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ScienceDirect

Procedia - Social and Behavioral Sciences 117 (2014) 395 – 401

Procedia

Social and Behavioral Sciences

ICSPEK 2013

Dimensions of the Personality of Athlete and Non-athlete Normal Weight and Overweight Female Students

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Abstract

The objective of this study was to identify the differences existing at the personality level, between the normal weight and overweight athlete and non-athlete female students. The five dimensions (Sociability, Sensation Seeking, Neuroticism-anxiety, Activity and Aggression-hostility) investigated by us, were measured through the ZKPQ personality questionnaire belonging to the Cognitrom Assessment System for computer-assisted psychological assessment platform, designed by Cognitrom. Pursuant the application of the Kruskal-Wallis test, statistically significant ($p < 0.05$) differences between the results on Neuroticism-anxiety scale and the results on the Aggression-hostility scale were found. The athletes prove a lower anxiety level and, at the same time, a higher aggression level, compared to the non-athlete female students from the faculty non-specialized in sports (between whom there are no significant differences). This can be explained by the effects of exercising a performance sport over the development of their personality, the athlete female students becoming more confident in their own capacities, not being concerned by things without importance, but being more aggressive, this attitude facilitating, along with pugnacity and assiduity, the success in competition.

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Selection and peer-review under responsibility of ICPEK 2013.

Keywords: personality, anxiety, aggression, normal weight, overweight;

1. Introduction

The personality means the overall feature of the psychic life of the human being, deemed as a bio-psychic-social-cultural unit and a holder of epistemic, axiological and pragmatic functions (Horghidan et al, 2001). The personality is the result of the global psychic development, synthesizing the quite stable psychic aspects. Among the personality dimensions, our interest is focused on anxiety and aggression. The anxiety is a disorder of the affectivity, expressed by fear, unrest sensations, felt in absence of true causes able to cause them. Many times, the

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anxiety feeds and strengthens the stress. It globally affects the human body, expressing at somatic, psychic and behavioral levels. The anxiety on short term and at moderate intensity level is not always noxious, being able to lead to the growth of the adapting potential and activity efficiency. But, on long term and at high intensity level, anxiety could become a very noxious phenomenon for the human being. A person suffering of generalized anxiety develops a special psychological functioning: his/her worries are excessive compared to the reality, he/she is afraid due to none objective reasons (Mitrache and Tüdöş, 2011). Starting from the Weiting (2012), studies recommending maintenance or consolidation of positive emotions, as alternative solution to improve the affective condition, compared to the traditional solutions intended to diminish the negative emotions, we emphasize the fact that the main formative motor activities (physical education, sports, leisure time) offer the proper framework for achieving this grievance. Long and van Stavel (1995) point out the role of exercising physical exercise during the leisure time over the anxiety level, based on some experimental researches which prove that there is a positive effect of anxiety reduction, due to such exercising, mostly in case of adults having a stressing lifestyle. With regard to the performance sport activity, the experts talk about an optimum anxiety area, which differs from a sportive person to another, within whose limits the relevant person expresses his/her ability to obtain performance at a higher level and can register the best results (Krane, 1993). The specialized literature often addresses the thematic of athletes' personality by comparing it with the non-athletes' personality, being discussed different hypotheses supporting the effects of exercising sports on some dimensions of the development, as the gravitational or selection hypothesis, the developmental hypothesis or the Eysenck's personality theory. Such studies prove, at experimental level, that physical exercise lowers the anxiety level, sports exposing the athlete many times to the same type of emotional stress and leading to the adaptation of the nervous system and to the diminishing of its frailty (McKelvie, Lemieux and Stout, 2003). Another dimension of the personality, closely connected to performance, is the aggression. Because winning is the ultimate goal of an athlete and the aggression becomes a component of the capacity to reach such goal, the athlete is required to maintain an aggressive attitude during the competition, and in same extent, to develop his/her ability to inhibit his/her extreme aggressive inducements. The aggressive conducts are the destructive, brutal, violent, often inefficient conducts which, most of times, are directed against objects or persons. The aggressive person acts according to his/her own objectives, needs and interests, to the detriment of the others. Epuran et al. (2001), studying the conduct of athletes in competition, makes a distinction between aggression and pugnacity. Pugnacity is a constructive attitude, the athlete fighting with all his/her energy to overcome the opponent or other „barriers” as space, time and gravitation. Knowing that there are many situations when the attitude of the athlete in contest is more important than the level of his/her technical skills, we consider that the whole conduct of the athlete must be oriented toward the expression of the pugnacity, as form of control of the aggressive destructive inducements, which might be triggered during the contest. The fact that, in the present, aggression strongly expresses in the society starting from early ages, should also not be minimized, such manifestations being mainly triggered by the ethnicity-based, economic, political and cultural differences between individuals.

2. Organization of the research

2.1. Scope

The scope of this study is to identify the differences, existing at the personality level, between normal weight and overweight female students, athletes or non-athletes, by investigating the personality dimensions as the Sociability, Impulsively Sensation Seeking, Neuroticism-anxiety, Aggression-hostility and Activity.

2.2. Subjects

The sample consisted of 3 groups of students: a group of 15 normal weight athlete female students from the Faculty of Physical Education and Sports (UNEFIS Bucharest), a group of 15 normal weight non-athlete female students from the Faculty of Accountancy and Management Informatics and a group of 15 overweight non-athlete female students from the Faculty of Accountancy and Management Informatics (A.S.E. Bucharest). The age of these students was between 18 and 24 years old and the education cycle followed by them is the bachelor degree cycle.

3. Methods

To conduct this research, there were used the bibliographical study, the observation, the conversation, the BMI, the questionnaire – ZKPQ (Zuckerman-Kuhlman Personality Questionnaire), belonging to the Cognitrom Assessment System computer-assisted psychological assessment platform (SPSS), designed by Cognitrom.

3.1. Tests description

BMI (Body Mass Index) was used to identify the type of body structure of the participants to this survey and to establish the groups of subjects based on somatic criteria. Calculated according to the traditional formula, the BMI allowed setting up two groups of normal weight female students and one group of over weight female students.

ZKPQ – Zuckerman-Kuhlman Personality Questionnaire – is intended to measure the five factors representing the dimensions of the Alternative Five-Factor Model (AFFM): impulsively seeking sensations, sociability, neuroticism-anxiety, aggression-hostility and activity. The impulsively seeking sensations scale refers to the propensity to quickly, instinctively, without prior meditation, react to the general need for excitement and agitation, to the preference for unpredictable situations and friends with unpredictable conduct, as well as to the need for change and novelty. The Neuroticism-anxiety scale joints items referring to annoyances, emotional stress, worries, difficulties in decision-making process, lack of self-confidence and sensitiveness to criticisms. The Aggression-hostility scale describes the inclination for expressing the aggression almost under oral form. Also, it offers information on the subjects with volcanic temperament and on the impatience expressed in the interpersonal relations. The Sociability scale measures the pleasure the subject finds in interacting with others and in having many friends. It also measures the subject's preference for solitary activities, as well as the intolerance to social isolation. The Activity scale items measure the need to be always active, the impatience and unrest felt when there is nothing to be done, as well as the need to constantly make effort, the preference for a challenging, difficult work and the consumption of a high amount of energy in executing the tasks. Before interpreting the scores obtained by a subject on the ZKPQ Questionnaire scales, it is analyzed the subject's score on the Social Desirability (Lie or Inconsistency) scale. Subjects obtaining high scores on this scale are generally those who want making good impression to others and it is likely not answering sincerely to the questionnaire items. The questionnaire was applied in October 2012, as initial test, the comparison between different categories of subjects being required in order to determine the personality differences existing between them, due to their lifestyle, which is an active one and/or a sedentary one. The observation and the interview supported this research, providing information on the condition at that time of the subjects, their availability for making effort and for being assessed, as well as on affective manifestations expressed under a testing.

4. Results

In case of Social Desirability scale, the scores obtained by the participants are not „high”. The subjects did not denature the answers to the questionnaire to the end of trying to create a favoring self-image. The preliminary review of the data showed that, in case of the ZKPQ questionnaire scales, there are no excessive – extreme or marginal – values per each group of subjects. We hereby illustrate the box-plot graph for the Neuroticism-anxiety scale (fig. 1). Through the Kruskal-Wallis (1999) test, it was verified if there are statistically significant differences among the three groups of participants, in terms of results obtained on the ZKPQ questionnaire scales. Table 1 shows the value of the Kruskal-Wallis H (Chi-Square) test, the freedom degrees (df) and the threshold of statistical significance (Sig.).

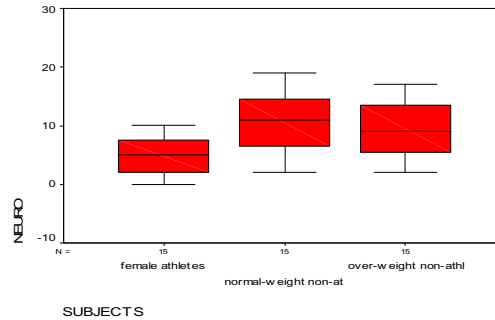


Fig.1. Extreme values – Neuroticism-anxiety Scale results

Table1. Results for group “female athletes” vs. group “normal-weight non-athletes” and group “over-weight non-athletes” –Test Statistics^{a, b}

	Sociability	Impulsively seeking sensations	Activity	Neuroticism-anxiety	Aggression
Chi-Square	1.465	1.496	1.316	9.117	8.254
df	2	2	2	2	2
Asymp. Sig.	.481	.473	.518	.010	.016

(a) Kruskal Wallis Test; (b) Grouping Variable: subjects

Whereas $H(3) = 9.117$, respectively $H(3) = 8.254$, and $p = 0.010$, respectively $p = 0.016$, it is found that there are significant differences among the groups, according to the results obtained by the subjects on the Neuroticism-anxiety and Aggression-hostility scales. To compare by pairs the results obtained by the tested groups of subjects, we use the Mann-Whitney (U) test (Labăr, 2008), for two independent samples and we adjusted the threshold of statistical significance, according to the number of comparisons (three in our case), in such manner that $p = 0.05 / 3 = 0.016$ (table 2). We will present hereinafter the results of each of the three comparisons.

Table 2. Results for group “female athletes” vs. group “normal-weight non-athletes” - Test Statistics^b

	Sociability	Impulsively seeking sensations	Activity	Neuroticism-anxiety	Aggression
Mann-Whitney U	87.000	85.000	83.000	47.000	54.500

Z	-1.064	-1.149	-1.239	-2.726	-2.415
Asymp. Sig. (2-tailed)	.287	.251	.215	.006	.016
Exact Sig. [2*(1-tailed Sig.)]	.305a	.267a	.233a	.006a	.015a

(a) Not corrected for ties; (b) Grouping Variable: subjects

The Mann-Whitney test value on the Neuroticism-anxiety scale is 47.000. The table critical value for 0.05 alpha level and $N = 15$ (for each group) is 65. Whereas calculated U value is lower than the table critical value ($47.000 < 65$), and $p = 0.006$, we may conclude that between female athletes (Median = 5.00) and normal-weight non-athletes (Median = 11.00), there are statistically significant differences in terms of anxiety. Female athletes present an anxiety level significantly lower, compared to that of the normal-weight non-athletes. Thus, the female athletes are more controlled, less worrying for unimportant things, compared with the normal-weight non-athletes. The effect size is $r = 0.49$, which shows us that the effect of group variable (female athletes/ normal-weight non-athletes) on the results is strong, in case of anxiety.

For the Aggression-hostility scale, the Mann-Whitney test value is 54.500. Whereas calculated U value is lower than the table critical value ($54.500 < 65$), and $p = 0.015$, we may conclude that between female athletes (Median = 9.00) and normal-weight non-athletes (Median = 4.00), there are statistically significant differences, in terms of aggression. Female athletes present an aggression level significantly higher, compared to that of the normal-weight non-athletes. The female athletes directly express their annoyance, being more likely to use rough words when they are angered, compared with the normal-weight non-athletes. The effect size is $r = 0.44$, which shows us that the effect of group variable (female athletes/ normal-weight non-athletes) on the results is strong, in case of aggression (table 3).

Table 3. Results for group “female athletes” vs. group “over-weight non-athletes” - Test Statistics^b

	Sociability	Impulsively seeking sensations	Activity	Neuroticism-anxiety	Aggression
Mann-Whitney U	89.000	90.500	96.000	54.500	52.000
Z	-.982	-.919	-.694	-2.413	-2.521
Asymp. Sig. (2-tailed)	.326	.358	.487	.016	.012
Exact Sig. [2*(1-tailed Sig.)]	.345a	.367a	.512a	.015a	.011a

(a) Not corrected for ties; (b) Grouping Variable: subjects

The Mann-Whitney test value on Neuroticism-anxiety scale is 54.500. The table critical value for 0.05 alpha level and $N = 15$ (for each group) is 65. Whereas calculated U value is lower than the table critical value ($54.500 < 65$), and $p = 0.015$, we may conclude that between female athletes (Median = 5.00) and overweight female non-athletes (Median = 9.00) there are statistically significant differences, in terms of anxiety. Female athletes present an anxiety level significantly lower, compared to that of the overweight female non-athletes. Thus, the female athletes are more controlled, less worrying for unimportant things, compared with the overweight non-athletes. The effect size is $r = 0.44$, which shows us that the effect of group variable (female athletes/ overweight non-athletes) on the results is strong, in case of anxiety.

For the Aggression-hostility scale, the Mann-Whitney test value is 52.000. Whereas calculated U value is lower than the table critical value ($52.000 < 65$), and $p = 0.011$, we may conclude that between female athletes (Median = 9.00) and overweight non-athletes (Median = 6.00), there are statistically significant differences, in

terms of aggression. Female athletes present an aggression level significantly higher, compared to that of the overweight non-athletes. The female athletes directly express their annoyance, being more likely to use rough words when they are angered, compared with the overweight non-athletes. The effect size is $r = 0.46$, which shows us that the effect of group variable (female athletes/ overweight non-athletes) on the results is strong, in case of aggression. The statistical analyze of the data emphasized that between normal-weight non-athletes female students and the overweight non-athlete female students, there are no statistically significant differences, in terms of sociability, impulsively seeking sensations, activity, anxiety or aggression.

5. Conclusions

This survey accentuates the statistically significant differences between the normal-weight female athlete students and the overweight female non-athlete students, in connection to some personality dimensions, as Neuroticism-anxiety and Aggression-hostility.

The sports performance activity has beneficial effects on the personality development and especially on the affective life of athletes, positively influencing their anxiety level. The results show that the female athletes present an anxiety level significantly lower, compared to that of the normal-weight and overweight non-athletes. The female athletes are more controlled, less worrying for unimportant things compared with the normal-weight and overweight non-athletes.

Aggression is a requirement to obtain sportive performance, as long as it is transposed into a competing attitude in arena, implying the involvement of all the resources in the competition and permanent control of the violent aggressive impulses. The female athletes present an aggression level significantly higher compared to that of the normal-weight and overweight non-athletes. The female athletes directly express their annoyance, being more likely to use rough words when they are angered, compared with the normal-weight and overweight non-athletes.

Our survey emphasized that somatic differences do not result in statistically significant differences from activity, anxiety or aggression standpoint at the female non-athlete students. This gives us the possibility to allege that sports activity represents a factor triggering significant modifications in the affective life of athletes. Our survey was limited by the psychic-physical condition (tiredness, affective-emotional factors) of the subjects at the time of their testing, fact which can determine variations in the answers. Another limit is represented by the athlete samples. Results could be different if samples consisted, by instance, only of male athletes or if we investigated a higher number of normal-weight and overweight individuals.

We can conclude that the survey participating students' involvement level in the sports activity is reflected, at personality level, by a higher aggression and a poorer anxiety, aspects which make the difference between the athletes and the non-athletes and which can influence the social conducts, special for different daily life contexts.

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