

Effects of sports participation on psychological stress in female students in region 3 of Kermanshah

Ali Feyzkhademi¹, Saadat Hajipoor¹, Shahram Azimi², Mehrdad Jalalian^{3,4,5}

¹Faculty Member of Izeh Branch, Islamic Azad University, Izeh, Iran

²Lecturer, Sama Branch (Kermanshah), Islamic Azad University, Kermanshah, Iran

³Research Center of Iranian Blood Transfusion Organization, Khorasan-e Razavi Blood Center, Mashhad, Iran

⁴Department of Community Health, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Serdang, Selangor D.E., Malaysia

⁵Editorial Office, Electronic Physician Journal, Mashhad, Iran

khademisport@gmail.com

Abstract: The aim of this study was to investigate the effects of sports participation on the psychological stress levels of female students 15-18 years old. Psychological stress is defined as a collection of nonspecific reactions against organisms in reflections and exposure to any factor that should be faced. Stress control includes several factors, and, in particular, sports participation is thought to be effective. This quasi-experimental research was performed using pre-test plan-test, after-test, and control groups. Research subjects for the control group were 30 people chosen randomly. The subjects of stress were tested by a 40-item stress questionnaire and then tested in step independent variable "Sports participation" included volleyball education and skills training for three months and three weekly sessions of 75-90 minutes. This was carried out to investigate its effect on the dependent variable "stress." We did not observe any statistically meaningful difference between the mean scores of stress-control group and experiment group scores at pre-test in $p < 0.05$; however, statistically meaningful differences were observed between the mean scores of stress control group and experiment group scores on the post test stage ($p < 0.05$) and between the mean scores of stress in the control group pre-test and post-test in ($p < 0.05$). In addition, A statistically meaningful difference was observed statistically meaningful differences were observed between the mean scores of stress in the experiment group pre-test and post-test ($p < 0.05$). [Journal of American Science 2010;x(x):xx-xx]. (ISSN: 1545-1003). [Journal of American Science 2010;6(11):438-441]. (ISSN: 1545-1003).

Keywords: Sports Participation; Psychological stress; Students

1. Introduction

Although advances in science, technology, and industrialization have brought valuable improvements to society, they have also presented numerous complications. One complication is decreased mobility and physical activity. Sedentary lifestyles can lead to physical and mental health issues and impairments. Mental energy cannot be separated from physical energy. Fatigue, disappointment, lack of exercise, and the inability to make decisions are related. The opposite theorem is also true: with suitable condition, progress is possible and leads to excellence. Skills steadily lead to confidence and physical fitness is a big step toward having a psychological fitness.

Participation in sports often has therapeutic effects on children and adolescents suffering from emotional or developmental disabilities. Children, teenagers, and even adults gain the opportunity through sports to strengthen their physical, psychological, and social faculties. On this basis, the study seeks to evaluate whether participation in a relatively long-term physical activity changes the stress on student athletes. The researchers chose

volleyball as the sport, since it is a preferred activity for students in Kermanshah.

Low mobility, especially in girls, can cause many mental disorders and vice versa; mental illness can cause physical symptoms. Therefore, sports participation can be therapeutic for children and youngsters. For this reason, many groups spend leisure hours on such activities after tedious days of work. Even in subjects who suffer from depression, sports can reduce psychological discomfort through exercise. Low mobility and immobility have been forcibly imposed on human beings parallel to the development of technology. Thus their physical and mental health is subject to this sensitive position. With exercise periods, they can revive their physical conditions and reestablish mental balance (Tondnevis, 1992).

The aim of this study is to evaluate the effects of exercise participation on stress levels in female athletes. Specific objectives include:

- Evaluating pre-participation stress levels in subjects before volleyball training and practice.

- Measuring post-participation stress levels in subjects after volleyball training and practice.
- Determining whether participation in sports (volleyball) reduces stress in subjects.

To achieve the objectives, the following research hypothesis was proposed:

“Sports participation (volleyball) has a meaningful effect on the reduction of subjects stress. “

2. Material and Methods

This study examines the effect of sport participation on the mental stress levels of students. Therefore, it was conducted as a quasi-experimental study and consisted of two groups - control and experiment - with pre-participation and post-participation measurements. Thirty subjects in the control group were selected randomly from 120 Esteghlal High School students. They were ages 15-18 years with a mean age of 16.53. Thirty subjects were also selected at random from the same population to be in the experiment group. The experiment group (mean age 16.26) participated in girls volleyball classes at Kermanshah City Azadi Stadium. Measurement instruments in this study included two questionnaires:

- Personal information questionnaire
- Personal stress questionnaire

Information was captured via the questionnaire from June-September 2003. Researchers collected the pre-test questionnaire after the first meeting with the control and experiment groups. However, before distributing the questionnaires, they did interviews to ensure none of the students had participated in regular exercises before. The experiment group participated in volleyball skills training within 32 sessions, each lasting 70-90 minutes. At the last session, post-test questionnaires were distributed to the two groups and were collected after completion by the examinees

3. Results

This study was done as a quasi-experimental research using control and experiment groups with pre-participation and post-participation questionnaires. Information from questionnaires regarding stress levels was analyzed and quantitatively converted using descriptive statistics (mean and standard deviation) and inferential statistics (student t-test).

Table 1. Pre-participation in the control and experiment groups

Evidence Groups	$X \Sigma$	N	\bar{X}	S	T
Control	293	30	9/77	3/52	0/495
Experiment	278	30	9/27	4/27	

As shown in Table 1, since the t value (0.495) is less than table critical value (1.671) at 5% alpha level, it will not reject the zero assumption; the study hypothesis based on differences between the pre-participation mean scores of control and experiment groups is not confirmed. The differences observed between the control and experiment groups' mean scores of stress during the pre-participation phase are not statistically significant.

Table 2. Post-participation measurements of control and experiment groups

Evidence	$X \Sigma$	N	\bar{X}	S	T
Control	281	30	9/37	3/39	2/338
Experiment	217	30	7/23	3/67	

As shown in Table 2, since the t value (2.338) was more than the table critical value (1.671) at 5% alpha level, it rejects the zero assumption; the study hypothesis based on differences between the post-participation mean scores of control and experiment groups is confirmed. The differences observed between the control and experiment groups' mean scores of stress during post-participation testing are statistically meaningful.

As shown in Table 3, since the t value (0.747) is less than the table critical value (1.671) at 5% alpha level, it will not reject the zero assumption; the study hypothesis based on differences between the pre-participation and post-participation mean scores of control and experiment groups is not confirmed. The differences observed between the control and experiment groups' pre-participation and post-participation mean scores are not statistically meaningful.

Table 3. Results of the control and experiment groups at pre-participation and post-participation

Evidence	$X \Sigma$	N	\bar{X}	S	T
Pre test	293	30	9/77	3/52	0/747
Post test	281	30	9/37	3/39	

As shown in Table 4, since the t value (4.169) was more than the table critical value (1.671) at 5% alpha level, it will reject the zero assumption; the study hypothesis based on differences between the pre-participation and post-participation mean scores of experiment groups is confirmed. The

differences observed between the pre-participation and post-participation mean scores of experiment groups are statistically meaningful

Table 4 - Experiment group pre-participation and post-participation test results

Evidence	ΣX	N	\bar{X}	S	T
Pre test	278	30	9/27	4/27	4/169
Post test	217	30	7/23	3/67	

Finally, the mean scores of stress in the control group's pre-participation and post-participation phases are 9.77 and 9.37 respectively, and for experiment group are 9.27 and 7.23 respectively

4. Discussions

Mc Mahan (1990) conducted many studies of the benefits of exercise and concluded that intense aerobic exercise can improve the development of self-esteem and reduce depression (quoting from Habibian, 2000). Skeleton et al. (1991) studied the role of tae kwon do belt ranks on the level of aggression in children 9-11 years old. The results showed that as students progressed through rising levels of combat, aggression levels reduced. The reason for this was found during the taekwondo exercises. Brook and Heim (1996) performed a preliminary study of 16 children with asthma. They found those who participated in sports had more positive self perceptions and were less anxious and dealt better with their illness than individuals who did not participate in sports (quoting Shamlu, 1999). Nora et al. (1995) found increases of 13-14 percent in aerobic power, decreased joint pain, and improved levels of anxiety and depression after 12 weeks of aerobic training. In another study (1997) they reported 10-20 percent cardio-respiratory improvements along with effective reductions of depression, anxiety, fatigue, and stress after subjects participated in an aerobic fitness program.

Cooks and Colin (1998) reported a linear relationship between confidence and motor skills performance; with higher motor skills, confidence increases (quoting from Namazizade and Naghavi, 2002). Zibery (1993) has compared the mood status of a selected group of elite athletes to non-athletes. The results showed meaningful differences in anger, hostility, power, activity, and fatigue between the two groups but there was no meaningful difference between the groups in terms of tension, anxiety, and confusion. Saheb Alzamani (1995) divided students aged 13-15 into two groups and trained the control group in karate instruction for three months. After

practicing karate for three months, students showed reduced levels of aggression.

Mozayeni (1374) studied female athletes and non-athletes and found that depression was higher in non-athletes than athletes. Exercise is a very effective antidepressant. Qoli Allah Poor (1997) compared the aggression of athletes competing in basketball, karate and boxing with non-athletes and found meaningful differences between athletes and non athletes. Habibian (2000) in a study entitled "Comparison of stress between athlete and non-athlete female students" concluded that female athletes have less stress than non-athletes. Ali Faiz Khademi (2005) in "Loneliness and source of control (internal-external) in male athletes of 18-12 years for group and solo sports in city of Kermanshah" reported that the mean of loneliness feelings is higher in solo-sport athletes than in group-sport athletes. Group-sports athletes have more external sources of control than solo-sports athletes. Also there was a meaningful difference between individual athletes and team athletes in reported feelings of loneliness and sources of control (internal -external).

This study examined the effects of sports participation on stress in female students. Analysis of the results and mean scores of the stress levels of subjects by t-test shows that female students' sports participation (specifically in volleyball) has a meaningful effect in reducing incidence of stress and can be 95% confirmed. Participation in sports is closely related to mental health, especially the prevention of disorders, and is a valuable tool to improve physical health. It seems the cause of stress reduction in the experiment group of students is regular physical activity that led to adjusted physical and psychological characteristics. Exercise causes excitement and joy and is a special vitality that can be a factor in reducing psychological disorders.

Acknowledgements:

Authors are grateful to the Islamic Azad University for its support to carry out this work.

Corresponding Author:

Ali Feyzkhademi.
Izeh Branch, Islamic Azad University ,Izeh, Iran.
E-mail: khademisport@gmail.com

References

1. Allah Gholipour, M, 1377, Comparison of aggression among young athletes of basketball, karate, boxing fields and non athletes. Thesis Master of Physical Education, Islamic Azad University Tehran Central Unit.

2. 2. Tondnevys, F. 1371. Running. First Edition. Tehran. Social and cultural affairs office and public exercise.
3. 3. Habibian, M. 1379. Comparison of athlete and non- athletes female students stress. Thesis Master of Physical Education, Islamic Azad University, Tehran Central Unit.
4. 4. Zabiry, M.. 1373. Comparison of personality mood of a selected group from elite athletes with non-athletes. Thesis Master of Physical Education, Islamic Azad University, Tehran Central Unit.
5. 5. Shamlu, S. 0.1378. Mental Health. Thirteenth Edition. Tehran. Chehr Publications.
6. 6. Saheb Alzmany, M.. 1374. Effect of a three-month program on the level of aggression in youth karate student in city of Tehran. Thesis Master of Physical Education, Tarbiat Modarres University.
7. 7. Mozayeni, AH. 1374. Assessment of depression in two groups of athletes and non-athletes female students. Sabzevar University. Thesis Master of Physical Education, Islamic Azad University, Tehran Central.
8. 8. Namazi Zadeh, M.. Naghavi, F.. 1381. Science and research magazine. Number 11 and 12 Isfahan (Khorasgan), Naghsh Mana Publications.
9. 9. West, D. Pucher, vol. 1375. Foundations of physical education and sport, open translation. Tehran. Nor Hekmat publications.
10. 10. Noreau. L. & etal. (1997). "Dance- based exercise propram in reheimatioid arthritis", American journal of physical medicine & rehabilitation. 76 (2).
11. 11. Skelton, L. dennis Michael, A. (1991). Aggressive Behavior as a function of teakwondo Rnking Percptual and motor skills.Vol.72, pp: 175-182.

9/15/2010