

## PSYCHOLOGY

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# Personality and gender of people training in Kyokushin karate and kickboxing

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### Abstract

Background and aim. Kickboxing is a full-contact combat sport that has evolved from the knockdown formula characteristics of Kyokushin karate. The aim of the article was to attempt to determine the personality of people training in Kyokushin karate and kickboxing.

Material and method. The study involved people practicing Kyokushin karate (n1 = 30) and kickboxing (n2 = 30) aged 18 to 29. There were 15 women and 15 men in each sample. The NEO-FFI Personality Questionnaire [Costa Jr., McCrae 2007] was the method used. Results. The personalities of the karate Kyokushin and kickboxing athletes were at a similar level in all personality dimensions: low neuroticism, high extraversion and conscientiousness, average openness to experience and agreeableness. But women (in general) were more neurotic, extroverted, and conscientious and less open to experiences in relation to men; agreeableness was at a similar level. Women training in Kyokushin karate were more neurotic and conscientious, and less open to experience than men from the same combat sports. Women training in kickboxing were more extroverted and conciliatory to men in the same combat sports.

Conclusions. People competing in the knockdown formula are no different from those competing in the full contact formula and from athletes from other disciplines in all personality traits. Gender is an important personality determinant among combat sports practitioners.

### Introduction

The world of martial arts is extremely colorful and complex. There are many types of martial arts & combat sports that have their origins in BC or are much younger and result from the synthesis of older martial arts [Piepiora *et al.* 2016b; *cf.* Cynarski 2017]. Kickboxing is such an example. This combat sport was based on the synthesis of Far Eastern martial arts: *taekwondo*, *karate*, *muay thai* and classic boxing. Its origins date back to the 1960s, and the cradle was the United States of America. However, some similar forms were practised parallelly in East and South-East Asia [*cf.* Ritschel 2008; Cynarski, Ziemiński 2010]. Mike Anderson is considered the creator of kick-

boxing. He wanted to develop the knockdown fighting formula characteristics of *Kyokushin karate* [Witkowski *et al.* 2016a]. He combined football techniques from karate, taekwondo, and classic boxing. In this way, a new discipline was created – the martial art called full-contact karate at the beginning because the hits can be inflicted without limitation on all body zones. Anderson organized the first competition according to his established rules in 1968. Rules in the full contact formula were borrowed from boxing. And thus a new combat sport was registered in the United States of America – kickboxing [Ritschel 2008].

The above-mentioned disciplines, karate Kyokushin [Piepiora, Piepiora 2016] and kickboxing [Witkowski *et*

al. 2016b] currently have many supporters. Karate Kyokushin is characterized by competition in the knockdown formula. The fight takes place in close contact and allows blows to be inflicted with full force. The fight takes place without any protection (except for the suspension and the protector; for women, the chest protector). All blows are allowed except for blows to the head and kicks in the knees or perineum. The athletes are dressed in *karate-gi*. The fight is fought on the mat. A knockout decides about the victory (3 seconds inability to fight) or in the absence of a knockout – the verdict is made by indicating a better player. Whereas in kickboxing the adopted fighting formula is full-contact. A continuous fight, most often three-rounds, during which boxing blows and foot techniques to the allowed places of hits are performed with full force, and the minimum number of kicks made is specified in the regulations, kicks are aimed only above the waist. The competitors fight in the ring, i.e. a square-shaped platform that is rigged. As for the outfit, these are long pants, boxing gloves, a mouthguard, suspensions. For women, a chest protector is also mandatory. A knockout decides about the victory (10 seconds inability to fight) or in the absence of a knockout the verdict is based on the higher number of points obtained. The full-contact formula is derived from the knockdown formula [Piepiora *et al.* 2016a]. Both systems require full motor [Piepiora *et al.* 2017b], technical [Piepiora, Witkowski 2015], tactical [Piepiora, Piepiora 2015] and mental [Piepiora *et al.* 2017c] preparation.

The most popular personality descriptions of athletes are captured in the NEO-FFI five-factor personality model, known as the “Big Five”. The criteria were by its authors Costa Jr. and McCrae formulated in the course of the discussion of the basic dimensions of personality [Costa Jr., McCrae 1992a, 1992c; Eysenck 1991, 1992]. In the intention of Costa Jr. and McCrae [2007], distinguishing these criteria allows the approach to personality they adopt to assign the status of a scientific paradigm. They define the personality operationally, meaning the term: “... the structure (...) of the most basic factors, influencing the features identified in both natural languages and psychological questionnaires (...) These factors are defined by groups of correlated features (...) are called facets, and the bundle of components is the personality domain, the latter term, therefore, refers to general characteristics, i.e. basic dimensions of personality” [Costa Jr., McCrae 1992b: 14-15].

When characterizing the “Big Five” model, Costa Jr. and McCrae do not go beyond the definition of features understood as behavioral properties that show interindividual variability and intraindividual temporal and situational constancy. They adopt a number of methodological assumptions defining the status of personality traits, i.e. the possibility of their identification through statistical operations – mainly factor analysis. Thus, such an approach can be classified as an approach that is clearly

methodological (not theoretical) and purely descriptive (not explanatory or descriptive-explanatory, which is typical for researchers of temperament) [Eysenck 1991, 1992]. In line with the logic of their approach, Costa and McCrae indicated that the diagnosis of basic personality traits or personality dimensions understood as factors, is based on the tools they have constructed. The key concept that distinguishes the specificity of Costa and McCrae’s approach from other approaches to personality or temperament is therefore the concept of “basic” dimensions of personality. By using it, the authors of NEO-FFI understand that the features of the “Big Five” are the most general features of behaviour (they are the highest in the hierarchy), and at the same time, they are real, invariant, universal, and biologically conditioned [Costa Jr., McCrae, 2007].

Citing reports that sports activity shapes the personality of athletes in a five-factor approach of “Big Five”: low neuroticism, high extraversion and conscientiousness, average openness to experience and agreeableness [Chirivella, Martinez 1994; Backmand *et al.* 2003; Kajtna *et al.* 2004; Hill *et al.* 2010; Allen *et al.* 2011, 2013; Allen, Laborde 2014; Piepiora, Witkowski 2018; Piepiora *et al.* 2018; Piepiora 2019], attempts were made to determine the personality of Kyokushin karate and kickboxing players. Namely: the aim of the study was to check the relationship between personality and gender among people training karate Kyokushin (knockdown formula) and kickboxing (full-contact formula).

## Material and method

### *Test persons*

The study covered two groups of fighters from Rzeszow and Wroclaw. The first group included karate Kyokushin fighters ( $n_1 = 30$ ), 15 women and 15 men; and the second group included kickboxing players ( $n_2 = 30$ ), also in the same number: 15 men and 15 women. They were people practising these sports competitively. Players’ age range was from 18 to 29 years old. Professional experience of 3 and more years (mean: 5,1 years). All respondents had 1-2 dan master’s degrees and second or higher sports class. Moreover, persons participating in the test have been successful at the national and international levels.

### *Method*

The cognitive experiment was carried out using the NEO-FFI questionnaire to diagnose personality traits included in the popular five-factor model, known as the “Big Five” model. The items in the questionnaire comprised of 60 self-descriptive statements, the truthfulness of which in relation to themselves was rated 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". These items were made up of 5 measuring scales marked with abbreviations created from the first letters of the English factor names:

- Neuroticism (anxiety, angry hostility, depression, impulsiveness, vulnerability, self-consciousness);
- Extroversion (gregariousness, warmth, assertiveness, activity, excitement-seeking, positive emotions);
- Openness to experience (fantasy, aesthetics, feelings, actions, ideas, values);
- Agreeableness (trust, straightforwardness, altruism, compliance, modesty, tendermindedness);
- Conscientiousness (competence, order, dutifulness, achievement striving, self-discipline, deliberation) [Costa Jr., McCrae 2007].

The results allow a full description of the personality of the respondents and forecast their adaptability to the professional environment. When characterizing the Big Five, it is necessary to pay attention to several important aspects of traits in terms of Costa Jr., McCrae [2007]:

- these features characterize the so-called normal personality, although their extreme severity may favor the development of behavioral disorders and psychosomatic diseases. In this sense, therefore, a simple clinical interpretation should not be adopted in relation to the Big Five model;
- these features are not classic types, although Costa and McCrae characterize them mainly by describing extreme poles. In fact, these traits are continuous and, like other psychological properties, normal distribution in the population. The NEO-FFI therefore allows each personality to be described;
- these features should not be simply evaluated. A given pole may be associated not only with positive but also negative trends in behavior, both for the social environment and for a given individual. Therefore, one should not make a unilateral assessment of the personality, because each of these features has its advantages and disadvantages;
- NEO-FFI factors meet the criteria required for traits that aspire to be the basic dimensions of personality [Costa Jr., McCrae 1992a, 1992b, 1992c; Eysenck 1991, 1992].

In order to answer the research problem, statistical analyses were carried out using the IBM SPSS Statistics 23 package. With its help, basic descriptive statistics

were analyzed together with the Kolmogorov-Smirnov test and two-factor analysis of variance in the intergroup scheme. The classic threshold  $\alpha = 0.05$  was considered the level of significance. In addition, test statistic probability results of  $0.05 < p < 0.1$  were interpreted as significant at the level of statistical tendency.

#### Procedure

The tests were carried out on paper. Each athlete received their own sheet to fill out. All subjects voluntarily expressed their willingness to participate in the study. They were informed about the purpose of the study. Instructions were also given on how to complete the correctly received sheet. The personal data of the subjects was coded. The project received a positive opinion from the Senate Committee on Ethics of Scientific Research at the University of Physical Education in Wroclaw, issue 20/2019.

## Results

#### Basic descriptive statistics of measured quantitative variables

In the first step, basic descriptive statistics of the quantitative variables studied were counted along with the Kolmogorov-Smirnov test checking the normality of the distribution of these variables. As can be seen in Table 1, in the case of the level of extraversion and conscientiousness, distributions similar to the Gaussian distribution were noted. In the case of the remaining quantitative variables examined, statistically significant results were noted, indicating distributions different from the Gaussian distribution. In this case, it is recommended to verify the skewness level of these variables. In a situation where this value is in the range of -2 to +2, it can be assumed that the distributions tested are not significantly asymmetrical in relation to the average. Such a situation was noted for the variables studied. For this reason, it can be assumed that the tested distributions are not significantly different from the symmetrical distribution and it is advisable to use parametric tests, of course if their other assumptions are met.

#### Neuroticism

**Table 1.** Basic descriptive statistics of quantitative variables tested

|                        | <i>M</i> | <i>Me</i> | <i>SD</i> | <i>Sk.</i> | <i>Kurt.</i> | <i>Min.</i> | <i>Maks.</i> | <i>K-S</i> | <i>p</i> |
|------------------------|----------|-----------|-----------|------------|--------------|-------------|--------------|------------|----------|
| Neuroticism            | 13,68    | 14        | 2,96      | -0,69      | 1,31         | 4           | 19           | 0,13       | 0,020    |
| Extroversion           | 32,87    | 33        | 5,69      | -0,03      | 0,04         | 19          | 48           | 0,08       | 0,200    |
| Openness to experience | 26,82    | 27        | 5,75      | 0,34       | -0,68        | 15          | 40           | 0,15       | 0,003    |
| Agreeableness          | 29,25    | 30        | 5,74      | -0,05      | 0,43         | 14          | 46           | 0,12       | 0,035    |
| Conscientiousness      | 36,82    | 36        | 5,13      | 0,44       | -0,49        | 28          | 48           | 0,11       | 0,099    |

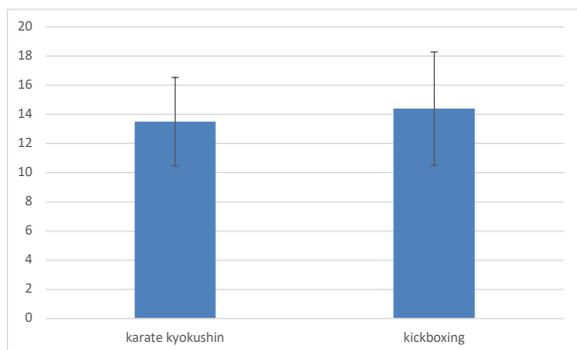
*M* - average; *Me* - median; *SD* - standard deviation; *Sk.* - skewness; *Kurt.* - kurtosis; *Min* and *Max* - the lowest and highest distribution value; *K-S* - Kolmogorov-Smirnov test result; *p* - significance

In the next step, it was decided to check whether the level of neuroticism depends on the type of sport played and the sex of the people studied. A two-factor analysis of variance was performed in the intergroup diagram. Table 2 presents descriptive statistics of the level of the studied variable.

**Table 2.** The level of neuroticism in the studied groups

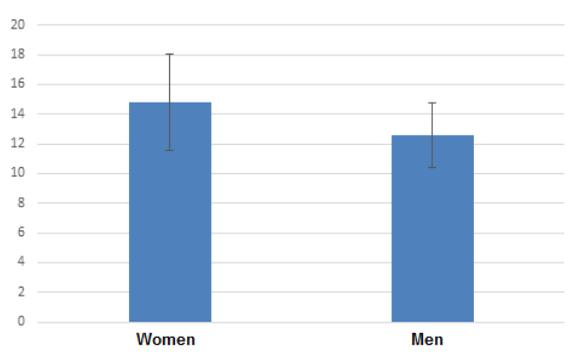
| Group            | Gender     | M     | SD   |
|------------------|------------|-------|------|
| Kyokushin karate | women      | 15,20 | 2,54 |
|                  | men        | 11,80 | 2,54 |
|                  | altogether | 13,50 | 3,04 |
| kickboxing       | women      | 14,40 | 3,89 |
|                  | men        | 13,33 | 1,40 |
|                  | altogether | 13,87 | 2,92 |
| altogether       | women      | 14,80 | 3,25 |
|                  | men        | 12,57 | 2,16 |

There was no statistically significant effect of the main type of sport practised,  $F(1, 56) = 0.27$ ;  $p = 0.606$ ;  $\eta^2 = 0.01$ . As can be seen in Figure 1, the level of neuroticism of players practising both types of sports was similar.



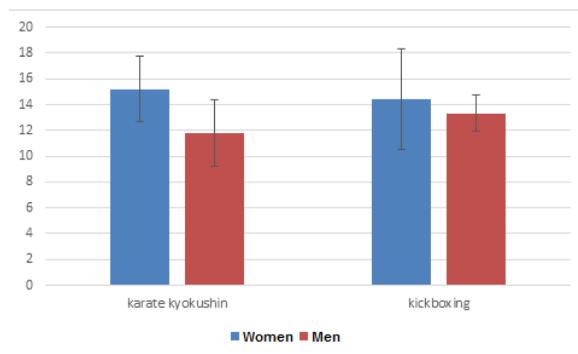
**Figure 1.** The level of neuroticism depending on the type of sport played.

However, a statistically significant main effect of sex was noted,  $F(1, 56) = 9.98$ ;  $p = 0.003$ ;  $\eta^2 = 0.15$ . As can be seen in Figure 2, the level of neuroticism was higher in the group of women. The strength of the effect noted was significant.



**Figure 2.** The level of neuroticism depending on the players' gender.

There was no statistically significant effect of gender interaction and type of sport practised,  $F(1, 56) = 2.72$ ;  $p = 0.104$ ;  $\eta^2 = 0.05$ . Despite this, simple effects were analyzed. A simple gender effect was noted only in the group of Kyokushin karate players ( $p = 0.001$ ). Women recorded higher results in the group of these players. In the group of kickboxing players there was no difference even at the level of statistical tendency. The simple effect of the type of sport was not noted in any of the compared groups. The results are shown in Figure 3.



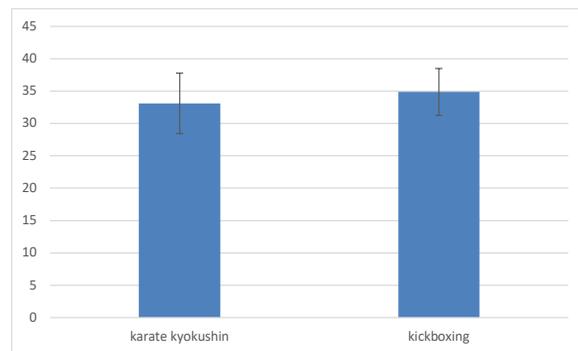
**Figure 3.** The level of neuroticism depending on the type of sport played and the gender of the players.

*Extroversion*

In the next step, it was decided to check whether the level of extroversion depends on the type of sport played and the sex of the people studied. Another two-factor analysis of variance was performed in the intergroup diagram. Table 3 presents descriptive statistics of the level of the studied variable.

**Table 3.** The level of extraversion in the studied groups

| Group            | Gender     | M     | SD   |
|------------------|------------|-------|------|
| Kyokushin karate | women      | 33,47 | 5,62 |
|                  | men        | 32,73 | 3,67 |
|                  | altogether | 33,10 | 4,68 |
| kickboxing       | women      | 34,87 | 3,62 |
|                  | men        | 30,40 | 8,20 |
|                  | altogether | 32,63 | 6,63 |
| altogether       | women      | 34,17 | 4,70 |
|                  | men        | 31,57 | 6,36 |



**Figure 4.** The level of extraversion depending on the type of sport played.

There was no statistically significant effect of the main type of sport practised,  $F(1, 56) = 0.10$ ;  $p = 0.748$ ;  $\eta^2 = 0$ . As can be seen in Figure 4, the level of extroversion of competitors practising both types of sports was similar.

Only major gender effect close to statistical significance was recorded,  $F(1, 56) = 3.23$ ;  $p = 0.078$ ;  $\eta^2 = 0.06$ . As can be seen in Figure 5, the level of extraversion was higher in the group of women. The strength of the effect noted was small.

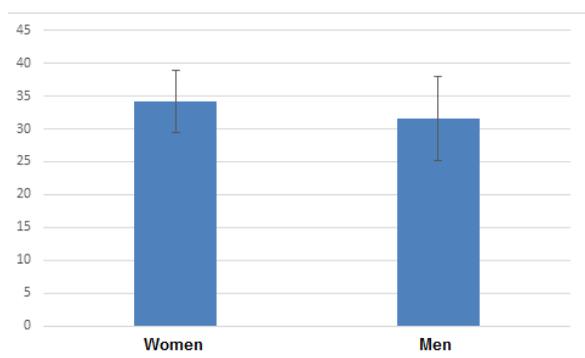


Figure 5. Level of extraversion depending on the players' gender.

There was no statistically significant effect of gender interaction and type of sport practised,  $F(1, 56) = 1.67$ ;  $p = 0.202$ ;  $\eta^2 = 0.03$ . Despite this, simple effects analysis was performed. The simple gender effect was noted only in the group of kickboxing players ( $p = 0.033$ ). Women recorded higher results in the group of these players. In the group of karate Kyokushin players, there was no difference even at the level of statistical tendency. The simple effect of the type of sport was not noted in any of the compared groups. The results are shown in Figure 6.

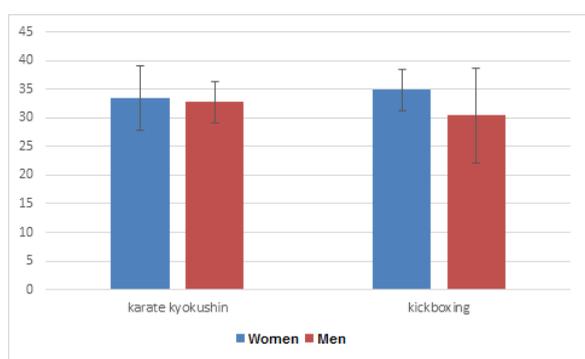


Figure 6. The level of extraversion depending on the type of sport played and the gender of the players.

*Openness to experience*

In the next step, it was decided to check whether the level of openness to experience depends on the type of sport played and the sex of the respondents. A two-factor analysis of variance was performed in the intergroup diagram. Table 4 presents descriptive statistics of the level of the studied variable.

Table 4. The level of openness to experience in the studied groups

| Group            | Gender     | M     | SD   |
|------------------|------------|-------|------|
| Kyokushin karate | women      | 23,33 | 3,90 |
|                  | men        | 29,07 | 5,02 |
|                  | altogether | 26,20 | 5,29 |
| kickboxing       | women      | 26,20 | 4,78 |
|                  | men        | 28,67 | 7,33 |
| Altogether       | altogether | 27,43 | 6,21 |
|                  | women      | 24,77 | 4,53 |
|                  | men        | 28,87 | 6,17 |

There was no statistically significant effect of the main type of sport practised,  $F(1, 56) = 0.78$ ;  $p = 0.381$ ;  $\eta^2 = 0.01$ . As can be seen in Figure 7, the level of openness to experience of players practicing both types of sports was similar.

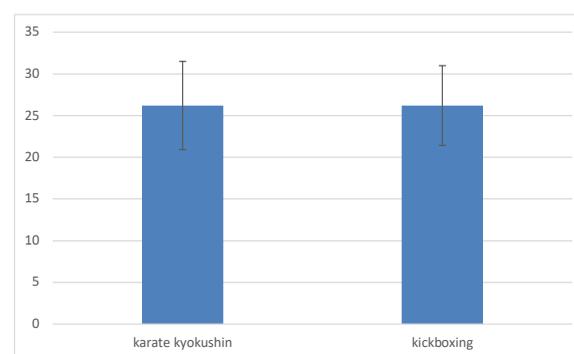


Figure 7. The level of openness to experience depending on the type of sport played.

However, a statistically significant main effect of sex was noted,  $F(1, 56) = 8.62$ ;  $p = 0.005$ ;  $\eta^2 = 0.13$ . As can be seen in Figure 8, the level of openness to experience was higher in the group of men. The strength of the effect noted was significant.

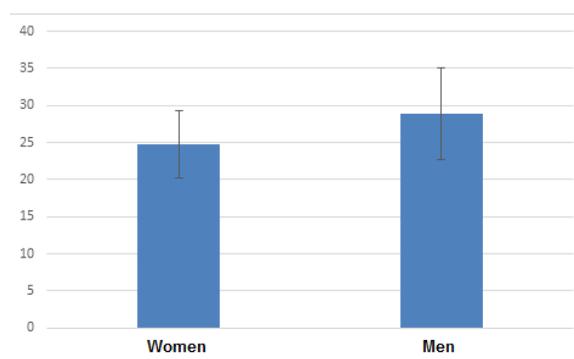
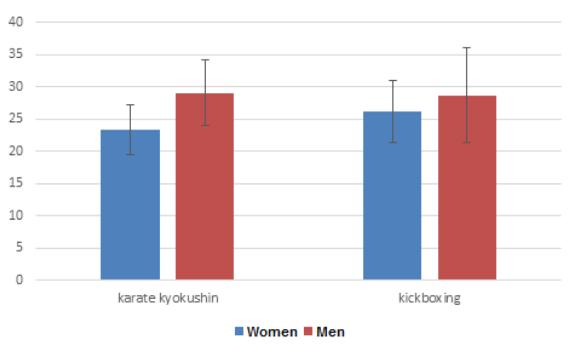


Figure 8. Level of openness to experience depending on the players' gender.

There was no statistically significant effect of gender interaction and type of sport practised,  $F(1, 56) = 1.37$ ;  $p = 0.247$ ;  $\eta^2 = 0.02$ . Despite this, simple effects analysis was performed. A simple gender effect was noted only in the group of karate Kyokushin players ( $p = 0.005$ ). Men

recorded higher results in the group of these players. In the group of kickboxing players there was no difference even at the level of statistical tendency. The simple effect of the type of sport was not noted in any of the compared groups. The results are shown in Figure 9.



**Figure 9.** The level of openness to experience depending on the type of sport played and the gender of the players.

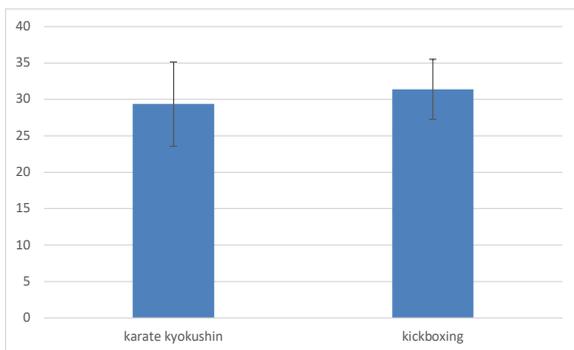
*Agreeableness*

In the next step, it was decided to check whether the level of agreeableness depends on the type of sport played and the sex of the respondents. A two-factor analysis of variance was performed in the intergroup diagram. Table 5 presents descriptive statistics of the level of the studied variable.

**Table 5.** The level of agreeableness in the studied groups

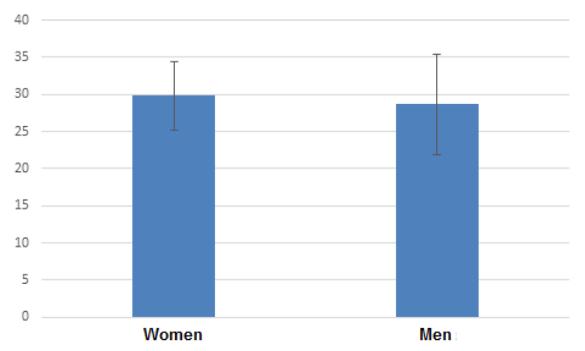
| Group            | Gender     | M     | SD   |
|------------------|------------|-------|------|
| Kyokushin karate | women      | 23,33 | 3,90 |
|                  | men        | 29,07 | 5,02 |
|                  | altogether | 26,20 | 5,29 |
| kickboxing       | women      | 26,20 | 4,78 |
|                  | men        | 28,67 | 7,33 |
|                  | altogether | 27,43 | 6,21 |
| altogether       | women      | 24,77 | 4,53 |
|                  | men        | 28,87 | 6,17 |

There was no statistically significant effect of the main type of sport practised,  $F(1, 56) = 0.03$ ;  $p = 0.872$ ;  $\eta^2 = 0$ . As can be seen in Figure 10, the level of agreeability of players practising both types of sports was similar.



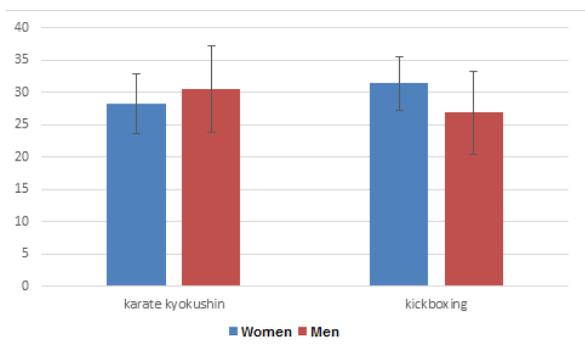
**Figure 10.** The level of agreeableness depending on the type of sport played.

There was also no statistically significant main gender effect,  $F(1, 56) = 0.65$ ;  $p = 0.423$ ;  $\eta^2 = 0.01$ . As can be seen in Figure 11, the level of agreeableness was similar in the group of women and men.



**Figure 11.** The level of agreeableness depending on the players' gender.

However, a statistically significant effect of the interaction of gender and type of sport practised was noted,  $F(1, 56) = 5.42$ ;  $p = 0.024$ ;  $\eta^2 = 0.09$ . For this reason, simple effects analysis was compulsory. The simple gender effect applies to a group of kickboxers ( $p = 0.031$ ). Women have higher results in the group of these players. In the group of karate Kyokushin players, there is no difference even at the level of statistical trend. The simple effect of the type of sport was not noted in the group of men, but it was only close to the statistical significance ( $p = 0.084$ ). A higher level of agreeableness applies to karate players. In the group of women, this difference was not even close to statistical significance. The results are shown in Figure 12.



**Figure 12.** The level of agreeableness depending on the type of sport played and the gender of the players.

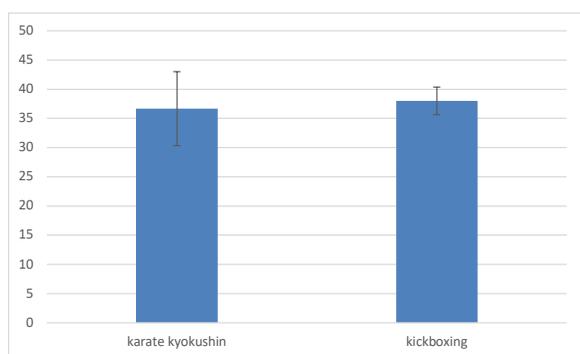
*Conscientiousness*

In the next step, it was decided to check whether the level of conscientiousness depends on the type of sport played and the sex of the respondents. A two-factor analysis of variance was performed in the intergroup diagram. Table 6 presents descriptive statistics of the level of the studied variable.

**Table 6.** The level of conscientiousness in the studied groups

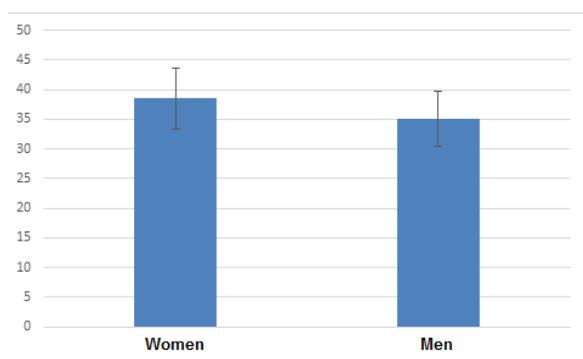
| Group            | Gender     | M     | SD   |
|------------------|------------|-------|------|
| Kyokushin karate | women      | 39,00 | 6,90 |
|                  | men        | 34,33 | 4,88 |
|                  | altogether | 36,67 | 6,33 |
| kickboxing       | women      | 38,00 | 2,36 |
|                  | men        | 35,93 | 4,48 |
|                  | altogether | 36,97 | 3,67 |
| altogether       | women      | 38,50 | 5,09 |
|                  | men        | 35,13 | 4,67 |

There was no statistically significant effect of the main type of sport practised,  $F(1, 56) = 0.06$ ;  $p = 0.814$ ;  $\eta^2 = 0$ . As can be seen in Figure 13, the level of conscientiousness of players practicing both types of sports was similar.



**Figure 13.** The level of conscientiousness depending on the type of sport played.

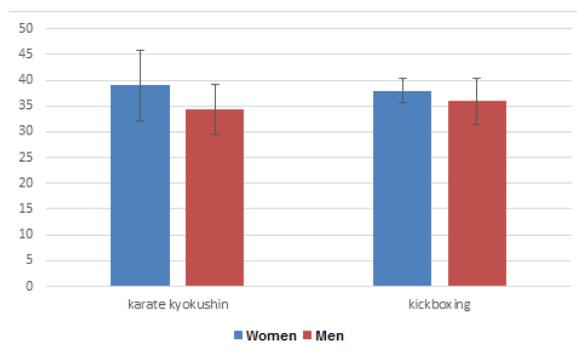
However, a statistically significant main effect of sex was noted,  $F(1, 56) = 7.01$ ;  $p = 0.011$ ;  $\eta^2 = 0.11$ . As can be seen in Figure 14, the level of conscientiousness was higher in the group of women. The strength of the effect noted was significant.



**Figure 14.** The level of conscientiousness depending on the players' gender.

However, no statistically significant effect of gender interaction and type of sport was found,  $F(1, 56) = 1.05$ ;  $p = 0.311$ ;  $\eta^2 = 0.02$ . Despite this, a simple effects analysis was performed. Simple gender effect was noted only in the group of karate Kyokushin fighters

( $p = 0.012$ ). Women have higher results in the group of these players. In the group of kickboxing players, there was no difference even at the level of statistical tendency. The simple effect of the type of sport was not noted in any of the compared groups. The results are shown in Figure 15.



**Figure 15.** The level of conscientiousness depending on the type of sport played and the gender of the players.

### Discussion

Obtained research results have shown that there is no difference in personality traits between the studied groups of combat sports karate Kyokushin (knock-down formula) and kickboxing (full-contact formula). Comparing the results of previous studies [Czajkowski 2006; Litwiniuk *et al.* 2009; Fuller 2011; Krzyzanowski, Przybylska 2012; Maslinski *et al.* 2015; Piepiora *et al.* 2016c, 2018; Witkowski *et al.* 2017; Avelar-Rosa, Lopez-Ros 2019] it can be stated that the personality profile of combat sports players is low neuroticism, high extraversion and conscientiousness, and average openness to experience and agreeableness. At the same time, this profile is similar to the profiles of athletes from other individual and team sports disciplines [Ilyasi, Salehian 2011; Binboga *et al.* 2012; Tolea *et al.* 2012; Tok 2013; Kang *et al.* 2016; Kim *et al.* 2018; Piepiora, Witkowski 2018; Piepiora *et al.* 2020]. Therefore, it can be assumed that sports activity and the sports environment shape the personality of sportspeople, regardless of the sport discipline they train.

In the division of fighters into combat sports by gender, women showed greater neuroticism, extraversion and conscientiousness, and less openness to experiences in relation to men. These results confirm previous studies in the field of sport psychology: personality profile of men who train contact sports as low neuroticism, high extraversion, and conscientiousness, average openness to experience, and agreeableness. Whereas the personality profile of contact sports players is average neuroticism, openness to experience and agreeableness as well as high extraversion and diligence [Anshel, Kaissidis 1997; Twenge 1997; Anshel, Sutarso

2007; Buman *et al.* 2008; Nien, Duda 2008; Soto *et al.* 2008; Tenenbaum, Connolly 2008; Burnet, Sabiston 2009; Chalabae *et al.* 2009; Slater, Tiggerman 2010; Unestahl 2013].

The social stereotype of contact sport accentuates its belonging to the male circle of culture. In popular opinion, contact sport is more for men than for women [Lewko, Ewing 1980; Taylor, Hall 1982; Matteo 1986; Salminen 1990]. The contact sport stereotype assumes that most of the competitions that women do not train in are sports for men. Therefore, women's attempts to train them face social resistance. Female athletes who choose to train male disciplines may be exposed to more or less subtle forms of social ostracism. After some time, when the training of men's discipline by women becomes a reality, the stereotype changes. In social perception, a given field of sport ceases to be as unambiguously masculine as it was before. Parallel to this process, the degree of social ostracism and disapproval for women practicing a given discipline is decreasing. The participation of women obtains the status of normality so that nowadays training of contact sports by women does not disturb public opinion [Piepiora, Petecka 2020].

Modern women are now more and more independent, and women's emancipation is also evident in sport. Martial arts' athletes fight with traditional femininity because they have more personality traits traditionally attributed to men – a high level of masculinity. High openness to athletes' experience is also seen as a tendency to break conventions. As highly non-conformist people, they live according to their own value system and practise sport, which is stereotypically treated as masculine. Combat sports are trained by women with low emotional and sensory reactivity, which ensures their favorable position in sports competitions [Burdzicka-Wolowik, Goral-Radziszewska, 2014].

The conducted study is limited by the number of respondents and is limited to two combat sports representing different combat formulas. Future research into the relationship between personality and gender should take into account the larger population of all combat sports and formulas [Piepiora *et al.* 2016a], including training aims: sport [Piepiora *et al.* 2017c], utilitarian [Starosta, Pawlowa-Starosta 2004] and health [Schmidt 2002].

The obtained research results suggest that in the training practice all available training methods should be used and at the same time the groups should be individualized by gender. The knockdown formula and the full-contact formula in the sports process are similar in the stages of motor, technical and mental (personality) preparation. The main difference concerns the elements of tactical sports combat. And classes conducted separately for men and women will activate given exercise groups (e.g. in sparring) to exceed the limits of their own abilities, increase self-confidence and mental resilience.

On the other hand, a by-product of such a division will be the practitioners' understated empathy.

## Conclusions

1. The personality of the *Kyokushin karate* and kickboxing athletes was at a similar level in all personality dimensions: low neuroticism, high extraversion, and conscientiousness, average openness to experience, and agreeableness. People competing in the knock-down formula are no different from those competing in the full-contact formula and from athletes from other disciplines in all personality traits.
2. Athletes in a general gender division showed significant differences: women were more neurotic, extroverted and conscientious, and less open to experience in relation to men, agreeableness was at a similar level. Gender is an important personality determinant among combat sports practitioners.
3. Women training *Kyokushin karate* were more neurotic and conscientious and less open to experience than men from the same combat sports. Gender is an important personality determinant among people training in *Kyokushin karate*.
4. Women training in kickboxing were more extroverted and conciliatory to men in the same combat sports. Gender is an important personality determinant among kickboxing practitioners.

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## Osobowość a płeć osób trenujących karate Kyokushin i kickboxing

**Słowa kluczowe:** psychologia sportu, osobowość, karate Kyokushin, kickboxing, płeć

### Abstrakt

Tło i cel. Kickboxing jest pełno kontaktowym sportem walki, który ewoluował z formuły walki knockdown charakterystycznej dla karate Kyokushin. Celem artykułu była próba określenia osobowości osób trenujących karate Kyokushin i kickboxing.

Materiał i metoda. W badaniu wzięły udział osoby trenujące wyczynowo karate Kyokushin (n1=30) i kickboxing (n2=30) w wieku od 18 do 29 lat. W każdej próbie było 15 kobiet i 15 mężczyzn. Jako metodę wykorzystano Kwestionariusz Osobowości NEO-FFI [Costa Jr., McCrae 2007].

Wyniki. Osobowość sportowców karate Kyokushin i kickboxingu była na zbliżonym poziomie we wszystkich wymiarach osobowości: niska neurotyczność, wysoka ekstrawersja i sumienność, przeciętna otwartość na doświadczenia i ugodowość. Ale kobiety (ogólnie) były bardziej neurotyczne, ekstrawertyczne i sumienne oraz mniej otwarte na doświadczenia w relacji do mężczyzn, ugodowość była na zbliżonym poziomie. Kobiety trenujące karate Kyokushin były bardziej neurotyczne i sumienne oraz mniej otwarte na doświadczenia niż mężczyźni z tego samego sportu walki. Kobiety trenujące kickboxing były bardziej ekstrawertyczne i ugodowe w relacji do mężczyzn z tego samego sportu walki.

Wnioski. Osoby rywalizujące w formule knockdown nie różnią się od osób rywalizujących w formule full-contact oraz od sportowców innych dyscyplin we wszystkich cechach osobowości. Płeć jest istotnym determinantem osobowości wśród osób trenujących sporty walki.