

Self-defence as a utilitarian factor in combat sports, modifying the personality of athletes at a champion level

Authors' Contribution:

- ✍ **A** Study Design
- 📁 **B** Data Collection
- 📊 **C** Statistical Analysis
- 📄 **D** Manuscript Preparation
- 📁 **E** Funds Collection

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Abstract

Background & Study Aim:

Combat sports, in relation to other sports groups, are distinguished by a utilitarian factor, which manifests itself in the use of acquired skills in self-defence. The cognitive aim of this study was to answer the question: whether the personality of combat sports fighters at the championship level distinguishes them in some sense from other sportsmen.

Material & Methods:

Polish champions (N = 118) from three groups of sports disciplines were examined: combat sports (n = 49), individual sports (n = 56), and team sports/games (n = 13). The five-factor model of personality (Big Five) the NEO-FFI questionnaire was used. Statistical analyses were performed using IBM SPSS Statistics, version 25.

Results:

There was only one statistically significant difference for neuroticism, and a trend was observed in conscientiousness. Combat sports champions showed a statistically significantly lower level of neuroticism in relation to the champions of individual sports.

Conclusions:

Combat sports champions showed a statistically significantly lower level of neuroticism in relation to the champions of individual sports. It was presumed that it depends on the specificity of sports groups. A utilitarian factor influence – self-defence – became apparent, characteristic only for combat sports.

Keywords:

Big Five • mastery • personality • theory of combat sports

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Combat sports – the group of sports disciplines, in which the gist of the competition is the direct clash of two competing athletes. They are affiliated to the national and international sports organizations in order to carry out official competition, classification, etc. [13].

Combat sport – *noun* a sport in which one person fights another, e.g. wrestling, boxing and the martial arts [37].

Self-defence – *noun* fighting techniques used for defending oneself against physical attack, especially unarmed combat techniques such as those used in many of the martial arts [37].

Physical activity – *noun* exercise and general movement that a person carries out as part of their day [37].

Team sport – *noun* any sport that is played between two or more teams, e.g. Football, tennis or hockey [37].

Game – *noun* 1. a sporting or other activity in which players compete against each other by following a fixed set of rules 2. an occasion when a competitive game is played 3. in sports such as tennis, a subsection of play that goes towards making up a set or match 4. the total number of points needed to win a contest [37].

Częstochowa declaration 2015: HMA against MMA – "continuous improvement of health through martial arts as one of the most attractive form of physical activity for a human, accessible during entire life should constantly exist in public space, especially in electronic media, to balance permanent degradation of mental and social health by enhancing the promotion of mixed martial arts – contemporary, bloody gladiatorship, significant tool of education to aggression in a macro scale".

Gdansk 2nd HMA World Congress Resolution – Article 1 The white flag with five interlocking "Olympic rings" is the most recognizable symbol in the global public space. Neither did the resurrected idea of Olympia, "Citius, Altius, Fortius" save humanity from the horrors of two world wars, nor did

INTRODUCTION

Research on personality in sport is extremely popular because it is useful in diagnosing the psychological image of individual athletes. Thanks to this, a psychologist can determine the problems that a given player (athletes) has to deal with [1]. Moreover, the lack of knowledge of the trainer about the specific features and personality structure of representatives of various sports disciplines may adversely affect the sports development of athletes and manifest itself in artificial and ineffective activities.

Previous studies on personality in sport, carried out with the use of five-factor personality model called the Big Five [2] show that physically active people differ in the level of conscientiousness from those who do not train [3, 4]. Through physical activity, people are able to direct their life goals and be ambitious in life. It has also been proven that athletes who train competitively or professionally differ from physically active and untrained people, showing a higher level of extraversion and conscientiousness and a lower index of neuroticism.

On the other hand, openness to experience and agreeableness are at a similar level among people from the area of physical culture [5-8]. Athletes are distinguished by the quality and quantity of social interactions as well as the level of activity, energy and the ability to experience positive emotions. Thus, athletes like to surround themselves with people with a positive attitude. In addition, they are well organized, persistent and motivated in activities aimed at achieving the intended goal. Athletes are also less prone to experiencing negative emotions and less susceptible to psychological stress. These differences are visible in the level of anxiety, aggressive hostility, tendency to depression, impulsiveness, oversensitivity or shyness due to involvement in the field of sport. Features such as: trust, straightforwardness, altruism, submissiveness, modesty, tendency to be emotional, imagination, aesthetics, affection, ability to act, idealism, valence, do not distinguish athletes from physically active people.

But what is important, personality traits correspond to the specificity of the trained sports discipline, its goals and challenges. The personality profiles of athletes are at similar levels – low neuroticism, high extraversion and conscientiousness, average openness to experience

and conscientiousness; but at the same time they are not the same [9]. Among athletes, it is extremely difficult to distinguish and determine the most beneficial type of personality, as it is largely influenced by the trained sports discipline. This indicates the existence of a general personality profile of athletes, in which the strength of acceleration of personality traits is determined by groups of sports disciplines [10-12].

In sport theory, there is a division into sports groups – combat sports, individual sports and team sports etc. Moreover, the theory of combat sports assumes that combat sports, in relation to other sports groups, are distinguished by a utilitarian factor, which manifests itself in the use of skills in self-defence [13]. This research is part of a larger project mainly focused on the personality of combat sports champions [14].

The cognitive aim of this study was to answer the question: whether the personality of combat sports fighters at the championship level distinguishes them in some sense from other sportsmen.

MATERIAL AND METHODS

Researched persons

The research was carried out among Polish high-class athletes in the period between October 1, 2015 and September 30, 2019. The fundamental criteria for selecting non-random, purposeful set of respondents were as follows: free will to participate in the study, the subjects had to be of senior age (between 20 and 29 years of age) and had to have a master class. The other selection criteria were: many years of sports and professional experience, a current competition license, an impeccable opinion of the coach, documented achievements in sport competition on an international level.

A total of 118 champions from three groups of sports disciplines were tested: combat sports, individual sports, and team sports. The combat sports sample consisted of 49 champions (6 kyokushin karate, 6 shotokan karate, 5 ju jitsu, 5 karate shidokan, 5 style taekwondo, 4 Brazilian jiu jitsu, 4 kickboxing, 4 mixed martial arts practitioners (the authors are signatories HMA against MMA Declaration 2015 and HMA against MMA Resolution 2018: see glossary), 4 Oyama karate, 3 judo, 2 from freestyle wrestling, 1 Olympic karate.

The reference sample of individual sports was composed of 56 champions (8 long distance runners, 5 archery, 4 biathlon, 4 bodybuilding, 4 fitness, 3 alpine skiing, 3 orienteering, 3 snowboarding, 3 sport climbing, 3 swimming, 3 tobogganing, 2 ballroom dance, 2 break dance, 2 canoeing, 2 cycling, 2 short distance runners, 1 horse riding, 1 mountaineering, 1 sport shooting).

The reference sample of team sports games was made of 13 champions (7 volleyball, 2 beach volleyball, 2 floorball, 2 futsal). The subjects are medallists of the World Championship, European Championship, World Cup, European Cup, World Games 2017 or other prestigious international ranking tournaments.

Study design and tools

A five-factor personality model, known as the Big Five, was used to examine the personalities of athletes. For this purpose, the NEO-FFI (NEO – Five Factor Inventory) questionnaire was used. The NEO-FFI questionnaire items are made up of five measuring scales. They are marked with abbreviations formed from the first letters of the English names of factors: neuroticism (N), extraversion (E), openness to experience (O), agreeableness (A), conscientiousness (C), forming acronyms: NEOAC, OCEAN or CANOE. For the purposes of this study, the acronym NEOAC was adopted. The questionnaire consists of 60 self-report statements, the truthfulness of which in relation to themselves was assessed by the respondents on a five-point scale: 1 – “definitely not”, 2 – “rather not”, 3 – “I have no opinion”, 4 – “rather yes”, 5 – “definitely yes”. The NEO-FFI questionnaire has ten norms for 5 age groups (15-19, 20-29, 30-39, 40-49, 50-80), developed separately for women and men on the basis of large population samples. In addition, it is internally compatible.

Validity was demonstrated on the basis of research on the relationship between the results of the questionnaire and the assessments of the respondents made by observers, the heritability of the measured traits and their correlation with other dimensions of personality and temperament. Factor validity was also verified. The results allow for a full description of the personality of the respondents in terms of the Big Five and for forecasting their adaptation possibilities to the professional environment [2, 15].

Each tested person agreed to participate in the research after getting acquainted with the information on the objectives and principles of carrying out of the research, its expected effects and possible benefits. The respondents also familiarized themselves with the risk associated with undergoing the study, indicating the mode and the possibility of withdrawing from participation in the study at each stage. Moreover, the respondents were informed that they could ask questions and obtain answers to them. All respondents consented to the processing of data related to their participation in the research. The research was carried out in rooms isolated from noise. The respondents had one hour to respond to the statements of the NEO-FFI personality questionnaire. The research was carried out in groups of up to 30 people. After completing the research work, the participants' data was coded.

The project received a positive opinion of the Senate Committee on Ethics of Scientific Research at the University School of Physical Education in Wrocław, Poland, number 20/2019.

Statistical analysis

Statistical analyses were performed using IBM SPSS Statistics, version 25. Differences in the intensity of personality traits between the champions of individual groups, i.e. combat sports, individual sports and team sports, were examined.

The estimation of the results is based on the following indicators: mean (M); standard deviation (SD); distribution, F-Snedecor statistics, result of the analysis of variance (F); significance level, probability (p); degrees of freedom (df); η^2 is calculated from the sum of squares (SS) between groups divided by the total SS ($SS_{\text{between}}/SS_{\text{total}} = \eta^2$).

RESULTS

The results of the conducted one-way analyses of variance showed one statistically significant difference for neuroticism, while a trend was observed in conscientiousness. The differences between the champions of individual sports groups explain about 8% of the variance in neuroticism. Post-hoc analysis showed that champions of individual sports had a significantly higher level of neuroticism than combat sports champions (Tables 1 and 2). The strength of the differences is illustrated by Figures 1 and 2, and the whole by Figure 3.

the declared mission of the International Olympic Committee (IOC): “1. (...) the promotion of ethics and (...) ensuring that, in sport, the spirit of fair play prevails and violence is banned” (Olympic Charter, p. 18) stop the pathology of permanently educating contemporary man in aggression.

Article 2 Likewise, symbols (a sword pointed downwards surrounded by five rings) and motto (“Friendship through Sport”) of Conseil International du Sport Militaire (CISM) did not stop soldiers from killing each other and murdering people after 1948 (the year of establishing CISM, the second largest multi-sport discipline organization after the IOC, and also the year of the Universal Declaration of Human Rights).

Article 3 Although there are five identical combat sports in the Olympic Games and the Military World Games, their potential is still not used to meet the second of the Fundamental Principles of Olympism: “(...) to place sport at the service of the harmonious development of humankind, with a view to promoting a peaceful society concerned with the preservation of human dignity” (Olympic Charter, p. 13).

Article 4 Boxing and wrestling cultivate the traditions of ancient Olympism. Judo and taekwondo have given martial arts humanistic and health attractiveness. Fencing combines this tradition with modernity in the spirit of chivalry. Aiming dynamic offensive and defensive actions directly at the opponent's body (irrespective of the protectors used) in such a way as not to hurt is a measure of respecting those knightly rules. This rule harmonizes with the principle of respect for the opponent's as well as one's own corporeality and dignity over the vain victory at all costs.

Article 5 For the civilized individual and the society for whom human health and dignity are the common good, participation, in any role, in brutal shows of people massacring each other cannot be a standard of the quality of life. Neo gladiatorship camouflaged under the banner of martial arts or combat sports is a slight to the Fundamental Principles of Olympism, but also to the Universal Declaration of Human Rights. Therefore, this Resolution should inspire as many actors of Knowledge Society as possible jointly to

oppose any deformations of the mission of Olympism and sport. The expansion of the pathology of unauthorized naming neo gladiators as combat sports athletes will soon turn the Fundamental Principles of Olympism into their own caricature – objective indicators are a testament to the devastation of all dimensions of health by the practice of legal bloody pageants [38].

Table 1. Analysis of differences in individual personality traits between champions from different sports groups – one-way analysis of variance.

Sports:	Personality traits									
	N		E		O		A		C	
	M	SD	M	SD	M	SD	M	SD	M	SD
Combat	4.73	2.31	34.88	4.82	29.06	5.74	30.00	7.70	40.22	5.15
Individual	6.29	2.40	33.21	6.73	27.54	6.04	30.73	6.04	37.57	5.90
Team	5.69	3.35	35.23	4.40	28.54	4.74	28.69	6.33	36.54	6.70
<i>F</i>	5.59		1.35		0.92		0.51		3.76	
<i>df</i>	2; 31.38		2; 115		2; 115		2; 115		2; 115	
<i>p</i>	0.008		0.264		0.401		0.601		0.026	
η^2	0.08		0.02		0.02		0.01		0.06	

Abbreviations: **N** neuroticism, **E** extraversion, **O** openness to experience, **A** agreeableness, **C** conscientiousness.

Table 2. Significance levels for post-hoc comparisons with the Games-Howell method in neuroticism for champions from various sports groups.

Sports	1	2
1. Combat	---	
2. Individual	0.003	---
3. Team	0.605	0.717

DISCUSSION

In this research differences in the intensity of personality traits between champions of combat sports in relation to champions of individual sports and team sports were verified. There was one statistically significant difference in the dimension of neuroticism – the champions of individual sports revealed a significantly higher level of neuroticism than combat sports champions.

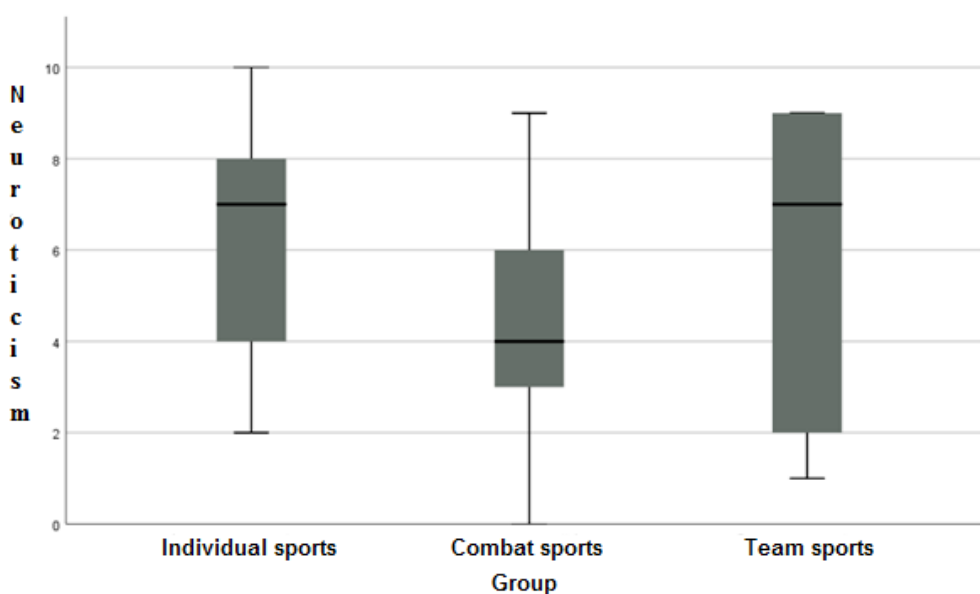


Figure 1. Box plots for neuroticism for champions from different sports groups.

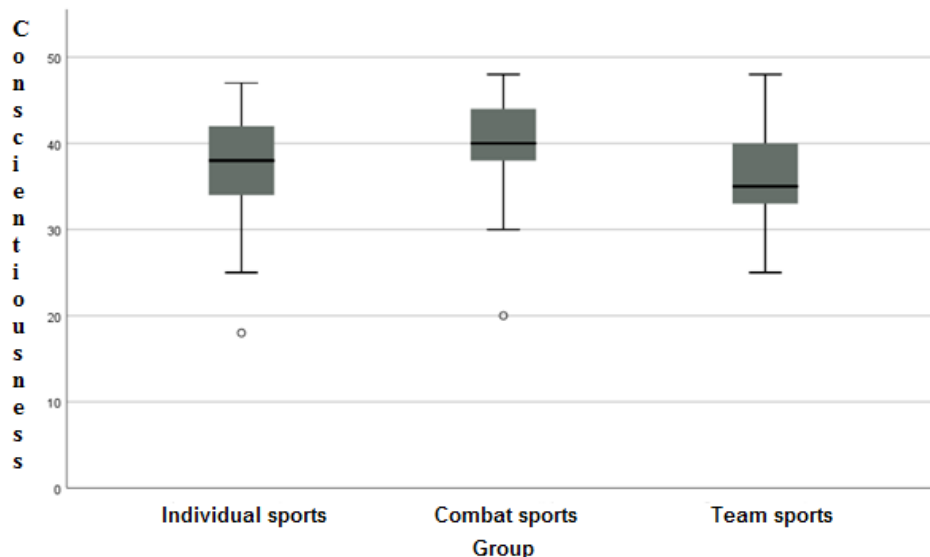


Figure 2. Box plots for conscientiousness for champions from different sports groups.

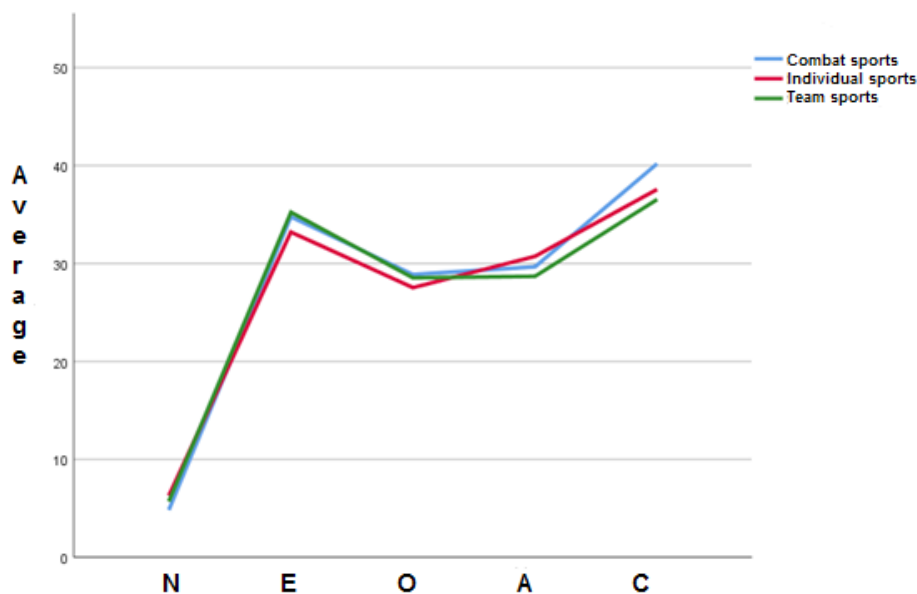


Figure 3. Line chart of personality profiles for champions of different sports groups (N neuroticism, E extraversion, O openness to experience, A agreeableness, C conscientiousness).

The remaining personality traits were similar to the general profile of the athletes. This confirms the existence of a general personality profile of champions, in which the strength of acceleration of personality traits is determined by groups of sports disciplines. But against the background of the compared samples of champions from three sports groups, the champions of combat sports stood out. It was presumed that the difference in

neuroticism between champions of combat sports and individual sports reveals the dissonance of direct contact and influence on the opponent. Moreover, individuals with high stimulation processing capabilities choose disciplines that provide them with a greater number of strong stimuli [15, 16]. These include combat sports, where, unlike individual sports, there is a greater risk of injuries and contusions. All this increases the stimulus

value of this form of activity. In team sports games, direct contact with the rival occurs less frequently, the responsibility rests on the entire team, during training and competition there is a greater variability of the nature and intensity of the effort.

Combat sports, unlike the group of individual and team sports, are also distinguished by the utilitarian factor, which draws attention to the field of self-defence as an inherent feature of combat sports. According to Kalina [13], combat sports constitute a certain continuum, the boundaries of which are determined by disciplines that differ extremely in terms of the degree of severity of the impact on the competitor's body with their own body or weapons. It translates into the possibility of implementing self-defence in a similar way, and gives the basis for the likely actions of athletes during a defensive fight – an out-of-sport confrontation – in a way they are used to act during tournament and training fights as part of their combat sport [13]. Therefore, it was accepted that the utilitarian factor of combat sports translates into the results of research in this area – high emotional stability (low neuroticism) significantly distinguishes martial arts champions [9, 14, 17, 18], which confirms the validity of the combat sports theory [13].

It should be noted that outstanding athletes, when commenting on the impact that sport has had on their personality, state that it has taught them to live in society [19]. It favoured the development of character, consistency in behaviour and persistence in pursuing one's goals. The influence of sport on personality is obvious. Sports competition is about defeating oneself, testing oneself, revealing one's abilities, predispositions,

skills – it is an opportunity to overcome one's weaknesses. Therefore, sports rivalry teaches the athlete how to follow the rules adopted in a given field of sport, but also the common life rules: equal opportunities and respect for the opponent. Without it, we would not have had many achievements in science, culture or sport.

Development usually takes place through the clash of incompatible and competing views and their justifications [20, 21]. Undoubtedly, competition also kills boredom, brings liveliness, excitement and joy. Competition creates an environment in which people can fulfil their need for achievement. During the competition, the attractiveness of success also increases [22-24]. One should also remember about social and cultural factors, the strength of the comprehensive influence of the trainer and his personality on the players and other entities of the players' closest social environment [25-29]. All these factors are common to each sports group, but only in the case of combat sports they lead to the mastery of decent self-defence [30, 31]. This utilitarian element is characteristic only for combat sports, and, as it turns out, it positively influences the control over emotions (low neuroticism) [14, 32-36].

CONCLUSIONS

Combat sports champions showed a statistically significantly lower level of neuroticism in relation to the champions of individual sports. It was presumed that it depends on the specificity of sports groups. A utilitarian factor influence – self-defence – became apparent, characteristic only for combat sports.

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