Loveland and Gibson [10] claimed that optimism has a positive effect on aggression, which refers to all types of behavior intended to hurt or give pain to others [11]. An aggressive person is likely to have the problem of social maladaptation, which might often lead to crime [12]. Thus, it is essential that society should pay much attention to reduce aggression. According to Buss and Perry [13], aggression consists of four elements; physical aggression, verbal aggression, anger and hostility. Physical and verbal aggression tend to hurt or inflict an injury on others, and thus often involve instrumental and kinematic elements. Anger refers to physiological arousal and preparation, and thus reflect emotional and dynamic elements. Hostility, in turn, refers to a negative attitude toward others' unfair treatment, and thus reflects cognitive elements.

Lounsbury, Steel, Loveland and Gibson [10] reported that optimism helps reduce or delay the expression of aggressive behavior. Scheier and Carver [14] was also in the same line of result that one with positive hope for the future and positive recognition of the present is very likely to be able to control his or her aggressive/violent instinct and behavior even in the situation that would easily trigger such negative behavior.

On the basis of the results of previous studies of aggression and optimism, the current research aims to identify how participation in tennis club activities is related with the club members' optimism and aggression.

A set of hypotheses were established for the current research. First, it was assumed that there should exist a significant difference in optimism between the criterion measurements at the time of developing the scale and the measurements of the current subject group. Second, there should exist a significant difference in aggression between the criterion measurements and those of the current subject group. Third, the optimism of tennis participants should have a significant impact on their aggression.

2. RESEARCH METHODS

2.1. Participants

The subject group consists of the members of tennis clubs located in Gyeongsang Province as of 2021. Out of the 10 tennis clubs contacted, 7 of them agreed to participate in the current study. A total of 246 members responded to the questionnaire. 11 incomplete surveys were eliminated and the other 249 surveys were used for statistical analysis. Their general descriptive characteristics are illustrated below in Table 1.

2.2. Materials

2.2.1. Optimism

In order to measure the subjects' optimism, we adopted H. Shin's [15] Koreanized version of Revised Life Orientation Test (LOT-R) developed by Scheier, Carver and Bridges [16]. LOT-R consists of a set of 10 items measuring the subjects' optimistic disposition on the basis of a five-point scale: 0 point for 'strongly disagree' to 4 points for 'strongly agree'. 3 of the 10 items measure generalized positive expectation for the happenings in the future, 3 for pessimistic expectation and 4 other items are not measured but are included in order for them not to recognize the real intention of the test. Thus, only the score of those 6 items was used to measure their optimism. A greater score signifies a greater degree of optimism and the score ranges from 0 to 24. Cronbach's α indicating the internal consistency was obtained at .81 in D. Kim [17] and .67 in the present research.

Table 1. General Characteristics of Participants

		N	%
Gender	Male	163	65.5
	Female	86	34.5
Experience	less than 4 years	66	26.5
	5~10 years	46	18.5
	more than 10 years	137	55.0
Frequency	less than twice a week	90	36.1
	3-4 times a week	103	41.4
	5 times a week or more	56	22.5
Exercise Hours	1 hour	17	6.8
	2 hours	195	78.3
	3 hours or more	37	14.9
Total		249	100

2.2.2. Aggression

Seo & Kwon [18]'s slightly modified version of Buss and Perry [13]'s Aggression Questionnaire (AQ) was used to measure the feature of aggression. The original version consisted of a set of 29 items: 9 in physical aggression, 5 in verbal aggression, 7 in anger, and 8 in hostility. Of the original set, 2 items of anger were deleted for the purpose of the present research. Each item was measured on a five-point Likert scale: from 1 (strongly disagree) to 5 (strongly agree). A greater score is interpreted as a greater degree of the corresponding subfactor. Cronbach's α indicating internal consistency in Buss and Perry (1992) was .85 for physical aggression, .72 for verbal aggression, .83 for anger and .77 for hostility. The figures for the 4 subfactors in the current research were .69, .70, .61 and .77, respectively.

2.3. Procedure

We searched in the internet websites for the tennis clubs operating in Gyeongsangdo Province. A group of 10 clubs were selected as candidates for the subject group. We contacted the leaders of the clubs via telephones and emails, explained the outline of the research, and asked for participation in the research project. Out of the 10 clubs, 3 clubs could not join the present research due to their insufficient number of members owing to the pandemic situation. After identifying the number of members of each club, questionnaires were sent to them via mail. A total of 300 questionnaires were sent and 260 of them were returned. Eliminating 11 sheets with 3 or more unanswered items, 249 of them were finally chosen for statistical measurements and analysis.

2.4. Data Analysis

A set of statistical analysis methods were utilized for the research. I used SPSS version 23 to perform all statistical test. First, frequency analysis and descriptive statistics were performed to identify the general characteristics of the collected data. Second, one sample t-test was conducted to see if there exists any difference between the criterion measurements and the measurements of the present subject group in terms of optimism and aggression. Third, Pearson's coefficient was obtained to analyze the correlation between optimism and aggression. Fourth, a simple regression analysis was conducted to see the impact of optimism on aggression. All the analysis was performed with the significance level of $p < .05$.

3. RESULTS

3.1. Criterion and Current Measurements in optimism and aggression

Table 2 illustrates the differences between the current measurements and the criterion measurements obtained at the time of developing the test tool. First, there existed a statistically significant difference in optimism between the two measurements ($p < .001$). A significant difference was also found between the two measurements in all the subfactors of aggression ($p < .001$).

Table 2. Differences of Criterion and Current Measurements in optimism and aggression

factors	measurements	N	M	sd	<i>t</i>
optimism	Criterion(a)	2,055	14.33	4.28	13.422*
	Current	249	17.09	3.24	
physical	Criterion(b)	552	19.45	5.18	-18.044*
	Current	249	14.76	4.10	
verbal	Criterion(b)	552	12.75	3.32	-12.337*
	Current	249	10.31	3.12	
aggression	Criterion(b)	552	13.82	3.47	-21.214*
	Current	249	10.20	2.70	
hostility	Criterion(b)	552	18.32	4.88	-20.004*
	Current	249	13.37	3.91	

$p < .001$

(a) Scheier, M. F., Carver, C. S., & Bridges, M. W.(1994).

(b) Seo, S. G., & Kwon, S. M.(2002).

3.2. The influence of participants' optimism on their aggression

3.2.1. Correlation between optimism and aggression

Table 3 exhibits the result analyzing correlation between optimism and aggression. A statistically significant correlation was found between optimism on one hand and physical aggression, anger and hostility on the other hand at the level of $p < .01$.

Table 3. Correlation between optimism and aggression

	optimism	physical aggression	verbal aggression	anger	hostility
Optimism					
physical aggression	-.324*				
verbal aggression	-.045	.522*			
Anger	-.319*	.535*	.391*		
Hostility	-.280*	.543*	.457*	.430*	

* $p < .01$

3.2.2. Effect of optimism on aggression

The result of a simple regression analysis of the effect of optimism on aggression is found below in Table 4. First, the influential power of optimism on physical aggression, which is one of the 4 subfactors of aggression, was obtained at 10.5%, and the regression model ($F=29.016$) was valid at the level of statistical significance ($p < .001$). Second, optimism did not exert a significant influence on verbal aggression ($p = .484$). Third, the influential power of optimism on anger was obtained at 10.2% and the regression model ($F=28.063$) was valid at the level of statistical significance ($p < .001$). Finally, the influential power of optimism on hostility was 7.8% and the regression model ($F=20.999$) was also valid at the level of statistical significance ($p < .001$).

Table 4. Effect of optimism on aggression

independent variable	dependent variable		<i>B</i>	β	<i>t</i>	<i>R</i> ²	<i>F</i>
optimism	physical aggression	constant	2.692				
			-.273	-.324	-5.387	.105	29.016*
	verbal aggression	constant	2.260				
			-.051	-.045	-.701	.002	.491
	anger	constant	3.265				
			-.319	-.319	-5.297	.102	28.063*
	hostility	constant	2.644				
			-.253	-.280	-4.582	.078	20.999*

* $p < .001$

4. DISCUSSION

The relationship between optimism and aggression was identified for a group of tennis players who participate in club activities. Considering that many instances of violence and assault have been reported in recent years, this attempt to identify the positive effect of participation in sport activities on a regular basis seems to suggest a meaningful insight.

As far as the differences in optimism and aggression between the criterion measurement and the current measurement, an interesting result was found. The comparison of the two figures showed that the current measurement was significantly higher than the criterion measurement in optimism but lower in aggression.

The current study proceeded without a control group. Thus, the measurement obtained at the moment of developing the test tool was adopted as the criterion measurement. Without any information on the subject group's participation in sport activities and level of participation (period, intensity and frequency), the validity and reliability of the research design can be questioned. And it can also be assumed that such a group from random sampling should show a lower level of sport participation than a group of sport club members. Thus, the difference test supports Hypotheses 1 and 2 that those participating in sport activities would show more optimism and less aggression.

As in table tennis, volley ball and badminton, tennis players compete against opponents with a net at the center. Tennis can be characterized as less physical and require a higher level of game manners and sportsmanship without physical contact [19]. Also, highly valued in tennis are such virtues as teamwork, fair play, consideration and respect. Such a feature might have led to increasing participation in net sports.

It seems true that sport activities help enhance human beings' mental and social development. Many researches have reported that sport activities help develop desirable character, morality and sociality [20], that they are helpful in reducing anxiety and tension and maintaining emotional stability and interpersonal relationships [21], and that they help improve social and personal relationships, and emotional stability [22].

As for the impact of the subjects' optimism on aggression, it was found that the former exerts significant influence on the three subfactors of aggression except verbal aggression. Such a finding is in the same line of result that greater optimism is related with less aggression [23][24] and that there exists a negative correlation between optimism and aggression [10]. Scheier & Carver [14] claimed, in their experiment with a group of elementary students, that optimism would play a central role in curbing and reducing expression of aggressive behavior. Those young students with optimistic attitude would have a positive expectation for the future and also have a positive recognition of the present. Thus, such children are more likely to be able to control aggressive instinct and violent behavior with their own will. It might be assumed that a similar experiment can also apply to adults and produce a similar result.

The sport of tennis requires a high level of manners: fair play, sportsmanship, respect and sport spirit. Such elements might be considered as innate abilities to some extent but can also be learned like such tennis skills as strokes.

Tennis clubs are organized and operated with a combination of sport characteristics and cultural characteristics: active physical movement, competition, and teamwork for the former and club rules, manners, regular meetings and after-parties. The members are expected to gain various benefits through such activities: satisfaction of their physical desires, reduction of mental stress and enhancement of social relationships. These can be a momentum for one's satisfaction with the present and hope for the future.

5. CONCLUSION

The current research aims to identify how tennis participation is related with optimism and aggression. A group of 249 subjects were given a couple of questionnaire to measure their optimism and aggression. The statistical analysis found the following results.

First, it was found that those who participate in tennis are more optimistic than those who do not.

Second, it was found that those who participate in tennis are less aggressive than those who do not.

Third, it was found that an individual's optimism exerts a significant influence on his or her aggression.

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