

Original Article

**Effect of performing regular organized recreational activities on the depression level**

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**Abstract**

This research has been done to establish possible effects of doing organized recreational activities on the level of depression. The sample included 359 males and females, from all Montenegrin regions, aged 18-50. The whole sample was divided into two subsamples, evened according to chronological age: the first subsample that included 182 examinees, male and female club members from all Montenegrin regions, who train regularly for at least a year, at least three times a week; and the second sample that included 177 males and females, from all Montenegrin regions, who do not do recreational activities. After having done a discriminative statistic procedure, the given results indicate that statistically significant differences in the level of depression were established with examined subsamples. With the subsample made of male and female club members from all Montenegrin regions, who train regularly for at least a year, at least three times a week, the level of depression was statistically lower than the level of depression with the subsample of those that do not do recreational activities.

**Key words:** region, stressful, members, includ

**Introduction**

Physical activity is one of the main factors that cause illness and reduce life quality of the population in the developed countries, and with further increase of inactivity, these risks keep growing. The above mentioned problems, caused by reduced physical activity also strongly reflect on psychological state of a modern man, make trouble, more or less, in dependence on man's personality and social environment. We are exposed to numerous stimuli in our day-to-day activities that are responsible for increasing stress levels. Stress is an internal experience that creates psychological or physiological imbalances within an individual and results from the factors in the external environment, the organization or the individual. People in different settings differ in perceiving the stressful situations, and how they cope with stress producing situations (Verma, J.P. at al., 2011) Many research delineating psychological characteristics of exemplary sport participants may allow identification of the strengths and weaknesses of individual athletes, and ultimately, with strategic interventions, facilitate performance enhancement (Rajkumar Sharma & Ashish Kumar Nigam 2011).

Experiences from the countries which, because of growing health problems have changed the prevention measures based on development of habits for doing regular physical activities, as well as their intensifying in the wide population, refer to the conclusion that it is one of the most efficient and most acceptable ways of dissolving a lot of health problems and that most of desirable health changes can be achieved quite quickly. A large study conducted in England showed that 20% of women and 14% of men, suffered from mental problems at some point in their lives (Perrotta, F. 2010). In industrialised countries the most common diagnosis is depression, which affects approximately 50-10% of the population

New researches in this field refer to the fact that mild forms of some psychological disorders, such as depression, anxiety, and psychological stress, can be improved during the regular recreational activities. In a study conducted over many decades, has seen a connection between the level of activity and the risk of falling into a depression (Perrotta, F. 2010). People who place intense levels of physical activity reduced their risk of depression by about 30%, and those who had a medium-high level of activity reduced it by 20% compared to those with low levels of activity.

The proper mechanism of physical activity's effects on the psychological health hasn't been completely clarified. Most of researches have been focused on attempts to find mechanisms of physical activity's effects on the level of neurotransmitters, the substances enabling transmission of information in the nervous system. The conclusion has been made that regular sports activities increase the level of serotonin and beta endorphin which explains positive effects on the mood. Psychologically, after exercising, the person is full of energy, mostly without negative feelings such as tension, fear, indisposition or anxiety. There is also a common contribution in creating a positive image of themselves, especially if the people who exercise achieve their prime goals such as loss of weight and bodyshaping, especially if it had been previously experienced as a personal problem. Anyway,

it could be deduced that positive changes in psychological state of the exercising person are achieved in multidimensional way. Physical exercise makes some physiological and biochemical changes in the body, as well as changes in the way of thinking and seeing themselves and their surrounding, which altogether contributes to improved psychological functioning.

### **Material & Method**

Inter-relation of regular sports-recreational activities and psychological health

Significant psychological changes appear with people as a result of physical exercising. Emotional stability is increased, aggression is decreased and motivation for adaptable changes is increased. There are now scientific evidence sufficient to support the idea that physical activity has significant effects on memory capacity, mental status, conditions and depressive or anxious (Perrotta, F. 2010). Physical activity in different forms so you probably will become an important weapon to prevent and treat these conditions. People who exercise regularly feel better, and they also have more life energy and more will to work. Physical activity have different influences on the above mentioned personality features, and affects even more psychological state which, of course, depends on individual differences of the examinees, and primarily on the gender, chronological age, health state, etc.

On the base of statistic data analysis on effects of recreational activities on depression, it is deduced that exercising significantly reduces the level of depression in all chronological groups, disregarding their previous physical condition. Achieved effects were more visible with the examinees who have been exercising more frequently and who have been involved in the programs of recreational activities longer than others (North, McCullagh&Tran, 1990). Effects of regular training in moderate zone of load on ergocycle and treadmill contribute to improved psychological state with the examinees who faced with serious depression. Besides, effects of physical activity not only depended on the age of the examinees. It has been noticed that less depressive are those children and teenagers who were more active and that the physical activity reduces the risk of depression in the later years.

The data given in the so far researches refer to the fact that the level of physical activity and good mental health are in the high positive correlation. Positive mood, sense of general satisfaction with rare symptoms of anxiety and depression indicate to good mental health (Alderman & Landers, 2004).

#### *Problem, subject, aim and tasks of the research*

*Problem* of this research is analysis of the possible influence of regular recreational activities of male and female club members from all Montenegrin regions on the level of depression.

*Subject* of this research is estimation of the level of depression of male and female fitness club members and people from Montenegro who do not do recreational activities.

*Aim* of the research is establishing the level of differences' significance in the level of depression between male and female fitness club members and people from Montenegro who do not do recreational activities.

*The research tasks* are set in accordance with the above mentioned aim of the research.

*The tasks are the following:*

- The main research task is establishing possible presence of statistically significant difference in the level of depression between male and female club members from all Montenegrin regions, who train regularly for at least a year, at least three times a week; and the level of depression of males and females, from all Montenegrin regions, who do not do recreational activities.
- Establishing whether there are statistically significant differences in the level of depression between male club members from all Montenegrin regions, who train regularly for at least a year, at least three times a week; and the level of depression of males, from Montenegro, who do not do recreational activities.
- Establishing whether there are statistically significant differences in the level of depression between female club members from all Montenegrin regions, who train regularly for at least a year, at least three times a week; and the level of depression of females, from Montenegro, who do not do recreational activities.
- Establishing whether there are statistically significant differences in the level of depression between male club members from all Montenegrin regions, who train regularly for at least a year, at least three times a week; and the level of depression of female club members (from the same fitness clubs) from all Montenegrin regions, who train regularly for at least a year, at least three times a week.

#### *Methods, course and procedures of the research*

According to timely direction, this research is transversal. Technique of interviewing was used in the research, which included the sample of male and female members of some fitness clubs from all Montenegrin regions and the sample of males and females from all Montenegrin regions, who do not do recreational activities.

Estimation of the depression level of male and female fitness club members, aged 18-50, has been done in the rooms of those clubs before the terms scheduled for exercising.

Estimation of depression level of both males and females from Montenegro, aged 18-50, who do not do recreational activities, was done after the previously made interview selecting the sample of males and females from Montenegro who do not do recreational activities, after which implementation of random numbers' method gave the sample of the examinees who do not do recreational activities.

The results given by implementation of standardised measuring instrument for estimation of depression level in the procedure of statistical data processing were processed by the procedures of descriptive and discriminative statistics, after which interpretation of the given results was started.

*Sample of the examinees*

The sample of the examinees included 359 males and females, aged 18-50. The whole sample was divided into two subsamples, evened according to chronological age:

1) The first subsample that included 182 examinees, male and female club members from all Montenegrin regions, who train regularly for at least a year, at least three times a week; This subsample was divided into two subsamples:

- the first subsample that included 87 male fitness club members; and
- the second subsample that included 95 female fitness club members.

2) The second sample that included 177 males and females, from all Montenegrin regions, who do not do recreational activities. This subsample was divided into two subsamples:

- the first subsample that included 87 males who do not do recreational activities; and
- the second subsample that included 95 females who do not do recreational activities.

*Sample and description of the measuring instrument*

For estimation of the depression level of the complete sample in this research we used a standardized scale for estimation of the depression level (Spielberger, Ritterband, Reheiser, & Brunner, 2003), intended to measuring of the current variations in depression intensity and it refers to construct of depression. This scale has been chosen because during its construction, it has been taken care of satisfying two main criteria-that content covers four domains of depression troubles (affective, cognitive, behavioral, and motivational) and that troubles described in items are such that can be changed within a short period of time.

*Statistic data processing*

Results given in this research have been processed with the procedures of descriptive and comparative statistics. The software SPSS statistics 22 has been used for statistic data processing in this research.

**Results with discussion**

The results given in this research are shown in charts in order to provide clear information necessary for their adequate interpretation and discussion. The data that were not significant for results' interpretation were not interpreted. In the following charts, central tendencies and variance measures are presented.

Table 1: Basic descriptive parameters

Statistics (overall sample)		
N	Valid	359
	Missing	0
Mean		20.4300
Std. Error of Mean		1.12505
Median		19.0000
Mode		18.00
Std. Deviation		16.4735
Variance		37,54
Skewness		-.079
Std. Error of Skewness		.169
Kurtosis		-.301
Std. Error of Kurtosis		.345
Minimum		11.00
Maximum		75.00

From the space of comparative parametrical statistics, we used T-test for independent samples to test significance of differences in arithmetic means of independent samples.

Comparative analysis of the subsample of the males regularly doing recreational activities (**MR**) at least three times a week and subsample of the males who do not do recreational activities (**MNR**).

Table 2: Comparative scheme of the results given at the scale for depression level estimation between the subsample of the males regularly doing recreational activities (MR) at least three times a week and subsample of the males who do not do recreational activities (MNR).

Group Statistics				
MR and MNR	N	Mean	Std. Deviation	Std. Error Mean
MR	87	19.5375	15.30598	1.24653
MNR	89	23.5874	16.36455	3.45933

From the Table 2 we can see that arithmetic mean of the sample of the males regularly doing recreational activities (MR) Mean =19.5375 , as the arithmetic mean of the sample of the males who do not do recreational activities (MNR) Mean = 23.5874

By the analysis of Standard Error Mean Std. Error Mean= 1.79094 (in the first column **MR**) and Standard Error Mean Std. Error Mean= 2.81215 (in the second column **MNR**) we can see their insignificance in comparison to the values of standard deviation Std. Deviation=10.89384 (in the first column **MR**) and Std. Deviation=15.30598 (in the second column **MNR**) which is indicator of small variance within this subsample.

Table 3: Scheme of the results given by testing the difference of arithmetic means (t-test) of the subsample of the males regularly doing recreational activities (MR) and subsample of the males who do not do recreational activities (MNR).

Independent Samples Test										
Testing the difference of arithmetic means (t-test) of the subsample (MR) and subsample (MNR)		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t=2.497	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
MR and MN	Equal variances assumed	6.099	.014	t=2.497	174	.017	7.32432	3.33401	1.67810	14.97055
R	Equal variances not assumed				172.142	.017	8.96745	3.33401	1.65773	14.99092

For testing the difference of arithmetic means (t-test) of the subsample of the males, aged 18-50, regularly doing recreational activities (MR) at least three times a week, and subsample of the males, of the same age, who do not do recreational activities (MNR), we used the Independent Samples Test. On the base of the T-test results shown in the Table 3, the given t-value t=2.497 is at statistically significant level of significance p=0,017. This data supports the thesis that regular recreational activities of males three times a week can cause statistically significant reduction of depression level in comparison to the males of the same chronological age who do not do recreational activities.

**Comparative analysis of the subsample of the females regularly doing recreational activities (FR) at least three times a week and subsample of the females who do not do recreational activities (FNR).**

Table 4: Comparative scheme of the results given at the scale for depression level estimation between the subsample of the females regularly doing recreational activities (FR) at least three times a week and subsample of the females who do not do recreational activities (FNR).

Group Statistics				
FR and FNR	N	Mean	Std. Deviation	Std. Error Mean
FR	95	22.3645	15.37654	1.69543
FNR	88	26.3754	14.49808	2.06753

Table 4 shows that arithmetic mean of the sample of female-examinees regularly doing recreational activities (FR) Mean =22.3645 , as arithmetic mean of the sample of female-examinees who do not do recreational activities (FNR) Mean =26.3754

From the analysis of standard error mean Std. Error Mean=1.69543 (in the first column **FR**) and standard error mean Std. Error Mean=2.06753 (in the second column **FNR**) we can see their insignificance in comparison to the value of standard deviation Std. Deviation= 15.37654 (in the first column **FR**) and Std. Deviation=14.49808 (in the second column **FNR**) which is indicator of minimal variation of arithmetic means sample from the arithmetic mean of population. From the above mentioned we can state presence of a little variance of results within this subsample.

Table 5: Scheme of results given from testing differences of arithmetic means (with t-test) of subsample of females regularly doing recreational activities (FR) at least three times a week, and subsample of the females, who do not do recreational activities (FNR)

testing differences of arithmetic means (with t-test) subsample (FR) and subsample (FNR)		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
FR	Equal variances assumed	.040	.841	-3.719	181	.000	- 5.59847	3.4033	-13.46906	-4.16621
FNR	Equal variances not assumed			-3.719	179.53	.000	-6.98375	3.6033	-13.45045	-4.26481

For testing the significance of differences of arithmetic means of subsample of females, aged 18-50, regularly doing recreational activities (FR) at least three times a week, and subsample of the females, of the same age, who do not do recreational activities (FNR), we applied the Independent Samples Test. On the base of the T-test results, shown in the Table 5, the given t-value  $t=3.719$  is on the significant level of significance  $p=0,000$ . This data supports the thesis that regular recreational activities of females three times a week can cause statistically significant reduction of depression level in comparison to the females of the same chronological age who do not do recreational activities.

**Comparative analysis of the subsamples of the males and females regularly doing recreational activities (MR+FR) at least three times a week and subsamples of the males and females who do not do recreational activities (MNR+FNR).**

Table 6: Comparative scheme of the results given at the scale for depression level estimation between the subsamples of the males and females regularly doing recreational activities (MR+FR) at least three times a week and subsamples of the males and females who do not do recreational activities (MNR+FNR).

Group Statistics				
(MR+FR) and (MNR+FNR)	N	Mean	Std. Deviation	Std. Error Mean
(MR +FR)	182	18.4079	9.79819	1.36314
(MNR+ FNR)	177	24.1780	13.5856	1.58467

From the Table 6 we can see that arithmetic mean of the complete sample of male and female examinees (MR+FR) regularly doing recreational activities at least three times a week Mean =18.4079 , as arithmetic mean of the complete sample of males and females who do not do recreational activities (MNR+FNR) is Mean =24.1780 .

From the analisys of standard error mean Std. Error Mean=1.36314 (in the first column MR+FR) and standard error mean Std. Error Mean=1.58467 (in the second column MNR+FNR) we can see their insignificance in comparison to the value of standard deviation Std. Deviation=9.79819 (in the first column MR+FR) and Std. Deviation= 13.5856 (in the second column MNR+FNR) which is indicator of minimal variation of arithmetic means sample from the arithmetic mean of population. From the above mentioned we can state presense of a little variance of results within this subsample.

Table 7: Scheme of results given from testing differences of arithmetic means (with t-test) of subsample of males and females regularly doing recreational activities (MR+FR) at least three times a week, and subsample of the males and females, who do not do recreational activities (MNR+FNR)

testing differences of arithmetic means (with t-test) subsample (MR+FR) and subsample (MNR+FNR)		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
MR+FR	Equal variances Assumed	4.830	.030	4.325	357	.000	9.20000	2.12727	4.99625	13.4037
MNR +FNR	Equal variances not assumed			4.325	354.48	.000	9.20000	2.12727	4.99310	13.4069

For testing the significance of differences of arithmetic means of complete subsamples of males and females, members of the above mentioned fitness clubs, aged 18-50, regularly doing recreational activities (**MR+FR**) at least three times a week, and complete subsamples of the males and females, of the same age, who do not do recreational activities (**MNR+FNR**), we applied the Independent Samples Test.

On the base of the T-test results, shown in the Table 7, the given t-value  $t=4.325$  is on the statistically significant level  $p=0,000$ . This data supports the thesis that regular recreational activities of males and females three times a week can cause statistically significant reduction of depression level in comparison to the males and females of the same chronological age who do not do recreational activities.

### Conclusion

Results of this research indicate that regular recreational activities undoubtedly have a great potential as an efficient mean for achieving and preserving psychological health, with the accent on reducing depression.

On the base of the T-test results, shown in the Table 7, the given t-value  $t=4.325$  is on the statistically significant level  $p=0,000$ . This data supports the thesis that regular recreational activities of males and females three times a week can cause statistically significant reduction of depression level in comparison to the males and females of the same chronological age who do not do recreational activities.

On the base of the T-test results, shown in the Table 3, the given t-value  $t=2.497$  is on the significant level of significance  $p=0,017$ . This data supports the thesis that regular recreational activities of males three times a week can cause statistically significant reduction of depression level in comparison to the males of the same chronological age who do not do recreational activities.

On the base of the T-test results, shown in the Table 3, the given t-value  $t=3.719$  is on the significant level of significance  $p=0,000$ . This data supports the thesis that regular recreational activities of females three times a week can cause statistically significant reduction of depression level in comparison to the females of the same chronological age who do not do recreational activities.

We conclude that exercise exerts a beneficial effect on mental health stress the authors of the study. This mechanism is not yet clear, since any benefits of exercise remain to be evaluated on different forms of depression and understand how physical activity can affect the mental state (Perrotta, F. 2010). With a view to prevent depression there can be no doubt consider physical activity as a possible strategy.

Anyway, we should take into account that epidemiological studies warn that in every moment, almost a quarter of the whole population of the developed countries suffer from moderate anxiety, depression and other emotional disorders. For that reason, role of physical activity and generally active styles of life must not be neglected, because it is an available and safe therapy. Importance of this research could be expressed through increasing of motivation for the youths to do regular recreational activities, because that way we could expect reduction of the level of depression which is, according to forecasts of the World Health Organisation, in continual expansion. Care for expanding the number of active participants in sports-recreational activities represents a significant and cultural need, and it is one of primary tasks of the modern society.

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