

Study of Self-management and Stress-coping of Participants in Marine Sports

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Abstract

Background/Objectives: This research aims to provide data helping self-management and stress-coping through marine sports by empirically investigating the relationship between self-management and stress-coping of participants in marine sports. **Methods/Statistical Analysis:** This research was conducted on 277 club members participating in marine sports in Seoul, Ansan, Seosan, and Gunsan. The collected data reached the following final conclusions, by drawing upon correlation and multiple regression analysis with factor extraction and verified validity and reliability. **Findings:** First, of the self-management of participants in marine sports, mind-management has a significant relationship with problem-focused coping, social support seeking, and aesthetic thinking. This indicates that higher levels of mind-management among participants in marine sports lead to higher problem-focused coping, social support seeking, and aesthetic thinking. Second, of self-management of participants in marine sports, mind-management, interpersonal-management, and physical-management have significant relationships with emotional coping. This indicates that higher levels of mind-management, interpersonal-management, and physical-management of participants in marine sports lead to higher emotional coping. Several problems revealed by this research and suggestions for future research are presented here. **Novelty / Improvement:** This study is limited to participants in marine sports, the conclusions should be verified by extending this effort to diverse subjects. Second, this research is focused on the relationships between factors, which makes it difficult to compare basic characteristics. For further research, a prerequisite would be to analyze the characteristics of participants as well as the relationships between factors.

Keywords: Marine Sports, Participants, Relationship, Self-Management, Stress-Coping

1. Introduction

One of the characteristics of sports in society today is that many fundamentally incorporate interactions with nature. The sports performed with nature include adventure sports, mountain sports, and marine sports. And of the marine sports, skin and scuba diving, rafting, wind surfing, yachting, etc., have recently become popular with many people. South Korea possesses a natural environment that is most appropriate for marine sports. Three main environmental factors affecting marine sports are the natural environment, the modified environment, and the social environment¹. As the country has the longest shoreline in the world if rias are

included, it has a good natural environment for marine sports.

The academic system of marine sports is in an incomplete stage, and the modified environment and social environment are comparatively poor due to the current focus on aiming for scientific marine sports¹. The popularization of marine sports requires pan-governmental and commercial support as well as water quality redevelopment meeting global standards. The popularization of marine sports will give energy to workers' lives, and help marine sports development. Notably, it would help those who not only suffer distress from daily life but also others who can practice self-management²⁻⁴.

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tines, and are sampling an independent existence. Their participation will provide an opportunity for them to focus on their work in a more cheerful, motivated way. In particular, workers participating in eco-friendly sports activities practice thorough self-management with clearer objectives⁵, compared to those not.

Self-management refers to a process of mental development to overcome difficulties through self-control. Furthermore, it is a psychological behavioral strategy that can provide thorough preparation to achieve individual goals⁶. Psychological and behavioral self-management are required for daily sports participants. Notably, self-management in sports circumstances can be defined as a process that makes participants mentally prepared to overcome, through self-control.

Onerous work makes them fail to use leisure time effectively, and get stressed resulting in a vicious cycle of not relieving tension and desire. This leads to emotional anxiety occurring from stress to workers⁷. Chronic, excessive stress brings about negative effects on psychological and physiological processes, and leads to diminished skill performance⁸. Each source of stress has a critical effect on individuals' physical, psychological, and social stability, depending on how they cope with stress. In⁹ specified a stress-coping strategy as involving confidence, acceptance, monetary freedom, physical health, and social support. As such, the strategies for coping with stressful situations are varied, and they can show positive effects depending on what strategy individuals use to cope¹⁰.

From a literature review, self-management and stress have a correlation with diverse psychological behavioral variables such as confidence, concentration, and abilities to cope with the situation¹¹. Nonetheless, as available literature to review that is related to self-management and stress is limited to elite athletes^{12,13}, research related to sports for all, especially marine sports, leaves much to be desired. Hence, this research aims to provide data helping self-management and stress-coping through marine sports by empirically investigating the relationship between self-management and stress-coping of participants in marine sports. To accomplish this, the following research problems are set up. First, is a correlation found between self-management and stress-coping of participants in marine sports? And second, is a causal relationship to be found between self-management and stress-coping of participants in marine sports.

2. Research Methods

2.1 Research Subjects

For this research, club members were selected as a population, who participated in marine sports in Seoul, Ansan, Seosan, and Gunsan from May, 2015 to September, 2015. With the chosen method of survey sampling, random sampling was used to sample 300 participants. Out of them, a total of 277 questionnaire copies were used for the final analysis except that 23 copies with inappropriate answers or responses were omitted. The general characteristics of research participants are as shown in Table 1.

2.2 Measuring Instrument

2.2.1 Questionnaire Construction

The questionnaire used in this research has 4, 15, and 14 question items for general characteristics, 4 items of self-management, and 4 items of stress-coping. This is strange. What are these, three subcategories of general characteristics? If so, please state them here. of stress-coping. Self-management, set up with an independent variable, used a scale appropriately modified and complemented for

Table 1. General characteristics of research participants

Variables	Cls.	Frequency (n)	Percentage (%)
Gender	Male	197	71.1
	Female	80	28.9
Age	20s	69	24.9
	30s	101	36.5
	40s	75	27.1
	40s or above	32	11.5
Academic Level	High School Graduates		
	Attending University	23	8.3
	University Graduates	111	40.1
	Graduate School or Above	98	35.4
		45	16.2
Work Experience	Less than 2 years		
	2 Years- Less than 3 Years	61	22.0
	3 Years - Less than 4 Years	96	34.6
	4 Years or above	78	28.2
		42	15.2
Total		277	100

the research purpose, with questionnaire items that¹⁴ used based on the Athletes' Self-Management Questionnaire (ASMQ)¹⁵.

Lower variables of the self-management scale consisted of mind-management, interpersonal-management, physical-management, and practice-management. Stress-coping set up with subordinate variables was adapted by¹⁶ based on the stress-coping scale developed by¹⁷, while the questionnaire items used by¹⁸ were used as a scale after being modified and complemented for the present research purpose. Lower variables of the stress-coping scale consisted of problem-focused coping, social support seeking, psychological thinking, and emotional coping. Each of the question items was composed with a 5-point Likert Scale; 1, 2, 3, 4, and 5 points mean "strongly disagree", "disagree", "neutral", "agree", and "strongly agree", respectively.

2.2.2 Validity and Reliability of Research Tool

To verify validity of the questionnaire, exploratory factor analysis was conducted. The factor extraction applied the varimax technique of principal factor analysis and orthogonal rotation. The validity of self-management used in this research was extracted as factors such as mind-management, interpersonal-management, physical-management, and practice-management. Total Variance Explained was 64.147%, and KMO testing hypothesis value and significance probability were .797 and .000, respectively. The validity of stress-coping was extracted as factors such as problem-focused coping, social support seeking, psychological thinking, and emotional coping. Total Variance Explained was 98.775%, and KMO testing hypothesis value and significance probability were .933 and .000, respectively. Further, to analyze reliability, Cronbach's α coefficient was used. When only question items of .6 or above are used, the reliability of self-management was .614~.772, while the reliability of stress-coping was .742~.938.

2.3 Data Collection Procedure

This research conducted a questionnaire survey intended for club members participating in marine sports in Seoul, Ansan, Seosan, and Gunsan from May, 2015 to September, 2015 by personally visiting a venue where a competition was held with 5 assistants fully aware of the content of questionnaire. A self-administration method was used for the response of the survey questionnaire after fully

explaining the intent and aim of the research and questionnaire completion method, and the data gathering responses were immediately collected.

2.4 Data Processing

Statistical processing was applied to the data collected through the questionnaire by using SPSS 18.0 to obtain results appropriate for the research purpose. First, factor analysis and reliability analysis were conducted to verify validity and reliability. Second, multiple regression analysis was conducted to find out the relationship between self-management and stress-coping of participants in marine sports. A significant level of all statistics was set up at $\alpha = .05$.

3. Results

3.1 Correlation between Self-Management and Stress Coping

Before testing the goodness of fit of the factors, the correlation between each of the factors was analyzed to establish discriminant. Results showed that mind-management had a positive correlation with all stress-coping. Interpersonal-management, physical-management, and practice-management had a positive correlation with problem-focused coping, aesthetic thinking, and emotional coping. Table 2 showed that discriminant validity was found in all correlation coefficients as all the values of them did not exceed .80. Apart from this, as independent variables were less than .80, the threshold of multicollinearity, there is no problem posed by multicollinearity.

3.2 Relationship between Self-Management and Stress-Coping

3.2.1 Relationship between Self-Management and Problem-Focused Coping

Table 3 shows results obtained from conducting multiple regression analysis by setting up mind-management, interpersonal-management, physical-management, and practice-management that are the lower variables of self-management as independent variables, and problem-focused coping that is a lower variable of stress-coping as a subordinate variable. The coefficient of determination R^2 is .251, and the regression model is valid as the regression equation has about 25.1% of the explanatory

Table 2. Analysis of correlation between self-management and stress-coping

	1	2	3	4	5	6	7	8
Mind-Management (1)	1							
Interpersonal-Management(2)	.311*	1						
Physical-Management (3)	.215**	.024**	1					
Practice-Management (4)	.430**	.102	.115	1				
Problem-focused Coping (5)	.491**	.231**	.148*	.236**	1			
Social Support Seeking(6)	.260**	.088	.092	.101	.573**	1		
Aesthetic Thinking(7)	.378**	.202**	.149*	.131*	.641**	.441**	1	
Emotional Coping(8)	.505**	.252**	.229**	.263**	.625**	.338**	.492**	1

* $p < .05$, ** $p < .01$ **Table 3.** Relationship between self-management and problem-focused coping

Variables	B	SE	β	t
(constant)	.022	.627		.035*
Mind-Management	.600	.085	.438	7.063***
Interpersonal Management	.098	.060	.090	1.631
Physical Management	.071	.080	.048	.884
Practice Management	.085	.152	.033	.562
$R^2 = .251$, Adjusted $R^2 = .240$, $F = 22.745$				

* $p < .05$, ** $p < .01$, *** $p < .001$

power, and the F value of verification statistics is 22.745 leading to .000 for the significance probability (p value). Results obtained from this research showed that mind-management of self-management had a relationship with problem-focused coping.

3.2.2 Relationship between Self-management and Social Support Seeking

Table 4 shows results obtained from conducting a multiple regression analysis by setting up mind-management, interpersonal-management, physical-management, and practice-management that are the lower variables of self-management as independent variables, and social support seeking that is a lower variable of stress-coping as a subordinate variable. The coefficient of determination R^2 is .069, and the regression model is valid as the regression equation has about 6.9% of the explanatory power, and the F value of verification statistics is 5.058 leading to .000 for the significance probability (p value). Results obtained from this

Table 4. Relationship between self-management and social support seeking

Variables	B	SE	β	t
(constant)	2.535	.630		4.024***
Mind-Management	.315	.085	.255	3.686***
Interpersonal Management	.009	.060	.009	.143
Physical-Management	.052	.081	.039	.650
Practice-Management	-.033	.152	-.014	-.217
$R^2 = .069$, Adjusted $R^2 = .056$, $F = 5.058$				

* $p < .05$, ** $p < .01$, *** $p < .001$

research showed that mind-management of self-management had a relationship with social support seeking.

3.2.3 Relationship between Self-Management and Aesthetic Thinking

Table 5 shows results obtained from conducting multiple regression analysis by setting up mind-management, interpersonal-management, physical-management, and practice-management that are the lower variables of self-management as independent variables, and aesthetic thinking that is a lower variable of stress-coping as a subordinate variable.

The coefficient of determination R^2 is .157, and the regression model is valid as the regression equation has about 15.7% of the explanatory power, and the F value of verification statistics is 12.705 leading to .000 for the significance probability (p value). Results obtained from this research showed that mind-management of self-management had a relationship with aesthetic thinking.

3.2.4 Relationship between Self-management and Emotional Coping

Table 6 shows results obtained from conducting the multiple regression analysis by setting up mind-management, interpersonal-management, physical-management, and practice-management that are the lower variables of self-management as independent variables, and emotional coping that is a lower variable of stress-coping as a subordinate variable. The coefficient of determination R^2 is .284 and the regression model is valid as the regression equation has about 28.4% of the explanatory power, and the F value of verification statistics is 26.998 leading to .000 for the significance probability (p value). Results obtained from this research showed that mind-management, interpersonal-management, and physical-management of self-management had a relationship with emotional coping.

Table 5. Relationship between self-management and aesthetic thinking

Variables	B	SE	β	t
(constant)	1.845	.463		3.986***
Mind-Management	.332	.063	.348	5.289***
Interpersonal Management	.072	.044	.096	1.633
Physical-Management	.079	.059	.076	1.327
Practice-Management	-.067	.112	-.037	-.596
$R^2 = .157$, Adjusted $R^2 = .145$, $F = 12.705$				

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 6. Relationship between self-management and emotional coping

Variables	B	SE	β	t
(constant)	-.338	.624		-.541
Mind-Management	.582	.085	.418	6.887***
Interpersonal Management	.125	.060	.113	2.096*
Physical-Management	.197	.080	.130	2.473*
Practice-Management	.149	.151	.056	.323
$R^2 = .284$, Adjusted $R^2 = .274$, $F = 26.998$				

* $p < .05$, ** $p < .01$, *** $p < .001$

4. Discussions

As stress so broadly affects the maintenance of a healthy life, it requires lifetime management. In^{12,13,19} conducted diverse empirical studies to minimize the negative effects of stress. In this research, results verified through research on self-management and stress-coping of participants in marine sports identified the following facts: Mind-management of the relationship between self-management and stress-coping of participants in marine sports has a significant relationship with problem-focused coping, social support seeking, and aesthetic thinking. This indicates that the higher the mind-management of participants in marine sports, the higher their problem-focused coping, social support seeking, and aesthetic thinking.

As mind-management is classified into patience, confidence, and positive thinking, it affects stress. Mind-management shows that it can expand the ability to control stress as it has a positive effect on stress-coping, a behavior which adapts to or decreases the demands occurring from stress. In²¹ maintained that a significant difference is found between stress-coping method and problem-focused coping method whether or not the individual is participating in a team sport. Further, the level of problem-focused coping is high with regular participation in sports. Hence, this research supports the result that mind-management is related to problem-focused coping.

Along with this, In¹⁴ studied male college athletes on the relationship between mind-management and sports coping, that problem-focused coping such as emotional, problem-focused, and masterful coping has a critical effect on self-management, which is consistent with the result of this research that a correlation is found between self-management and stress-coping.

Regarding self-management of participants in marine sports, mind-management, interpersonal-management, and physical-management has a significant relationship with emotional coping. Emotional coping indicates responses such as personal emotional expression, seeking others' comfort and support, and avoiding stress sources²⁰. And for participants in marine sports in this research, the higher the level of mind-management, interpersonal-management, and physical-management, the higher the level of emotional coping.

Stress occurs from the process that participants in marine sports went through in order to overcome psychological behavioral factors such as confidence, anxiety,

and emotion, and positively maintain human relation with surrounding people related to them. When they are exposed to this environment, coping strategies are required for the mind-management aspect that overcomes negative emotions such as anxiety and inspires confidence in them through proactive participation in sports. And coping strategies are also required for interpersonal-management involving human relations such as parents, friends, and colleagues.

In⁸ maintained that coping strategies should vary depending on stress situations by dividing coping into stress situations, coping strategy selection, and dynamic evaluation of coping ability. If self-management is considered to be an ability that manages an individual's behavior and life, stress-coping is eventually overcoming stress through self-management. Therefore, marine sports participation can be construed from a perspective of coping with stress by learning the mysteries of pure nature, adapting to it, and increasing the self-management ability of participants in marine sports.

In this research, mind-management, interpersonal-management, and physical-management are revealed as variables to explain stress-coping, which has partial support in prior research. This result can control and reinforce unbalanced factors resulting from stress as mind-management of effort toward positive thinking and goals, interpersonal-management such as sustained human relationships, and physical-management of personal physical strength and strengthened technique²¹.

5. Conclusion and Suggestions

This research was conducted on 277 club members participating in marine sports in Seoul, Ansan, Seosan, and Gunsan. The collected data reached the following final conclusions, by drawing upon correlation and multiple regression analysis with factor extraction and verified validity and reliability.

First, of the self-management of participants in marine sports, mind-management has a significant relationship with problem-focused coping, social support seeking, and aesthetic thinking. This indicates that higher levels of mind-management among participants in marine sports lead to higher problem-focused coping, social support seeking, and aesthetic thinking.

Second, of self-management of participants in marine sports, mind-management, interpersonal-management, and physical-management have significant relationships

with emotional coping. This indicates that higher levels of mind-management, interpersonal-management, and physical-management of participants in marine sports lead to higher emotional coping.

Several problems revealed by this research and suggestions for future research are presented here. First, as this study is limited to participants in marine sports, the conclusions should be verified by extending this effort to diverse subjects. Second, this research is focused on the relationships between factors, which makes it difficult to compare basic characteristics. For further research, a prerequisite would be to analyze the characteristics of participants as well as the relationships between factors.

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