

EFFECTS OF DOING SPORTS ON EMOTIONAL STATE OF ADOLESCENTS

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Abstract

This research has been done to establish possible effects of organized sports activities on the emotional state of adolescents. Sample of examinees included 448 people, both males and females, from all three Montenegrin regions, aged 15-16. The whole sample was divided into two sub-samples, evened according to chronological age: the first subsample including 211 examinees, male and female members of sport clubs who regularly train constantly for at least a year, at least three times a week, and the other subsample including 227 people, both male and female, who do not do organized sports activities. After done discriminative statistic procedure, the given results indicate to establish statistically significant differences in average scores given in the Scale of emotional state of adolescents with examined subsamples. With the subsample made of male and female members of sport clubs from all Montenegrin regions, doing organized sports activities for at least a year, at least three times a week, the average scores given in the Scale of emotional state of adolescents was statistically quite lower than average score given on the same scale, with the subsample that do not do organized sports activities.

Key words: *chronological age, activity, members, scale*

Introduction

Passive lifestyles and physical inactivity represents one of the major causes of disease and reduction of life quality of the population in the countries of developed world, and further increase of inactivity lead to growth of these risks. The above mentioned problems, caused by reduction of physical inactivity strongly reflect on psychological health of a modern man, which is jeopardised, more or less, in dependence on characteristics of a person and social environment Alderman,B., & D.Landers.(2004). New researches in this field indicate to the fact that mild forms of some psychological disorders, such as depression, anxiety and psychological stress can be improved during regular recreational activities. An exact mechanism of physical activity effects on psychological state has not been completely clarified. Most researches were dedicated to attempts of finding a mechanism of physical activity effects on the level of neurotransmitters, substances enabling transmission of information in the nervous system. It has been concluded that regular exercising increases the level of serotonin and beta-endorphin which explains positive effects on the mood. Psychologically, after exercising people are filled with energy, usually without negative feelings such as tension, fear, restlessness or anxiety Hale,B., J.Raglin,(2002). There is a common contribution in creating positive picture of themselves, especially if exercising leads to achieving the beginning aims such as reduction in weight and body shaping, even more if it had been previously taken as a personal problem, Perrotta, F. (2010). Anyway, it can be concluded that positive changes in psychological state are achieved in multidimensional way. Physical exercising produces a series of physiological and biochemical changes in the body, as well as the changes in the way

thinking and experiencing themselves and their environment, which altogether contributes to improved psychological functioning, Ramirez,J. & Winer,J.L.(1983). Significant psychological changes appear with a person as a result of physical exercising. Emotional stability is increased, aggression is decreased and there is improved motivation for adaptable changes. Physically trained person feels better and has more life energy and work motivation. Physical activity has different affects on the above mentioned character features and even more on psychological conditions which, of course, depends on individual differences of the examinees, and in the first place of gender, chronological age, health condition, etc. On the base of statistic data analysis on effects of recreational activities on depression, North, McCullagh & Tran (1990) deduce that exercising quite reduces the level of depression in all chronological groups, disregarding their previous physical condition. Achieved effects were more expressed with the examinees who trained more frequently and who were more involved in the programs of recreational exercising. Effects of regular training in the moderate zone of load on ergo cycle and treadmill, according to Bauer et al. (2001) contribute to improving of condition with the examinees who had a higher level of depression. Besides, effects of physical activity did not depend on the age of examinees. It was noticed that less depressed were the children and teenagers who were more active, and that the physical activity reduces the risk of depression in the later years (Strawbridge et al., 2002). The data given in the researches done so far show that the level of physical activity and good mental health are in the high positive correlation. Positive mood, feeling of pleasure with rare symptoms of anxiety

and depression indicate to good mental health (Alderman & Landers, 2004).

Problem, subject, goal and tasks of the research

Problem of this research is analysis of possible influence of regular sports activities of adolescents- male and female members of sport clubs from all Montenegrin regions on their emotional state. *Subject* of this research represents the estimation of emotional state of adolescents- male and female members of Montenegrin sport clubs and Montenegrin adolescents who do not do organized recreational activities. *Goal* of the research represents establishment of the level of the significance of differences given in the Scale of emotional state of adolescents between adolescents- male and female members of Montenegrin sport clubs and Montenegrin adolescents who do not do organized recreational activities. *Research tasks* are set in accordance with the above mentioned goal of the research. The tasks are as followed:

-The main research task is establishment of the level of the significance of average scores in the Scale of emotional state of adolescents between the sample of adolescents- male and female members of Montenegrin sport clubs and the sample of Montenegrin adolescents who do not do organized recreational activities.

-The establishment of the level of the significance of average scores in the Scale of emotional state of adolescents between the sample of adolescents- male, members of some Montenegrin fitness clubs who have organized sport activities at least three times a week and the sample of adolescents, male, from Montenegro who do not do organized recreational activities.

-The establishment of the level of the significance of average scores in the Scale of emotional state of adolescents between the sample of adolescents- female, members of some Montenegrin fitness clubs who have organized sport activities at least three times a week and the sample of adolescents, female, from Montenegro who do not do organized recreational activities.

Methods, course and procedure of the research

According to the timely direction, this is transversal type. Technique of questionnaire was used in the research, and it included the sample of adolescents- male and female members of some sport clubs from all Montenegrin regions and the sample of adolescents, from all Montenegrin regions, who do not do organized recreational activities.

Estimation of emotional state of adolescents- male and female members of Montenegrin sport clubs was done in the rooms of those clubs before the beginning of sport activities. Estimation of emotional state of adolescents- both male and female who do not do organized recreational

activities was done without previously done interview selecting the sample of both male and female adolescents who do not do organized recreational activities after which, by implementation of the random numbers` method, we go the final result of both male and female adolescents who do not do organized recreational activities. Results given by implementation of standardized measuring instrument for estimation of emotional state of adolescents in the procedure of statistic data processing were processed in the procedure of descriptive and discriminative statistics, after which began interpretation of the given results.

Sample of the examinees

Sample of the examinees included 448 examinees- both male and female adolescents, aged 15 and 16. The whole sample was divided into two subsamples, evened according to chronological age:

1)The first subsample included 221 examinees- male and female members of sport clubs from all Montenegrin regions who regularly train constantly for at least a year, at least three times a week. This subsample was divided into two subsamples:

-the first subsample, including 117 males, members of sport clubs, and
-the other subsample, including 104 females, members of sport clubs.

2)The other subsample included 227 examinees from all Montenegrin regions, who do not do recreational activities.

This subsample was divided into two subsamples:

-the first subsample, including 116 males, who do not do recreational activities, and
-the other subsample, including 111 females, who do not do recreational activities.

Sample and description of measuring instrument

For estimation of emotional state of the whole sample in this research we used a standardized Scale of emotional state of adolescents Adolescent Wellbeing Scale (Birlson, P., 1980), which enables adolescents to express directly how they feel.

The scale is consisted of 18 items referring to different aspects of adolescents` lives. The scale is made for fast detection of the presence of depressive feelings, as well as monitoring and evaluation of the undertaken treatments` results.

Statistic data processing

Results given in this research were processed by the procedure of descriptive and comparative statistics. Software SPSS statistics 21 was used for statistic data processing in this research.

Results and discussion

Results given in this research are presented in tables in order to give clear information necessary for their adequate interpretation and discussion. The data that were not significant for interpretation of results were not interpreted. In the given table

review, measures of central tendency and variability measures are represented.

Table 1. Basic descriptive parameters

Statistics		
TOTAL SAMPLE		
N	Valid	448
	Missing	0
Mean		9,2647
Std. Error of Mean		1.2352
Median		9,00
Mode		7,00
Std. Deviation		16,3857
Variance		149,6613
Skewness		-.075
Std. Error of Skewness		.361
Kurtosis		-.296
Std. Error of Kurtosis		.502
Minimum		2,00
Maximum		25,00

From the space of comparative parametric statistics, the T-test for big independent samples was applied for testing significance in difference of arithmetic mean independent samples.

Comparative analysis of the subsample of males regularly doing sport activities (MS) at least three times a week and the subsample of males not doing sport activities (MNS)

Table 2. Comparative review of the samples given in the Scale of emotional state of adolescents

Independent Samples Test										
Testing of difference of arithmetic means (by t-test) subsample(MS) and subsample(MNS)		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
MS and MNS	Equal variances assumed	7.557	.019	2.387	219	.018	9.3957	3.4938	1.4729	15.5289
	Equal variances not assumed			2.387	217.482	.016	9.3957	3.4938	1.4729	15.5289

On the T-test result shown in the table 3, the given t-value $t=2.387$ is on statistically significant level $p=0,016$.

This data supports the thesis that regular sports activities of males, three times a week, can bring to statistically significant reduction of score in the Scale of emotional state of adolescents in comparison to the males of the same chronological age, who do not do sport activities.

Group Statistics				
ZŠ i ŽNS	N	Mean	Std. Deviation	Std. Error Mean
ZŠ	104	7.1759	11.4722	1.9367
ŽNS	111	11.3341	12.5317	2.6992

From the Table 4 it can be clearly seen that arithmetic mean of the sample of the females-

between the subsample of the males regularly doing sport activities (MS) at least three times a week and the subsample of males not doing sport activities (MNS).

Group Statistics				
MS and MNS	N	Mean	Std. Deviation	Std. Error Mean
MS	117	6.8325	14.8362	1.3872
MNS	116	8.3418	16.3856	1.9588

From the Table 2 it can be clearly seen that arithmetic mean of the sample of the males regularly doing sport activities (MS) Mean = 6.8325 as arithmetic mean of the sample of the males not doing sport activities (MNS) Mean = 8.3418 . By the analysis of standard error of arithmetic mean Std. Error Mean= 1.3872 (in the first column MS) and standard error of arithmetic mean Std. Error Mean= 1.9588 (in the second column MNS) we can see their insignificant difference in comparison to value of standard deviation Std. Deviation=14.8362 (in the first column MS) and Std. Deviation=16.3856 (in the second column MNS) which is indicator of a small results` variability within this subsample.

Table 3. Review of results given by testing of difference of arithmetic means (by t-test) given in the Scale of emotional state of adolescents- subsamples of males regularly doing sport activities (MS) and the subsample of the males not doing sport activities (MNS).

Comparative analysis of the subsample of females regularly doing sport activities (FS) at least three times a week and the subsample of females not doing sport activities (FNS)

Table 4. Comparative review of average results given in the Scale of emotional state of adolescents between the subsample of the females regularly doing sport activities (FS) and the subsample of females not doing sport activities (FNS).

examinees regularly doing sport activities (FS) Mean = 7.1759 as arithmetic mean of the sample

of the females not doing sport activities (FNS) Mean = 11.3341. By the analysis of standard error of arithmetic mean Std. Error Mean= 1.9367 (in the first column FS) and standard error of arithmetic mean Std. Error Mean= 2.6992 (in the second column FNS) we can see their insignificant difference in comparison to value of standard deviation Std. Deviation=11.4722 (in the first column FS) and Std. Deviation=12.5317 (in the

second column FNS) which is indicator of a small results` variability within this population. Table 5. Review of results given by testing of difference of arithmetic means (by t-test) of the subsamples of females regularly doing sport activities at least three times a week (FS) and the subsample of the females not doing sport activities (FNS).

Independent Samples Test										
Testing of difference of arithmetic means (by t-test) subsample (FS) and subsample (FNS)		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Žs i ŽNS	Equal variances assumed	6.040	.031	3.582	212	.000	-11.4428	2.8361	-16.9383	-5.2759
	Equal variances not assumed			3.582	210.36	.000	-11.4428	2.8361	-16.9383	-5.2759

On the T-test result shown in the table 5, the given t-value t=3.582 is on statistically significant level p=0,000. This data supports the thesis that regular sports activities of females, three times a week, can bring to statistically significant reduction of score in the Scale of emotional state of adolescents in comparison to the females of the same chronological age, who do not do sport activities.

(MS+FS) at least three times a week and the subsample of females not doing sport activities (MNS+FNS)

Comparative analysis of the overall subsample of males and females regularly doing sport activities

Table 6: Comparative review of average results given in the Scale of emotional state of adolescents between the overall subsample of males and females regularly doing sport activities at least three times a week (MS+FS) and the subsample of males and females not doing sport activities (MNS+FNS).

Group Statistics					
(MS+FS) and (MNS+FNS)		N	Mean	Std. Deviation	Std. Error Mean
MT ZN T	(MS +FS)	221	7.036	11.8914	1.8591
	(MNS+ FNS)	227	9.258	12.9615	2.9187

From the Table 6 it can be clearly seen that arithmetic mean of the overall sample of males and females (MS+FS) regularly doing sport activities at least three times a week Mean = 7.036 as arithmetic mean of the overall sample of males and females not doing sport activities (MNS+FNS) Mean = 9.258. By the analysis of standard error of arithmetic mean Std. Error Mean= 1.8591 (in the first column MS+FS) and standard error of arithmetic mean Std. Error Mean=2.9187 (in the second column MNS+FNS) we can see their insignificant difference in comparison to value of standard deviation Std. Deviation= 11.8914 (in the first column MS+FS) and Std. Deviation= 12.9615 (in the second column MNS+FNS) which is indicator of a small results` variability within this subsample.

On the T-test result shown in the table 7, the given t-value t=4.714 is on statistically significant level p=0,000. This data supports the thesis that regular sports activities of males and females, three times a week, can bring to statistically significant reduction of score in the Scale of emotional state of adolescents in comparison to the males and females of the same chronological age, who do not do sport activities.

Table 7. Review of results given by testing of difference of arithmetic means (by t-test) of the subsamples of males and females regularly doing sport activities at least three times a week (MS+FS) and the subsample of the males and females not doing sport activities (MNS+FNS).

Independent Samples Test										
Testing of difference of arithmetic means (by t-test) subsample (MS+FS) and subsample (MNS+FNS)		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
MS+FS MNS+FNS	Equal variances assumed	5.71	.032	4.714	443	.000	2.222	2.12727	3.8662	9.5837
	Equal variances not assumed			4.714	441.254	.000	2.222	2.12727	3.8662	9.5837

Conclusion

Results of this research indicate to the fact that regular sport activities undoubtedly have a great potential as efficient mean for getting and preserving psychological health, with the accent on reduction of depression. On the T-test result shown in the table 7, the given t-value $t=4.714$ is on statistically significant level $p=0,000$. This data supports the thesis that regular sports activities of adolescents aged 15 and 16, both males and females, three times a week, can bring to statistically significant reduction of score in the Scale of emotional state of adolescents in comparison to the males and females of the same chronological age, who do not do sport activities.

On the T-test result shown in the table 3, the given t-value $t=2.387$ is on statistically significant level $p=0,016$. This data supports the thesis that regular sports activities of adolescent males, three times a week, can bring to statistically significant reduction of score in the Scale of emotional state of adolescents in comparison to the males of the same chronological age, who do not do sport activities.

On the T-test result shown in the table 5, the given t-value $t=3.582$ is on statistically significant level $p=0,000$. This data supports the thesis that regular sports activities of adolescent females, three times

a week, can bring to statistically significant reduction of score in the Scale of emotional state of adolescents in comparison to the females of the same chronological age, who do not do sport activities. It should be taken into account that emotional states of young people at this age vary, so they do not give the stable picture of the situation. With older adolescents this picture is a bit more stable, but it is very important to note worries and difficulties of a young person. Taking into account that the Scale of emotional state of adolescents is used for fast detecting of depressive feelings` presence, it is important to say that it has a critical score. The score over 13 means probability of the presence of depression. In this research average values given in the Scale of emotional state of adolescents with the both subsamples were below above mentioned critical score indicating probability of depression, but the subsample of adolescents-male and female members of sport clubs having organized trainings at least three times a week had statistically lower score in Scale of emotional state of adolescents than their peers who do not do sport activities. The given results indicate that regular sport activities contribute to more stable emotional state of adolescents and reduce the risk of depression.

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EFEKTI BAVLJENJA SPORTOM NA EMOCIONALNO STANJE ADOLESCENATA

Sažetak

Ovo istraživanje je provedeno da bi se ustanovili mogući efekti organiziranih sportskih aktivnosti na emocionalno stanje adolescenata. Uzorak ispitanika uključivao je 448 ljudi, muških i ženskih, iz sve tri crnogorske regije, u dobi od 15-16 godina. Cijeli uzorak je bio podijeljen u dva poduzorka, izjednačenih prema kronološkoj dobi: prvi poduzorak uključujući 211 ispitanika, članova i članica sportskih klubova koji treniraju redovito po barem godinu dana, barem tri puta tjedno, te drugi poduzorak uključujući 227 ljudi, muških i ženskih, koji nisu uključeni u organizirane sportske aktivnosti. Nakon obavljanja diskriminativne statističke procedure, dani rezultati ukazuju na uspostavu statistički značajne razlike u prosječnim ocjenama danima u Skali emocionalnog stanja adolescenata s proučenim poduzorcima. S poduzorkom sastavljenim od sportaša i sportašica iz svih crnogorskih regija, sudjelujući u organiziranim sportskim aktivnostima po barem godinu dana, barem tri puta tjedno, prosječne ocjene dane u Skali emocionalnog stanja adolescenata bile su statistički znatno niže od prosječne ocjene dane na istoj skali, s poduzorkom osoba koje ne sudjeluju u organiziranim sportskim aktivnostima.

Ključne riječi: kronološka dob, aktivnost, članovi, skala

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