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Impact of the recreational physical activities on university students' problem-solving skills and self-esteem in Turkey

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Abstract

The purpose of this study is to investigate the effects of participation in recreational physical activities on problem-solving skills and self-esteem of university students in Turkey. 111 volunteer university students participated in the study and were randomly assigned to experimental (n=51) and control (n=60) groups. The experimental group participated in the recreational physical activities which were conducted in two sessions, each lasting one hour a week. During this period, the control group did not participate in any regular physical activity program. Heppner problem-solving skill and Coopersmith self-esteem scales were administered to participants before and after 12-week period. Participants in the experimental group improved their problem-solving skills and self-esteem to a greater extent than those in the control group. In addition, there was a significant decrease in problem-solving skill and increase in self-esteem scores of participants in the experimental group in comparison to the ones in control group. The recreational physical activities positively affected the problem-solving skill and self-esteem of university students.

Keywords: Physical activities, problem-solving skills, recreation, self-esteem.

Introduction

Students can benefit from having good problem-solving skill to solve the problems because they can encounter a variety of real problems in regard to social relationships on daily lives. Thus, students should know how to cope with the real social problems. Students need to develop cognitive and metacognitive skills (Bebko & Ricuitti, 2008; Pressley, & Harris, 2006) in order to overcome the problems of social life. Therefore, improving the problem-solving skill may result in good communication networks among the students. Students need to learn how to solve the real problems in relation to the real world and students may improve their problem-solving skill by participating in recreational sport activities (Yiğiter, 2013b). Also, students should participate in the recreational sport activities to enhance the self-esteem because self-esteem has a great effect on the value of life as well (Flynn, 2005), and it is about psychological well-being because self-esteem is one of the basic determinants of self-respect, self-confidence, self-worth and various psychological variables (Güçray, 1989, Yi iter, 2011). From the literature studies standpoint, related literature recommends joining in recreational activities because with participation in recreational activities, students can gain new positive experiences. According to Alexander Astin's Theory of Involvement participation in recreational activities at university contributes to the overall education of students (Astin, 1993). Also, Kovac & Beck, (1997) stated that participation provided students with many positively perceived benefits such as feeling of physical well being, sense of accomplishment, stress reduction and physical strength (Kovac & Beck, 1997). There are many benefits to engagement in the recreational physical activities (Kasunich, 2009). Students' participation in recreational activities could posi-

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tively affect psychological and physical parameters, which will eventually result in an increased quality of their lives (Yiğiter *et al.*, 2011). For example, reducing academic stress allows students to achieve better grades (Kasunich, 2009) and recreative activities can influence academic success (Akpınar, 2004). In this respect, students can not only solve the social problems in the social life but also contribute to their academic life.

Taken together, problem-solving skill and self-esteem are two important psychological structures to improve in students. These two psychological structures may be developed by participating in sports activities (Yiğiter, 2013b). The purpose of the present study, therefore, is to investigate the effects of recreational physical activities for 12 weeks. For that purpose, it was hypothesized that the participants in the experimental group would improve in problem-solving skill and self-esteem compared to the participants in the control group.

Methodology

Participants

Participants were volunteer university students and randomly assigned to experimental (n=51) and control group (n=60). According to results of the data collection tools, the students with low perception of problem-solving skill and self-esteem were chosen to participate in the study. Fifty-one volunteer university students were accepted for experimental group because of restricted budget and gym capacities. The attendance of participants was noted by the instructor of each sport activity.

Instruments

Problem Solving Skill Inventory

Problem Solving Inventory (PSI) was developed by Heppner and Petersen (1982). The purpose of the PSI is to assess individuals' perceptions of their problem-solving behaviors and attitudes. The PSI consists of 32 statements to which participants respond on a 6-point Likert scale ranging from 'strongly agree' (1) to 'strongly disagree' (6). The total scores can range from 32 to 192. Lower scores on all scales and for the total PSI score represent positive appraisals of problem-solving abilities. Concurrent validity of the PSI has been estimated for normal high school students. Concurrent validity have been demonstrated through significant correlation of scores with outcomes of student's rating of their level of problem-solving skils and their perceived level of satisfaction with their skills, all correlations were statistically significant ($p<0.001$). Comparing the PSI to other instruments such as Rotter Internal-External (I-E) Locus of Control Scale (Rotter, 1978; n=33) has showed construct validity. Correlations of PSI scores with the Rotter (I-E) Locus of Control Scale were statistically significant (r=0.61). Estimates of test-retest reliability were established by administering the inventory to 31undergraduate students on two occasions approximately 2 weeks apart, revealing high reliability (r=0.89). Internal consistencies were computed for the total scale score based on a sample of 150 of undergraduate students, alpha coefficients were found to be 0.90 (Heppner, & Petersen, 1982; Radi, 2006).

Self-Esteem Inventory

Coopersmith Self-Esteem Inventory (CSI) was developed by Stanley Coopersmith (1967). It evaluates the attitudes of respondents towards themselves in different areas. Tufan and Turan (1987) made the language adaptations for Turkish participants. The reliability coefficient was found to be 0.76 ($p<0.05$). For validity check of the scale, the relationship between the Coopersmith Self-Esteem Inventory and Rosenberg Self-Esteem Inventory was assessed and the correlation was found to be 0.061 ($p<0.05$). The adult version of the scale was used. The scale, which consists of 25 items, was scored between 0 and 1 (Yiğiter *et al.,* 2011).

Procedure

Before the study sessions, a meeting was held with the participants and all of them were given information about branches of sport (tennis, horseback riding, football, handball, volleyball, paintball) and the schedule of sessions regarding the recreational physical activities program, the research project and voluntary participation. Moreover, the participants were made sure that all their record should be kept confidential. The experimental group participated in recreational physical activities sessions for 12 weeks. The researcher decided together with students how to conduct the program and what to do in the recreational physical activities program in the meeting. During the meeting, informed consent was signed by each participant before the psychological measurements. Consent from Research and Ethics Committee of University was obtained for the research.

Data Analysis

The data were analyzed by SPSS 16.0 Package Program. Descriptive statistics, independent sample t-test, Paired Samples T Test, Chi-Square analysis were used to analyze the data. Level of significance was determined to be 0.05.

Results

The experimental and control groups were homogeneous regarding gender, type of high school, department of high school, level of income, place of residence where they have lived in last 10 years (Table I).

Table 1. Homogeneity of participants.

	Groups				P	
	Experimental		Control			
	N	%	N	%		
Gender						
Male	27	52,9	25	58.3	0.236	p>0.05
Female	24	47,1	35	41,7		
High school type						
General	28	54,9	38	63,3		
Science	1	2,0	1	1,7		
Anatolia	10	19,6	10	16?7	0.381	p>0.05
Boarding school	1	2,0	0	0		
Teacher	3	5,9	0	0		
Profession	8	15,7	11	18,3		
Income						
< 500 TL	10	19,6	10	16,3		
501-1000 TL	3	5,9	2	3,3	0.337	p>0.05
1001-1500TL	23	45,1	37	61,7		
> 1500 TL	15	29,4	11	18,3		
Place of residence						
Provincial	34	66,7	44	73,3	0.285	p>0.05
District	13	25,5	15	25		
Village	4	7,8	1	1,7		

Table 2. Descriptive statistics of overall students.

	N	Minimum	Maximum	Mean	SD
Age	111	17	25	18,97	1,33
Problem-solving skill pre-test	111	95	135	115,53	9,03
Problem-solving skill post-test	111	73	130	101,02	17,44
Self-esteem pre-test	111	52	76	64,10	5,24
Self-esteem post-test	111	56	96	71,24	10,38

Students' overall X age was 18,97±1,33, X problem-solving skill pre-test turned out to be 115,53±9,03 and X problem-solving skill post-test was found to be 101,02±17,44. Also, students' overall X self-esteem pre-test turned out to be 64,10±5,24 and X self-esteem post-test was found to be 71,24±10,38 (Table 2).

Table 3. Differences between pre test and post test regarding PSI and CSI.

	N	Pre-test M&SD	Post-test M&SD	P	
Problem-solving (PSI)					
Experimental group	51	116,72±7,35	85,37±8,20	0.001	p<0.05
Control group	60	114,51±10,20	114,33±10,88	0.835	p>0.05
P		.201 p>0.05	0.001 p<0.05		
Self-esteem (CSI)					
Experimental group	51	64,23±5,27	81,09±6,09	0.001	p<0.05
Control group	60	64±5,25	62,86±3,76	0.114	p>0.05
P		0.815 p>0.05	0.001 p<0.05		

There was a significant difference between experimental group's X problem-solving skill pre-test score 116,72±7,35 and X problem-solving skill post-test score 85,37±8,20 (p<0.05). There was not a significant difference between control group's X problem-solving skill pre-test score 114,51±10,20 and X problem-solving skill post-test score 114,33±10,88 (p>0.05). There was a significant difference between experimental group's X self-esteem pre-test score 64,23±5,27 and X self-esteem post-test score 81,09±6,09 (p<0.05). There was not a significant difference between control group's X self-esteem pre-test score 64±5,25 and X self-esteem post-test score 62,86±3,76 (p>0.05) (Table 3).

Discussion

The purpose of the present study is to investigate the effect of recreational physical activities for 12 weeks on university students' problem-solving skill and self-esteem in Turkey. For that purpose, it was hypothesized that the participants in the experimental group would improve in problem-solving skill and self-esteem compared to the participants in the control group.

The results of present study supported the hypothesis that the participants in the experimental group would improve in problem-solving skill and self-esteem compared to the participants in the control group. According to findings, there was a significant difference between experimental group's X problem-solving skill pre test score 116,72±7,35 and experimental X problem-solving skill post test score 85,37±8,20 (p<0.05). There was not a significant difference between control group's X problem-solving skill pre test score 114,51±10,20 and X problem-solving skill post test score 114,33±10,88 (p>0.05). In reviewing the literature, it can be said that there are researches about problem-solving skill in literature but no known studies in the literature in relation to correlation of the recreational physical activities with the problem-solving skill of the university students. Therefore, this research can be classified as a pilot study as it used a small sample size and this study is done for the first time. However, some studies show that there is a significantly correlation between problem-solving skill and self-esteem (Ulusoy, 2006; Kaya, 1992; Nadir, 2002). According to these studies, if the self-esteem is at high level, the problem-solving skill increases. Doğan (2008) stated that recreational activities reduce the physical and mental tension, therefore, these activities can help develop problem-solving skill by affecting the physical and mental tension. Also, in this study, there is another parameter. According to findings, there was a significant difference between experimental group's X self-esteem pre-test score 64,23±5,27 and X self-esteem post-test score 81,09±6,09 (p<0.05). There was not a significant difference between control group's X self-esteem pre-test score 64±5,25 and X self-esteem post-test score 62,86±3,76 (p>0.05). Self-esteem is an important parameter in social life. This is because high self-esteem provides one with positive psychological attributes such as self-confidence, optimism, success and feeling of worthiness (Secord ve Backman, 1974). Literature supports

the results in the study that participants who engaged in recreational activities and sports have been shown to have higher self esteem than non-participants (Yiğiter *et al.,* 2011; Yiğiter, 2013a; Forrester & Beggs, 2005; İçten *et al*., 2006; Tekin *et al.* 2002; Aksaray, 2003; Bowker, 2006; Asci, 2004; Bicer, 2013; Ryska, 2003; Sanford *et al*., 2008).

With respect to methodological consideration, this study used experimental design with random assignment of participants to experimental and control groups. In addition, informed consent was obtained from each participant before the recreational physical activities program in this study. Also, valid and reliable instruments were used for measuring problem-solving skill and self-esteem. This study was designed considering the recommendation of Mandell who reported that 60 minutes of exercise might result in more psychological benefits (Aşçi, 2003; Yiğiter, 2013c). In this context, the study was designed in such a way that there were recreational physical activities sessions two days per week for twelve weeks. Limitation of this study should be noted for future studies. The present study used a small sample size and is done for the first time to investigate the impact of the recreational sport activities on problem-solving skill. Further research is needed to investigate the problem-solving skill and self-esteem of a greater number of students, and more inventories should be administered regarding psychological parameters.

Conclusions

In conclusion, the recreational physical activities enhanced psychological aspects and reduced the scores of problem-solving skill "As the scores of problem-solving skill reduces, the perception problem-solving skill increases" and increased the self-esteem. During the 12-weeks recreational physical activities, the students who participated in the experimental group learned how to improve the problem-solving skill and self-esteem. In conclusion, the recreational physical activities have positive effects on problem-solving skill and self-esteem of university students. The findings of the study can provide evidence and contribute to future studies on recreational sport activities.

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