

SECTION – SPORT SCIENCES

ICID: 5611

(1.2)

DOI: 10.5604/01.3001.0009.5611

THE RELATIONSHIPS BETWEEN THE PERCEPTION OF ONESELF, THE WORLD AND OTHERS, AND PRE-START ANXIETY DUE TO THE LEVEL OF NEUROTICISM AND EXTRAVERSION

Authors' contribution:

- A. Study design/planning
- B. Data collection/entry
- C. Data analysis/statistics
- D. Data interpretation
- E. Preparation of manuscript
- F. Literature analysis/search
- G. Funds collection

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Key words: cognitive patterns, pre-start anxiety, neuroticism, extraversion, students, sport

Abstract

Aim. The aim of the study was to demonstrate the relationships between the perception of oneself, the world and others, and neuroticism, extraversion and pre-start anxiety in student athletes. The following research questions were put forward: 1) Does neuroticism affect the relationship between the way of perceiving oneself, the world and others, and pre-start anxiety in the studied student-athletes? 2) Does extroversion affect the relationship between the way of perceiving oneself, the world and others, and pre-start anxiety in the studied student-athletes?

Basic procedures. The study included 152 participants (64 women and 88 men) - students of the University School of Physical Education in Krakow, performing both team and individual sports.

The NEO-Five Factor Inventory (NEO-FFI) was used, the Intrapersonal and Interpersonal Attitudes and Attitudes Towards the World Questionnaire (KNIIŚ) and the Sport Anxiety Scale (SAS).

Results. It was found that concentration disruptions (an element of cognitive anxiety) decreased in people with high levels of neuroticism, along with the increase in self-esteem in the social-moral sphere, perceiving others as support and the increase in self-efficacy perception. In respondents with low levels of neuroticism and frequent perception of others as support, the level of concentration disturbances increased. Analysis also showed that in participants with high levels of neuroticism, along with the increase in general self-assessment, pre-start anxiety was reduced. It was also found that people with high levels of extraversion, along with perceiving others as support, there was a decrease in somatic anxiety. In introverts, the relationship was reversed. It was also observed that people with medium and high levels of extraversion, along with the increase in the perception of others as support, the level of pre-start concentration disturbances decreased. Analysis also showed that in subjects with high levels of extroversion, along with increasing pro-sociality, there was a decrease in the level of pre-start somatic anxiety. On the other hand, individuals with low or medium levels of extraversion, along with the increase in social-acceptance, there was a decline in worry.

Conclusions. Thus, both neuroticism and extraversion moderate relationships between the way of perceiving oneself, the world as well as others and cognitive anxiety.

Introduction

The positive perception of oneself, the world and others seems to be very important in sports activities. The way of interpreting the events around oneself and one's self (also linked with the personality of the individual) affect the emotions felt, including those during the pre-start phase. Among the pre-start emotions, special attention should be paid to anxiety, especially the somatic and cognitive.

Jan Strelau [1] defines cognitive anxiety as characterized by the expected fear and thoughts, which are saturated with anxiety, "social anxiety, uncertainty, difficulty in muscular expansion and the slow recovery of balance following the occurrence of stress or illness". This element is also accompanied by doubts, negative thoughts, fear of failure. This, in turn, causes a decrease in confidence and concentration [2]. Somatic anxiety, however, concerns physical disorders, which as a consequence, can be concentration disturbances [1].

Personality can, therefore, be defined as the views and beliefs of people that relate to reality and how they process information and explain these events [3]. Cognitive elements of personality are patterns or structures that allow selecting, coding and evaluation of stimuli that affect the body [4]. In other words, they correspond to the subjective interpretation of the situational context and the relationship man - situation [5]. Cognitive patterns may relate to oneself, others and the world around us.

A completely different understanding of personality - in the category of attributes - is proposed by Robert McCrae and Paul Costa [6]. According to their conception, personality is constant, biologically predetermined, weakly resistant to change. In their view, elements called components of the personality system can be distinguished, which include the so-called basic trends, such as: Neuroticism, Extroversion, Openness to experience, Agreeableness, Conscientiousness. Thus, Costa and McCrae's theory is also known as the Big Five. In the present work, we focus on Neuroticism and Extroversion.

Neuroticism is associated with such features as: depressiveness, impulsiveness, sensitivity, shyness, worry, nervousness, insecurity, lack of security, being emotional, manifestation of hypochondriacal tendencies, capriciousness, self-pity, emotional stress, susceptibility to being hurt.

While extroversion is associated with sociability, affection, assertiveness, being active, searching for sensations, talkativeness, optimism, warmth, susceptibility to having fun and searching for experiences [6].

Study aim

The aim of the study was to demonstrate the relationships between the image of oneself, others and the surrounding world and pre-start anxiety in male and female

student-athletes, with regard to the level of extroversion and neuroticism as moderating variables.

The following research questions were put forward:

1. What is the relationship between the dominating cognitive patterns and pre-start anxiety in the studied athletes, differing in neurocivity level?
2. What is the relationship between the dominating cognitive patterns and pre-start anxiety in the studied athletes, differing in extroversion level?

Study participants

151 people were studied, male and female student-athletes, both individual (75 people) and team (76 people) sport players. At the time of testing, they were students of the University School of Physical Education in Krakow and former players of the Academic Sports Association. Among the subjects, there were 54 players representing the AZS AWF Krakow, AZS Zakopane and AZS UJ Krakow clubs.

Research methods:

In the study we used:

- NEO-Five Factor Inventory (NEO-FFI) - Costa and McCrae; the Polish adaptation by Zawadzki, Strelau, Szczepaniak, Śliwińska [7]. The questionnaire was used to diagnose personality traits contained in the so-called Great Five Model. The questionnaire consists of 60 statements of self-descriptive nature, where the participant assesses the truthfulness of the statements in relation to themselves on a five-degree scale. In the present study, we analyzed the results of the Neuroticism and Extroversion scales.
- The Sport Anxiety Scale (SAS) - Smith, Smoll, Schutz; the Polish adaptation by Krawczyński [8], is used to measure anxiety as characteristics defining somatic anxiety, worry (cognitive anxiety component) and concentration disturbances (including cognitive anxiety). The scale consists of 21 statements characterizing symptoms associated with athletes before and during sport competitions. It is the Likert scale on which the examined person assesses his/her own reactions on a scale of 1 ("definitely not") to 4 ("definitely yes").
- The Intrapersonal and Interpersonal Attitudes, and Attitudes Towards the World Questionnaire (KNIIS) - Ewa Wysocka [3]. It concerns intrapersonal attitudes, thus self-image and belief system of one's own "I" (composed of: general and non-specific self-assessment; the sphere of cognitive-intellectual self-assessment; the sphere of physical self-assessment; the sphere of socio-moral self-assessment, characterological

sphere), interpersonal attitudes, thus the image of other people and relationships with them (which is: sense of support from others, a sense of threat from others, a sense of security; pro-sociality, aggressiveness) and attitude towards the world and one's own life (i.e. a sense that the world is meaningful; a sense of goodwill in the world, a sense of efficiency; the feeling of helplessness). Additionally, the questionnaire contains a scale of social-acceptance.

The questionnaire consists of 140 questions, and the task of the respondents is to indicate the possible answers that are closest to their convictions: I agree (4), I rather agree (3), I rather disagree (2), I disagree (1).

Study results

The results have been converted to a standard scale. The subjects who achieved results above the standard deviation were defined as persons with a high level (in terms of extraversion and neuroticism), and below the standard deviation - as persons with a low level of the analyzed characteristics.

The moderation analyzes carried out showed some statistically significant relationships. It was found that the relationship of the socio-moral self-assessment sphere, thus moral beliefs manifesting themselves in activities aimed at oneself and others ($p=0.032$), perception of others as support ($p=0.003$) and a sense of self-efficacy ($p=0.004$) with concentration disturbances is moderated by the level of neuroticism.

In people with high levels of neuroticism (and in the case of a sense of self-efficacy, even in people with a medium level of neuroticism), the level of pre-start concentration disturbances decreased along with increasing self-assessment in the social-moral sphere, with a tendency to perceive of others as support and an increase in the sense of self-efficacy (i.e., a subjective

belief in the ability to act in a particular situation and cope with the set task).

In people with a low level of neuroticism, along with frequent perception of others as support, the level of concentration disturbances increased.

The analyzes also showed a significant relationship between the level of general self-assessment, thus the general beliefs about self-worth, worrying and levels of neuroticism ($p=0.032$). It was found that people with high levels of neuroticism, along with increasing general self-assessment, there is a decrease in the level of pre-start anxiety, while this relationship did not reach statistical significance in participants with medium and high levels of neuroticism.

The discussed relationships are shown in Table 1 and in Figures 1-4 (where: blue line - low neuroticism level, green line - medium neuroticism level, brown line - high neuroticism level).

Subsequent analysis concerned the relationship between cognitive patterns, pre-start anxiety and the level of extraversion. Moderation analyses showed four statistically significant relationships. It was found that the relationship of perceiving others as support with somatic pre-start anxiety ($p=0.010$) and concentration disturbances ($p=0.002$) is moderated by the level of extraversion.

In people with high levels of extraversion, the more deeply they perceive people as support the less the level of somatic anxiety was marked. In people with medium and low extraversion levels, this relationship did not reach statistical significance or trend level. In the case of low extraversion, this correlation was additionally reversed.

It was also observed that people with medium and high levels of extraversion, along with increasing frequency of perceiving others as support, there was a decrease in the level of pre-start concentration disturbances.

Table 1. Analyses of relationship moderations of cognitive patterns with pre-start anxiety and neuroticism

Predictor	Moderator	Moderating variable	Beta	BS	t	p	Interaction
General self-assessment, non-specific	Neurocity	Pre-start anxiety: worry	-0.15	0.07	-2.17	0.032	$\beta_{NN} = 0.02$ $\beta_{SN} = -0.11$ $\beta_{WN} = -0.23^*$
Global self-assessment – social-moral sphere	Neurocity	Pre-start anxiety: concentration disturbances	-0.17	0.08	-2.17	0.032	$\beta_{NN} = -0.01$ $\beta_{SN} = -0.15$ $\beta_{WN} = -0.29^*$
Interpersonal functioning "Others towards me" - Support	Neurocity	Pre-start anxiety: concentration disturbances	-0.23	0.08	-3.00	0.003	$\beta_{NN} = 0.19$ ($p=0.091$) $\beta_{SN} = -0.03$ $\beta_{WN} = -0.26^*$
Life image – Sense of efficiency	Neurocity	Pre-start anxiety: concentration disturbances	-0.22	0.07	-2.92	0.004	$\beta_{NN} = 0.06$ $\beta_{SN} = -0.17^*$ $\beta_{WN} = -0.40^{**}$

LEGEND: LN – Low neurocity level; MN – Medium neurocity level; HN – High neurocity level, * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

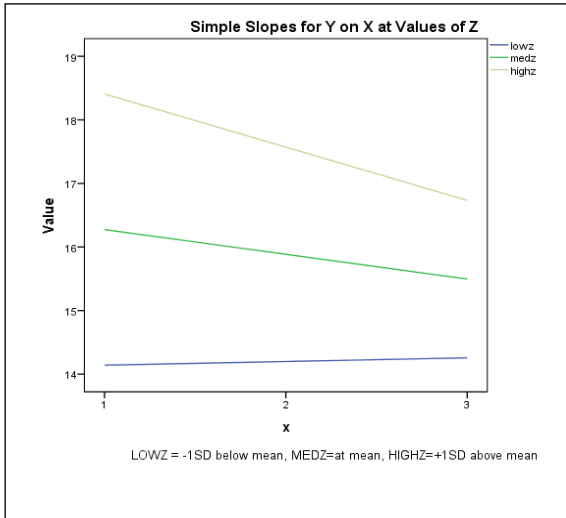


Fig. 1. General self-assessment and worry as well as level of neurocity

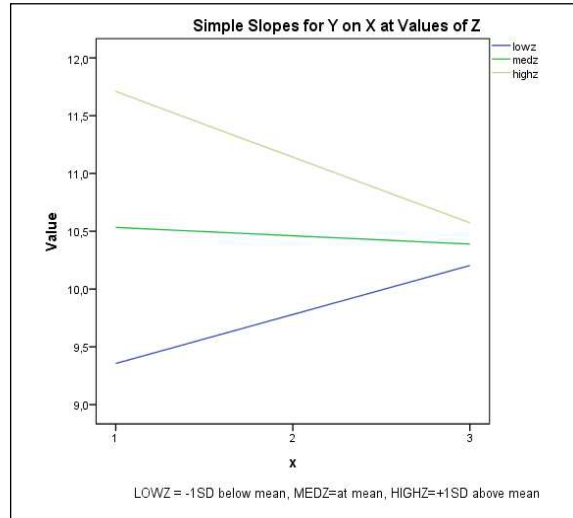


Fig. 3. Perceiving others as support and concentration disturbances as well as level of neurocity

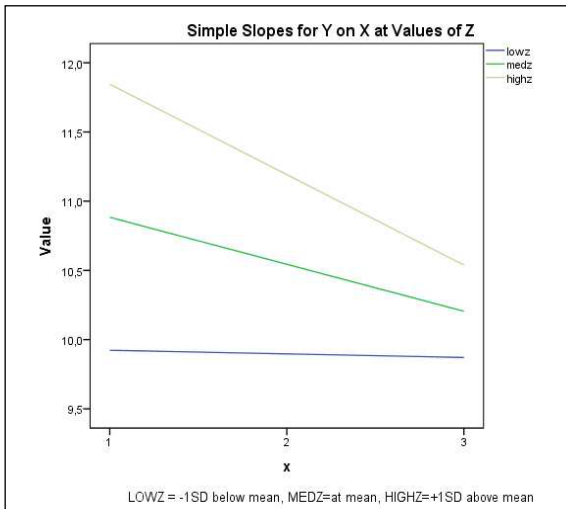


Fig. 2. Social-moral sphere of self-assessment and concentration disturbances as well as level of neurocity

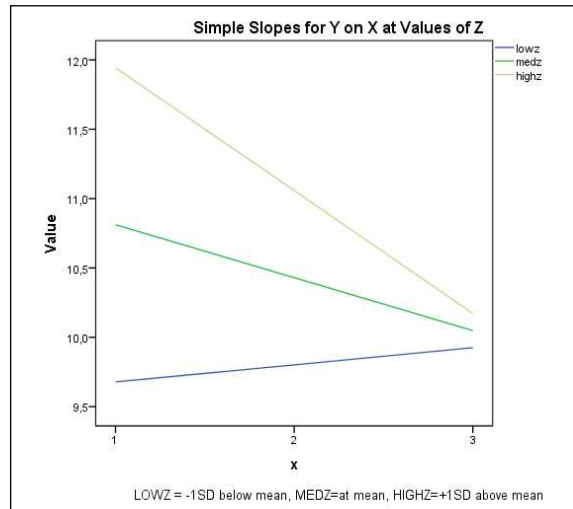


Fig. 4. Sense of efficiency and concentration disturbances as well as level of neurocity

Table 2. Analyses of relationship moderations of cognitive patterns with pre-start anxiety and extraversion

Predictor	Moderator	Moderating variable	Beta	BS	t	p	Interaction
Sense of support	Extraversion	Somatic	-0.21	0.08	-2.62	0.010	$\beta_{NE} = 0.15$ $\beta_{SE} = -0.03$ $\beta_{WE} = -0.21$ (p=0.076)
Sense of support	Extraversion	C. disruption	-0.25	0.08	-3.14	0.002	$\beta_{NE} = 0.06$ $\beta_{SE} = -0.16$ (p=0.070) $\beta_{WE} = -0.37^{**}$
Pro-society	Extraversion	Somatic	-0.19	0.09	-2.11	0.036	$\beta_{NE} = 0.02$ $\beta_{SE} = -0.11$ $\beta_{WE} = -0.24$ (p=0.060)
Social acceptance	Extraversion	Worry	-0.19	0.09	2.18	0.031	$\beta_{NE} = -0.50^{***}$ $\beta_{SE} = -0.31^{***}$ $\beta_{WE} = -0.13$

LEGEND: Low extroversion level; MN – Medium extroversion level; HN – High extroversion level, * p < 0.05; ** p < 0.01, *** p < 0.001

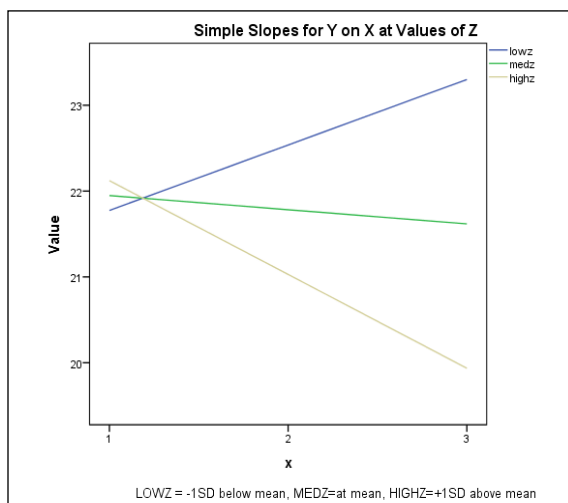


Fig. 5. Perceiving others as support and somatic anxiety as well as level of extraversion

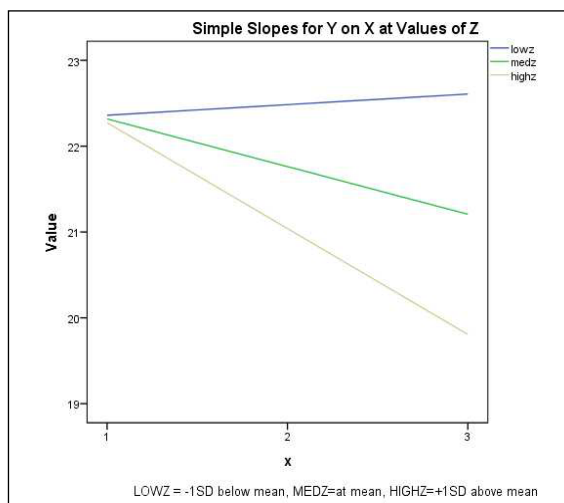


Fig. 7. Pro-social activity and somatic anxiety as well as level of extraversion

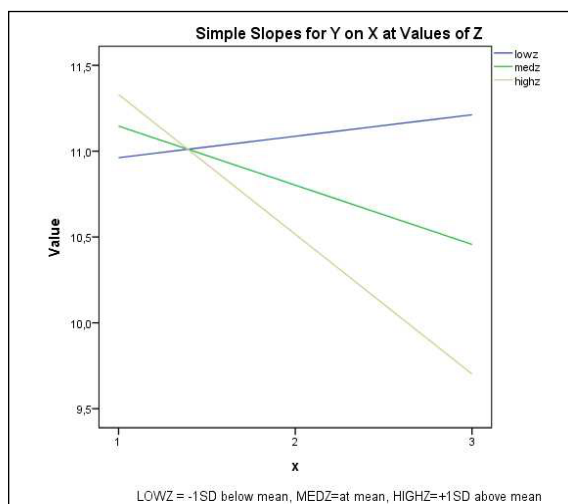


Fig. 6. Perceiving others as support and concentration disturbances as well as level of extraversion

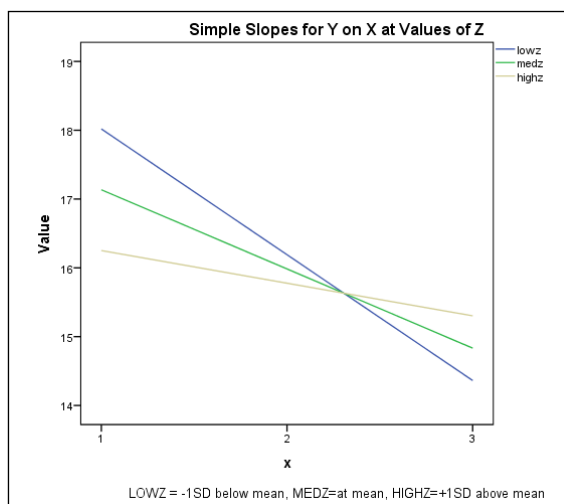


Fig. 8. Social-acceptance and worry as well as level of extraversion

The analyzes also showed a statistically significant relationship between pro-sociality (i.e. readiness of an individual to act on behalf of another person) with somatic anxiety and extraversion ($p=0.036$). In people with high levels of extraversion, along with increasing levels of pro-sociality, there was a decrease in the severity of pre-start somatic anxiety, while for other levels of extraversion, this relationship did not reach statistical significance or the borderline of the trend.

It was also stated that the relationship of social-acceptance (understood as the tendency to formulate socially desirable statements and reject those that are socially undesirable) with pre-start anxiety is moderated by the level of extraversion ($p=0.031$). In people with low and medium levels of extraversion, along with increasing social-acceptance, there was a decrease in worrying,

while for subjects with high levels of extraversion, this relationship did not reach statistical significance.

The discussed relationships are presented in Table 2 and Figures 5-8 (where: blue line - low extraversion level, green line – medium extraversion level, brown line - high extraversion level).

Discussion of results

The obtained results indicate that the studied athletes with high levels of neuroticism but high general self-assessment have lower cognitive pre-start anxiety. They reveal trends towards less worry regarding the outcome or the possibility of failure. Neuroticism correlates with anxiety, uncertainty [9, 10]. This can cause the person to feel more concerns about his/her effectiveness. How-

ever, as can be seen thanks to the research, high general self-assessment, which is positive beliefs about oneself also in people with high levels of neuroticism, causes the cognitive anxiety level to decrease directly before the competition. Thus, a positive self-image (i.e. also the cognitive patterns regarding the "I") has a beneficial effect on the emotional state of an athlete.

Likewise, perceiving oneself as a person with strong, proper moral convictions that are reflected in the activities done for oneself and other people in the studied athletes with high neuroticism is conducive to the re-education of cognitive anxiety in the form of concentration disturbances. Cognitive anxiety may therefore, cause problems with concentration. As it can be seen, positive "I" patterns also have a beneficial effect on the emotions of an athlete. Additionally, concentration disturbance levels in neurotic athletes reduce the sense of self-efficacy. Neurotics often feel insecure, they lack a sense of security. Therefore, in persons who have developed a sense of efficiency, the cognitive anxiety level will be lower which should have positive influence on their effectiveness. The latter concerned the subjects with high and medium levels of neuroticism. This emphasizes the role of a sense of efficacy for the effective functioning of an athlete.

Extroversion, however, is associated, among others, with sociability, assertiveness, being active, orientation towards others, kindness [9, 10, 6]. The obtained results confirmed the importance of human contact for extroverts. The perception of others as a source of support, as well as having a strong pro-social attitude (i.e. oriented towards others) caused a decrease in pre-start anxiety in extroverts. This concerned both cognitive (level of concentration disturbances) and somatic anxiety.

On the other hand, when introverts did not experience support from their surroundings, they felt stronger somatic anxiety in the immediate pre-start situation. Likewise, people with low extraversion (i.e. introverts) and with medium intensity of the analyzed characteristic, felt lower levels of cognitive anxiety (less concentra-

tion disturbances) when they perceived others positively (had a strong pro-social attitude).

Thus, the relationships between cognitive patterns and extraversion as well as neuroticism have shown that positive patterns regarding others are more important in the reduction of pre-start anxiety in extraverts, and for persons with a high level of neuroticism "I" patterns seem to be more significant.

General conclusions:

1. It has been shown that neuroticism moderates the relationships between general self-assessment, the socio-moral sphere of self-assessment, perceiving others as support as well as a sense of the effectiveness and cognitive anxiety (worrying and concentration disturbances).
2. It has been shown that extraversion moderates the relationships between the perception of others as support as well as pro-social attitude and cognitive and somatic anxiety (worrying and concentration disturbances).

Practical conclusions:

1. When working with individual players (especially introverts), it is good to provide social support.
2. It is worth working on creating positive beliefs about oneself and others (especially in neurotics).
3. An important element seems to be developing a sense of efficacy in athletes.

Acknowledgements

The fragment research report was carried out thanks to the funds obtained from the grant: "Development of Academic Sport 2013", financed by the Ministry of Science and Higher Education (project: "Cognitive patterns and their impact on emotional regulation and coping with stress in student athletes").

References:

- [1] Strelau J: *Teorie temperamentu skoncentrowane na czlowieku doroslym* (w:) Strelau J: redakcja. *Psychologia różnic indywidualnych*. Seria: Wykłady z psychologii, t. 10. Wydawnictwo Naukowe SCHOLAR Warszawa, 2002, 2006. S. 243.
- [2] Parnabas VA; Mahamood Y: *Anxiety and Imagery of Green Space among Athletes*. British Journal of Arts and Social Sciences. 2012, Vol. 4(1): 67-72.
- [3] Wysocka E: *Kwestionariusz Nastawień Intrapersonalnych, Interpersonalnych i Nastawień wobec Świata* (KNIIŚ), Podręcznik testu - wersja dla uczniów szkoły ponadgimnazjalnej. Kraków. Krakowskie Towarzystwo Edukacyjne; 2011.
- [4] Popiel A, Pragłowska E: *Psychoterapia poznawczo-behawioralna. Teoria i praktyka*. Warszawa. Wydawnictwo Paradygmat; 2008.
- [5] Alford AA; Beck AT: *Terapia poznawcza jako teoria integrująca psychoterapię*. Kraków. Wydawnictwo Uniwersytetu Jagiellońskiego; 2005.
- [6] McCrae RR, Costa PT: *Osobowość dorosłego człowieka*. Kraków Wydawnictwo WAM; 2005.

- [7] Zawadzki B, Strelau J, Szczepaniak P, Śliwińska M: *Inwentarz Osobowości NEO-FFI* P. T. Costa, R.R. McCrae, Podręcznik. Warszawa. Pracownia Testów Psychologicznych PTP; 1998.
- [8] Krawczyński M: *Osobowość, lęk i motywacja osiągnięć u zawodników I i II ligi piłki nożnej*, (w:) Mikołajczyk M., (red.) *Korelaty psychologiczne aktywności ruchowej i sukcesów w sporcie. Z badań nad osobowością sportowców i studentów uczelni wychowania fizycznego*. Polskie Towarzystwo Naukowe Kultury Fizycznej. Sekcja Psychologii Sportu. Warszawa, 2004. s. 57-63.
- [9] Strelau J: *Osobowość i różnice indywidualne*. (w:) Strelau J. red.. *Psychologia*. Podręcznik akademicki. Tom 2. Gdańskie Wydawnictwo Psychologiczne. Gdańsk, 2003. s. 535-558.
- [10] Pervin LA., John OP: *Osobowość. Teoria i badania*. Wydawnictwo Uniwersytetu Jagiellońskiego. Kraków, 2002.

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