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INFLUENCES OF PRACTICING LEISURE SPORTS ACTIVITIES ON MENTAL HEALTH IN ADULT POPULATION

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Abstract

Traditionally, physical activities exert favourable effects on physical and motor development of the individual. This truth is already well-known, but that idea does not take into account that the individual is a bio-psycho-social complex, and any influence exerted on him causes changes on all of its components.
In this context, the present study aims to highlight the correlation between mental health that adults perceive and identify the proportion of practicing leisure sports activities in their free time.
We applied a multiple survey, centred on the main component of quality of life, health, and the investigation of the declared / perceived mental health was considered as one of the subcomponents. The questionnaire-based survey focused on psychic sphere included 20 questions. In terms of targeted content and interpretation of data, the level of the anxiety index in adults who practice or not leisure sports activities was emphasised.
The collected data were grouped by age, educational level and subjects' gender.
The Results of study leads that practice of physical exercise improved mental health of the individual, especially since the amount of time spent on such activities is higher.

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Keywords: Mental health; anxiety; leisure sports activities.

1. Introduction

Psychologists describe anxiety as a nonspecific fear, a constant concern without any particular reason, which can give you sleepless nights, with a persistent impression of threat etc., all symptoms being present without any basis.

Anxiety overtakes a "normal" limit when the length of disorders exceeds six months, affecting work and relationships with others and the individual is in the position of not having the opportunity to control the symptoms that take hold of him. Also, Scott et al. (2007) point out that there is a correlation

between the mental state of individuals and their physical condition, emphasizing that those with anxiety or depression disorders are more likely to have chronic physical conditions. Fox K.R. (1999) showed that exercise has a moderate reducing effect on state and trait anxiety and that aerobic and resistance exercise enhance mood state. The same idea is also revealed in the study conducted by Taylor A. H. (2000) which demonstrated that physical activity has a low-to-moderate effect in reducing anxiety. Schmitz et al. (2004) reported that physical activity has been found to improve mental health conditions, particularly anxiety, depression and general well-being. According to the therapist Sally A. Connolly, "physical and psychical benefits brought by sport can lead to the improvement of the symptoms caused by anxiety and depression. Research shows that at least 30 minutes of physical exercise performed 3-5 days a week could bring significant improvements". Moreover, some studies compare the benefits of physical activity to those made by drug therapy, demonstrating that the effects of the physical exercise can persist after a longer period of time (Maroşan, 2012).

Nechita (2013) mention that the practice of sport is the most important section in health improvement aimed at restoring functions diminished, increasing functional and even take compensatory mechanisms in case of functional rehabilitation.

2. Problem Statement

All the above referenced studies lead us to believe that, in addition to other more or less specific and traditional interventions, in these situations of bio-psycho-social imbalance, you can choose to engage in recreational sports as a primary or complementary mental sphere means of rehabilitation. If they are carried out constantly under specialist supervision, they will undoubtedly have the effect of reducing the intensity of symptoms associated with anxiety and, in general, can lead to an improvement in health.

The Eurobarometer survey conducted in 2013, concerning the countries and the share of population in terms of practicing sport / leisure sport activities, places Romania on the second-to-last position in relation to the other European countries (Craciun, 2014).

3. Research Questions

Our research aims to reveal if there is a link between the poor Romanian citizen participation in sport/ leisure activities and their own level of perception of their mental condition.

4. Purpose of the Study

This study aims to highlight the correlation between mental health perceived by adults and the importance that they attach to practicing leisure sports activities in their free time.

The research was conducted during October 2012 - March 2013, on a sample of 500 adults, with ages ranging from 25 to 49 years old.

5. Research Methods

Within this research, we applied a survey centred on the main component of quality of life - health, whilst mental health investigation declared / perceived by respondents was considered as a subcomponent.

The survey contained 20 questions, with interpretation values of the results between 1 and 60 points. The values of the applied survey were: *a-1 b-2 c-3 (points)*. The data was collected for these 20 items, and the results were interpreted as follows: between 20-40 points "low anxiety"; between 41-49 points "average anxiety"; between 50-60 points "increased anxiety" (Bădeliţă, 2014).

The survey was applied in Brasov on subjects from the targeted group, both at the beginning and ending of their various leisure sports activities and also on subjects interviewed on the streets for all categories of adults.

The investigation was focused on subjects who stated they practiced leisure activities with a certain degree of constancy (different sports: cross country running, hiking, jogging, mountain running, running in parks, sports games, activities in gyms, cycling, swimming, skiing etc.), as well as on subjects who stated they did not practice sports (interviewed on the street). Subjects participating in mass sports activities organised by regional / local institutions, sports associations, non-profit organisations etc. have also been investigated. The survey included closed, open and foreshadowed responses.

The collected data were grouped by age, educational level and gender of the subjects and subsequently they were statistically and mathematically processed via SPSS.

6. Findings

6.1. The Interpretation of the Collected Data after Applying The Survey Method

6.1.1. Validation of the Survey Focused on Mental Health

This survey achieved an Alpha validity coefficient of 0.703, demonstrating a good level of fidelity (Table 01).

Table 01. The degree of internal consistency of the survey focused on mental health

Cronbach's Alpha	N of Items
.703	20

6.2. The State of Mental Health, Depending on Sample, for Adults Practicing / Not Practicing Leisure Sports Activities

Analysing the sample of people who practice leisure sports activities, depending on their mental health score, it can be noticed that the average value is 28.84. The results deviate from the average, plus or minus, with 6.33 (SPSS 20, 2012).

Modal value is unique and 25. This means that that the most frequent score was 25.

The Kurtosis coefficient is 4.647, which indicates a leptokurtic distribution, with values centred on the average. The Skewness coefficient (2.142) shows a distribution angled heavily to the left, with more extreme values to the right.

The minimum score was 21, while the maximum score was 55 (Table 02, Figure 01).

Table 02. Descriptive statistics on mental health for the sample of subjects who practice leisure sports activities[a]

Mental health condition

N	Valid responses	318
	Not responses	0
Average		28.84
Median		26.00
Mode (modal value)		25
Standard deviation		6.331
Skewness asymmetry coefficient		2.142
Kurtosis coefficient		4.647
Minimum		21
Maximum		55

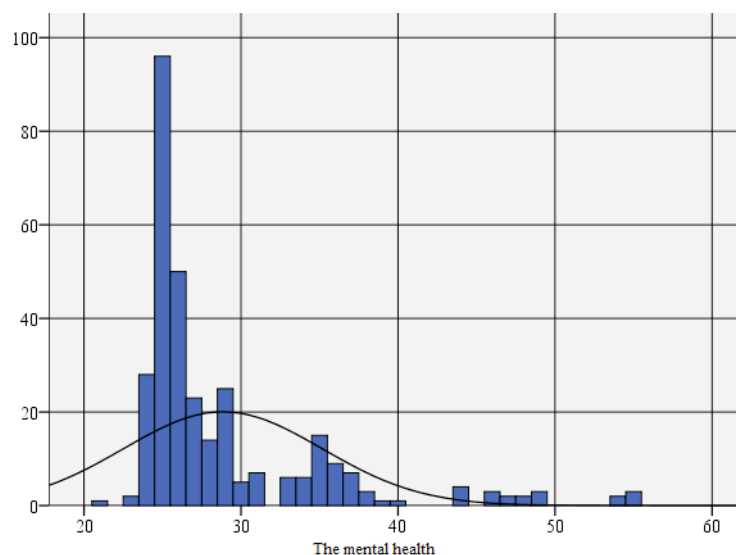a. Practicing leisure sports activities = yes

Figure 01. Frequency distribution of mental health scores in subjects who practice leisure sports activities

Considering a p-value of less than 0.05, that was obtained after a normal distribution analysis, we can conclude that the variable is not normally distributed (Table 03).

Table 03. Testing normality of scores distribution on the mental health of subjects who practice leisure sports activities[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Value	Degrees of freedom	Significance threshold	Value	Degrees of freedom	Significance threshold
		df	p		df	p
Mental health condition	.243	318	.000	.715	318	.000

a. Practicing leisure sports activities = yes

People practicing leisure sports activities have in their vast majority a *low anxiety* (76.7%), 18.6% show an *average anxiety* and only 4.7% have a *high anxiety* (Table 04, Figure 02).

Table 04. Distribution of the mental health index level in the sample of subjects who practice leisure sports activities[a]

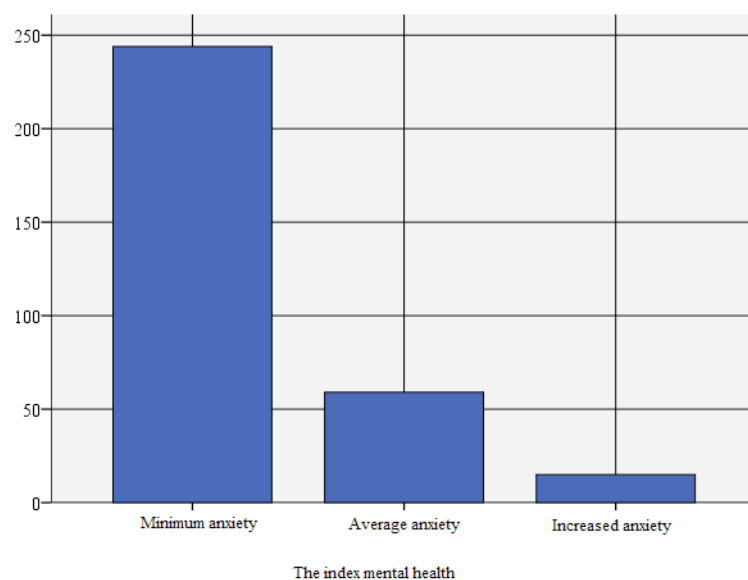|		Frequency	Percentage	Percentage of valid responses	Cumulative percentage
Valid responses	low anxiety	244	76.7	76.7	76.7
	average anxiety	59	18.6	18.6	95.3
	high anxiety	15	4.7	4.7	100.0
	Total	318	100.0	100.0	

a. Practicing leisure sports activities = yes

Figure 02. Distribution of the mental health index level for subjects who practice leisure sports activities

The average score in mental health achieved by subjects who *do not practice leisure sports activities* is 36.73, the most common value being 32 (SPSS 20, 2012).

Analysing the score distribution, we can notice these values deviate from the average, plus or minus, with 9.27. The asymmetry coefficient (0.155) shows a left-directed distribution, with more extreme values to the right. The kurtosis coefficient (Kurtosis=-0.874) indicates a platykurtic distribution, broader than a normal distribution, with multiple values spread out over a longer interval around the average (Table 05, Figure 03).

Table 05. Descriptive statistics on mental health for the sample of subjects who do not practice leisure sports activities[a]

Mental health condition

N	Valid responses	182
	No responses	0
Average		36.73
Median		38.00
Mode (modal value)		32
Standard deviation		9.274
Skewness asymmetry coefficient		.155
Kurtosis coefficient		-.874
Minimum		20
Maximum		54

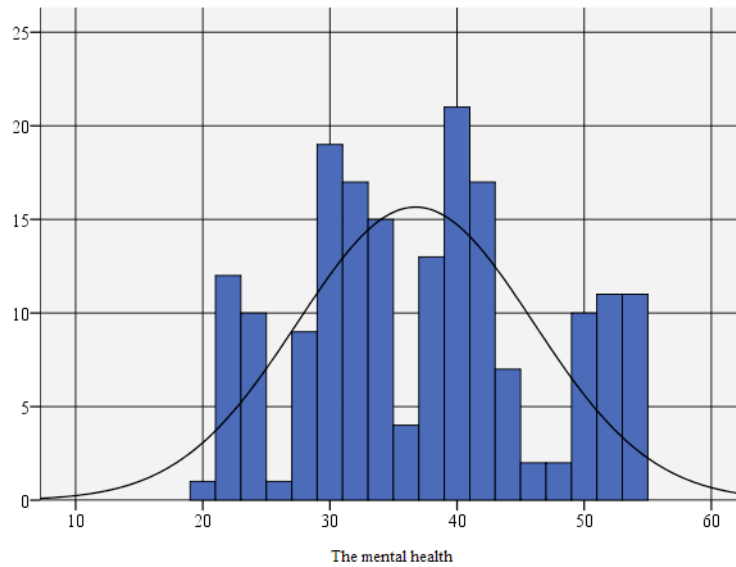a. Practicing leisure sports activities = no

Figure 03. Frequency distribution of mental health scores in subjects who do not practice leisure sports activities

The result of the Kolmogorov–Smirnov test indicates that the variable "state of mental health" in subjects who do not practice leisure sports activities is not normally distributed (Table 06).

Table 06. Testing normality of scores distribution on the mental health of subjects who do not practice leisure sports activities[a]

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Value	Degrees of freedom df	Significance threshold p	Value	Degrees of freedom df	Significance threshold p
Mental health condition	.090	182	.001	.960	182	.000

a. Practicing leisure sports activities = no

Subjects not practicing leisure sports activities have in their vast majority an *average anxiety* (52.2%), 19.2% show a *high anxiety* and 28.6% have a *low anxiety* (Table 07, Figure 04).

Table 07. Distribution of the mental health index level in the sample of subjects who do not practice leisure sports activities[a]

		Freque ncy	Percentage	Percentage of valid responses	Cumulative percentage
	low anxiety	52	28.6	28.6	28.6
Valid	average anxiety	95	52.2	52.2	80.8
responses	high anxiety	35	19.2	19.2	100.0
	Total	182	100.0	100.0	

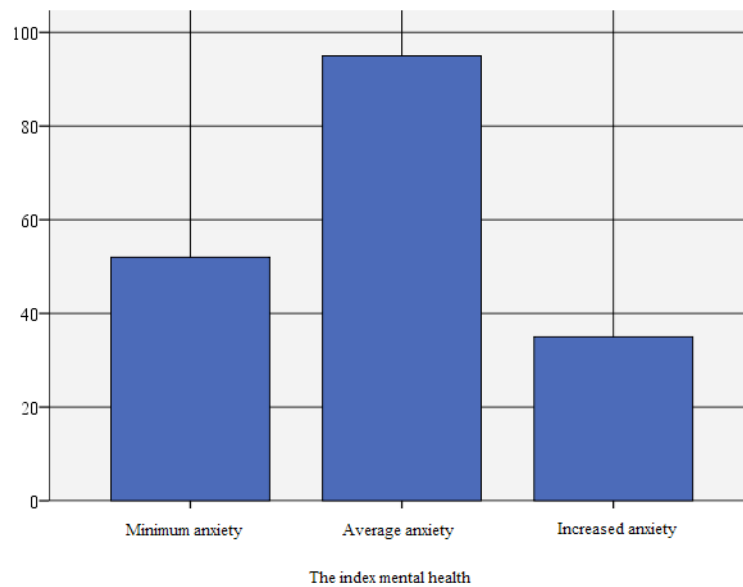a. Practicing leisure sports activities = no

Figure 04. Distribution of the mental health index level for the subjects who do not practice leisure sports activities

6.3. The State of Mental Health Depending on The Subjects' Age

The data reveals that most people practicing leisure sports activities (over 75%) have a low anxiety level (p=0.765) and the difference in perception between age groups is low (Table 08).

Table 08. Distribution of the mental health index level for the subjects practicing leisure sports activities depending on age[a]

			Mental health index			Total
			low anxiety	average anxiety	high anxiety	
Age	25-29 years old	Number	23	10	2	35
		% from age	65.7%	28.6%	5.7%	100.0%
	30-34 years old	Number	62	13	5	80
		% from age	77.5%	16.2%	6.2%	100.0%

35-39 years old	Number	27	8	1	36
	% from age	75.0%	22.2%	2.8%	100.0%
40-44 years old	Number	97	22	6	125
	% from age	77.6%	17.6%	4.8%	100.0%
45-49 years old	Number	35	6	1	42
	% from age	83.3%	14.3%	2.4%	100.0%
Total	Number	244	59	15	318
	% from age	76.7%	18.6%	4.7%	100.0%

a. Practicing leisure sports activities = yes

For subjects who do not practice leisure sports activities, we notice a higher percentage of mental health in people aged between 40-44 and 45-49. For the other categories, the percentage of people with high anxiety is between 20% and 24.1% (Table 09).

Table 09. Distribution of the mental health index level for subjects not practicing leisure sports activities depending on age[a]

			Mental health index			Total
			low anxiety	average anxiety	high anxiety	
Age	25-29 years old	Number	9	15	6	30
		% from age	30.0%	50.0%	20.0%	100.0%
	30-34 years old	Number	12	20	8	40
		% from age	30.0%	50.0%	20.0%	100.0%
	35-39 years old	Number	6	16	7	29
		% from age	20.7%	55.2%	24.1%	100.0%
	40-44 years old	Number	15	27	8	50
		% from age	30.0%	54.0%	16.0%	100.0%
	45-49 years old	Number	10	17	6	33
		% from age	30.3%	51.5%	18.2%	100.0%
Total		Number		95	35	182
		% from age		52.7%	19.66%	100.0%

a. Practicing leisure sports activities = no

6.4. The State of Mental Health Depending on The Subjects' Education

The education level of those who practice leisure sports activities is approximately equally distributed in percentage as per the criterion of perceiving the minimum level of anxiety (over 70%), basically with no significant statistical differences for this criterion (p=0.104). However, the lower the level of education, the more cases of increased anxieties are registered (Table 10).

Table 10. Distribution of the mental health index level for subjects practicing leisure sports activities depending on education[a]

			Mental health index			Total
			low anxiety	average anxiety	high anxiety	
Study level	Elementary school	Number	14	1	3	18
		% from study level	77.8%	5.6%	16.7%	100.0%
	High school	Number	120	31	7	158
		% from study level	75.9%	19.6%	4.4%	100.0%
	Tertiary education	Number	110	27	5	142
		% from study level	77.5%	19.0%	3.5%	100.0%
Total		Number	244	59	15	318
		% from study level	76.7%	18.6%	4.7%	100.0%

a. Practicing leisure sports activities = yes

For the sample of subjects who do not practice sports there is no significant difference either (p=0.806) regarding mental health index for subjects with different levels of education. However, compared to the same criterion, there is a trend of perceiving a higher average anxiety in subjects with higher education who practice this type of activities, where the situation is reversed (the higher the education level, the lower the level of anxiety) (Table 11).

Table 11. Distribution of the mental health index level for subjects not practicing leisure sports activities depending on education[a]

			Mental health index			Total
			low anxiety	average anxiety	high anxiety	
Study level	Elementary school	Number	3	5	1	9
		% from study level	33.3%	55.6%	11.1%	100.0%
	High school	Number	36	66	28	130
		% from study level	27.7%	50.8%	21.5%	100.0%
	Tertiary education	Number	13	24	6	43
		% from study level	30.2%	55.8%	14.0%	100.0%
Total		Number	52	95	35	182
		% from study level	28.6%	52.2%	19.2%	100.0%

a. Practicing leisure sports activities = no

6.5. The State of Mental Health Depending on The Subjects' Gender

Analysing mental health index depending on gender for subjects practicing sports, statistically there is no significant difference (p=0.380) between men and women. However, a remarkable fact is that over 74% for both men and women have a low level of anxiety (Table 12).

Table 12. Distribution of the mental health index level for subjects practicing leisure sports activities depending on gender[a]

			Mental health index			Total
			low anxiety	average anxiety	high anxiety	
Gender	male	Number	119	25	5	149
		% from gender	79.9%	16.8%	3.4%	100.0%
	female	Number	125	34	10	169
		% from gender	74.0%	20.1%	5.9%	100.0%
Total		Number	244	59	15	318
		% from gender	76.7%	18.6%	4.7%	100.0%

a. Practicing leisure sports activities = yes

For the subjects who do not practice sports, gender differences are not significant (p=0.929), but over 50% of respondents perceive their anxiety level to an average level and 18% at a high level (Table 13).

Table 13. Distribution of the mental health index level for subjects not practicing leisure sports activities depending on gender[a]

			Mental health index			Total
			low anxiety	average anxiety	high anxiety	
Gender	male	Number	24	41	16	81
		% from gender	29.6%	50.6%	19.8%	100.0%
	female	Number	28	54	19	101
		% from gender	27.7%	53.5%	18.8%	100.0%
Total		Number	52	95	35	182
		% from gender	28.6%	52.2%	19.2%	100.0%

a. Practicing leisure sports activities = no

6.6. Statistical Relationship between Practicing Leisure Sport Activities and Mental Health Condition

By applying the t-test for independent samples, it was observed that there are significant differences between the average scores obtained by subjects practicing leisure sports activities (M=28.84; Sd=6.331) and not practicing leisure sports activities (M=36.73; Sd=9.274), t (df=279.109) =-10.200; p=0.001, having equal variances not assumed (F=56.993) (Table 14; 15).

Table 14. Statistics on central tendency and dispersion mental health indexes in the two samples (subjects who practice and do not practice leisure sports activities)

	Practicing leisure sports activities	N	Average	Standard deviation	Standard deviation mean
Mental health condition	yes	318	28.84	6.331	.355
	no	182	36.73	9.274	.687

Table 15. T-test comparing mental health indexes means

		Levene's test for equality of variances		T-test for equality of means					95% Confidence interval of the difference	
		F	p	t	df	p	Mean difference	Standard error difference	lower	upper
Mental health condition	Equal variances assumed	56.993	.000	-11.268	498	.000	-7.891	.700	-9.267	-6.515
	Equal variances not assumed			-10.200	279.109	.000	-7.891	.774	-9.414	-6.368

Regardless of age, studies, gender of the investigated subjects, the collected data indicates that the level of anxiety is lower for those who systematically practice physical exercises and their beneficial influences are more significant for the age interval of 45-49.

7. Conclusions

The results obtained allowed us to formulate the following:

- The more systematically and continuously physical exercises are done the greater chance to enhance the individual's mental health condition.
- Regardless of type of physical activity performed, this research shows it produces beneficial effects on the human mental health.
- Higher educated subjects are more affected (positively or negatively) by the experimental factor taken into account, namely, practicing or not practicing leisure sports activities.
- Regardless of criteria chosen for subjects, the people who do not practice leisure sports activities have a much higher anxiety level than people whose choice of leisure activities are oriented towards the practice of one, two or more sports.

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