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Personality profiles of karate masters practising different kumite styles

Paweł Piepiora[1ABCDE], **Kazimierz Witkowski**[1BCDE], **Zbigniew Piepiora**[2BCD]

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A Study Design
B Data Collection
C Statistical Analysis
D Manuscript Preparation
E Funds Collection

[1] Combat Sports Team, Chair of Sport Didactics, Faculty of Sport Sciences, Wroclaw University School of Physical Education, Wroclaw, Poland
[2] Department of Spatial Economy, Faculty of Environmental Engineering and Geodesy, Wroclaw University of Environmental and Life Sciences, Wroclaw, Poland

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Abstract

Background and Study Aim: As far as common adaptive effects are concerned, long-term karate training based on kumite technique (socially acceptable form of hand-to-hand-fighting) results in increased resistance to opponent's strikes and ability to tolerate pain and certain type of body injuries. Therefore, it could be assumed that karate masters possess most of all certain personality traits, but kumite technique (style) is not a factor that significantly modifies this relationship and the profile of the world champions of the kumite style may differ from this model. The goal of the study is to verify this hypothesis.

Material and Methods: In total 150 best Polish kumite competitors were included in the study; 30 each from five techniques (styles) of karate, including: semi contact- World Karate Federation recognised by the International Olympic Committee (in this paper: WKF) and shōtōkan; full contact - Oyama; mix fighting - shidōkan; knockdown - kyokushin. The subgroup of kumite karate champions (KKC, n = 23) consisted of winners of the gold medals of the world championships, whereas the subgroup of karate masters (KM) consisted of other athletes (n=127). Personality measurements were based on big five NEO-FFI scales (neuroticism, extraversion, openness to experience, agreeableness, conscientiousness).

Results: It is true that karate masters have distinctive personality traits (which include: low neuroticism and high conscientiousness), whereas it would be false to assume that kumite technique (style) is not a factor that significantly modifies this relationship. WKF karate athletes exhibits the lowest neuroticism when compares to other ones ($p<0.01$); Oyama karatekas exhibits lower extraversion than WKF, shidōkan and kyokushin athletes ($p<0.05$). It turned out to be true that personality profiles of gold medal winners of the World Karate Championships of kumite style (KKC) may differ from the model of the remaining KM.

Conclusions: The new empirical argumentation is an important premise for conducting in-depth personality studies on athletes at every stage of a sports career. Such knowledge combined with studies of other predispositions and adaptive effects (that are in relation to unique events determined by various types of sports) is a prerequisite for embodying social and health-related mission of sports in an optimal manner.

Key words: big five NEO-FFI • kata • poomse • sports psychology • tori • uke

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Author's address: Paweł Piepiora, Wroclaw University School of Physical Education, Paderewskiego 35 Str., 51-612 Wroclaw, Poland; e-mail: pawel.piepiora@awf.wroc.pl

INTRODUCTION

In sports psychology, issues related to personality are raised especially from the perspective of organizers, teachers and educators when various inter-individual psychophysical properties and behaviours of people practicing sport or pursuing health goals through the physical activity are described and explained [1-3]. Numerous psychological theories can be distinguished. One of them, trait theory (also referred to as the dispositional theory) is an approach to the study of human personality [4-9]. This theory is based on factor analysis and may turn out very useful in diagnosing the psychological profile of individual athletes and constructing psychological models of athletes of a given discipline (or figuratively speaking: of their strengths and weaknesses).

Studies on personality of athletes conducted so far revealed that compared with those who do not practice any sport they exhibit various levels of conscientiousness and extraversion. Athletes are more social and consistent [10-18]. Substantial differences were also found between athletes practicing team sports and individual sports. However, this issue raises legitimate controversy, as many scientists consider combat sports athletes persons training individual sports. This distinction is only partially true (justified). Let us focus on combat sports that are in the program of the Olympic Games. In order to execute their sports mission, a boxer, swordsman, or wrestler has to fight directly with a competitor (socially acceptable form of hand-to-hand-fighting). In case of a judo athlete practicing kata (as well as sports competition of this style that is however not included in the programme of the Olympic Games) requires a partner who has to respect the role of *uke* (a person who does not interfere with the goal of tori; on the contrary a partner should help achieving this goal). Therefore, considering representatives of these Olympic combat sports as those who practice individual sports primarily fails to meet criteria of logic. On the other hand, karate and taekwondo athletes (leaving aside the criteria of Olympic competition which involve *kumite*) can train and compete in line with principles applicable in individual sports. This means that an opponent does not interfere with them directly through physical contact or, as in the case of sports games, manipulating an item (a ball, puck, shuttlecock, etc.), at the same time staying in close contact (racket sports, volleyball) or even very often in direct physical contact (hockey, football, etc.). Exercises and competition using kata (karate) or poomse (taekwondo) techniques give karate athlete and taekwondo athlete comfort of not being disturbed directly by an opponent.

The question of why some karate and taekwondo athletes but also judo athletes decide on sports career involving competition based on kata (poomse) techniques remains open. This issue is important because it is justified to claim that the group of individual sports (distinguished also by some scientists for research-related purposes) does not meet methodological criteria of adequate distribution. Therefore, it is not surprising that players of team sports games showed greater neuroticism and extraversion than athletes practising individual disciplines [19-24]. The nature of competing as a group against a group is so obvious that especially in-depth interdisciplinary studies will probably reveal other common traits that distinguish team-sport game leaders from other players and perhaps also from athletes practicing other disciplines.

On the other hand there is some empirical evidence that personality profiles of athletes of individual disciplines who represent a diverse sports level do not significantly differ from each other [25-42]. Thus, the theory of traits may turn out to be important for studying traits of athletes also because it still remains undetermined whether there are personality traits that predispose to success in sport regardless of the discipline being practiced. Sport success in team games (at least two players against two players, as in double games, e.g. racket sports or volleyball beach) – regardless of leading role of the leaders – is always a derivative of the effort put in by all team members. Failure is often the result of one (or several) mistake(-s) made by only one team member. In individual sports involving high energy expenditure (the majority of athletics competition, weightlifting, cycling etc.) physical predispositions are a success-determining factor.

Since mutual interference in such a way that offensive and defensive actions are directed to the opponent's body directly (protectors only partially protect against negative effects – fatal cases are also known in fencing) is a common factor in combat sports (except for expressive forms of competition: kata, poomse), mental toughness and other personality traits acquire particular importance. This assumption is

Kumite – is a karate competition, during which two athletes use various kicking, punching and blocking techniques towards each other with control in order to gain points and win the competition. Permissible contact depends on martial / karate style regulations [71].

Kyokushin – is a style of stand-up, knockdown karate, developed by Masutatsu Oyama which means the "Ultimate Truth". It is based on Sosai's point and circle concept by which one draws a circle around one point and attaches the lines around the circle [72].

Oyama karate – full-contact karate style, created by Shigeru Ōyama (1983).

Shidōkan – is a style of mix fighting karate; founded in 1980 [73].

Shotokan – semi contact style of karate started and pioneered by Sensei Gichin Funakoshi. Initially, shotokan was the name of the first karate dojo (the "***honbu dojo***" – central dojo), but over time it became the name of the style of karate taught / practised by Sensei Funakoshi [74].

Sports psychology – *noun* is scientific study of mental state of athletes, focusing on issues, such as motivation, concentration, stress and self-confidence [75].

Sport psychology – is an interdisciplinary science that draws on knowledge from many related fields, including biomechanics, physiology, kinesiology and psychology. It involves the study of how psychological factors affect performance and how participation in sport and exercise affect psychological and physical factors [76].

Kata – predetermined and choreographed physical exercises, which together with free exercises (randori),

justified as one of long-term karate training based on kumite technique (which means that the effect applies to all practitioners of this technique) results in increased to the opponent's strikes and ability to tolerate pain and certain type of body injuries.

If these premises and assumptions are true, it could be assumed that karate masters possess most of all certain personality traits, but kumite technique (style) is not a factor that significantly modifies this relationship and the profile of the world champions of the kumite style may differ from this model. The goal of the study is to verify this hypothesis.

MATERIAL AND METHODS

Study design

Personality profiles based on the big five NEO-FFI scales: neuroticism, extraversion, openness to experience, agreeableness, conscientiousness, often represented by the acronyms *OCEAN* or *CANOE* were applied as an empirical criterion for verifying the hypothesis [43-47]. Beneath each global factor, there are several correlated and more specific primary factors (for example extraversion is associated with: gregariousness, assertiveness, excitement seeking, warmth, activity and positive emotions). Each of five scales consists of 12 items (the raw score in each scale ranges from 0 to 48). The higher the numerical score in the scale, the greater the intensity of given trait (greater number of diagnostic responses reflects higher intensity of traits of given person).

The following inclusion criteria were applied: long-term sports experience; licence of kumite in one of five predetermined types of karate; impeccable opinion given by the instructor; documented sports achievements at various competition levels (national, continental, global). Exclusion criteria: ethical or unsportsmanlike lifestyle; no recommendation from the instructor. The design has been approved by the local ethics committee.

Participants

In total 150 best Polish kumite competitors were included in the study; 30 each from five techniques (styles) of karate, including: semi contact- World Karate Federation recognised by the International Olympic Committee (in this article: **karate WKF**) and **shōtōkan**; full contact- **Oyama karate**; mix fighting - **shidōkan**; knockdown - **kyokushin**. Current (and former) members of the national team, medallists of World European and Polish Championships were among karate athletes. The average age of participants amounted to 27.7 years (18 to 39 years).

Regardless of the karate technique (style) trained, a group of 23 "kumite karate champions" (KKC) was distinguished. It consisted of those who won at least one golden medal in kumite karate world championships. The remaining group (n=127) consisted of silver and bronze medallists of world championships, medallists of the European and Polish championships. This was the reference group ("karate masters").

The study was carried out during seminars, training camps of the national team and national competitions in 2012-2016.

Statistical analysis

The statistical analysis of data is performed using Statistica v.12 software. It involved indicators of descriptive statistics: arithmetic mean value, median, standard deviation (in tables referred to as SD or ±), error of the mean, range (minimum÷maximum results and lower÷upper quartile), variation coefficient, skewness, standard error (SE) and confidence intervals. We used analysis of variance (ANOVA). The significance of differences between groups was estimated by means of Student's t-test.

RESULTS

Generally personality profile of karate athletes practising various types of kumite is similar (moderate neuroticism, openness to experience and agreeableness as well as high conscientiousness and extraversion), suggesting that this part of verified hypothesis is true (Tables 1 to 5). On the other hand, statement that kumite type (style) is not a factor that significantly modifies this model is untrue. WKF karate athletes exhibit the lowest level of neuroticism among athletes studied (Table 6, Figure 1) as well as the lowest intersubject variability in case of this trait (Table 6).The ANOVA analysis indicates lack of homogeneity in case of neuroticism ($p<0.001$) and extraversion ($p<0.05$) (Table 7). Post-hoc test revealed

lectures (kōgi) and discussions (mondō) form the four critical pillars of Kōdōkan jūdō education [77].

Kata – prescribed patterns or sequences of techniques [78]

Kata (form) – is executed as a specified series of a variety of moves, with stepping and turning, while attempting to maintain perfect form. *Kata* reflects a transition and flow from one posture and movement to another, teaching the karateka proper form and position, and encouraging them to visualize different scenarios for the use of each motion and technique in imaginary bout. There are various forms of kata developed through different karate styles.

Poomse (**kata** in taekwondo) – it is traditionally understood as the style of conduct which expresses directly or indirectly mental and physical refinements as well as the principles of offense and defence resulting from cultivation of taekwondo spirit and techniques. Nowadays, poomse is involved in competition in the taekwondo technique modality.

Tori – the person who applies a technique in ***judo*** training. The receiver of the technique is referred to as ***uke*** [78].

Racket sport – *noun* any of various sports that use a racket and ball or shuttlecock, e.g. tennis, badminton or squash [75].

that only WKF karate athletes exhibit lower neuroticism than each group of other kumite karatekas and greater extraversion ($p<0.01$) only than Oyama karate athletes at statistically significant levels (at least $p<0.01$). Oyama karatekas show lower extraversion than shidōkan and kyokushin karate athletes as well as lower agreeableness than shidōkan karatekas (Table 7).

It turned out to be true that personality profiles of Kumite karate world champions (KKC) may differ from the profile of the remaining KM. KKC exhibits very low neuroticism ($p<0.001$) and conscientiousness, extraversion and agreeableness greater than the ones of KM. On the other hand both groups of karatekas are similar in terms of moderate openness to experience (Table 8, Figure 2). Nevertheless variance analysis confirms the greatest probability of differences in terms of neuroticism and conscientiousness both by t-test and variance ratio test (F-test) results (Table 8).

DISCUSSION

The results of our studies on personalities of karate athletes practising kumite style, performed with the use of the big five NEO-FFI method, confirm that their personalities are generally consistent with profiles of athletes training other sports disciplines (moderate neuroticism, openness to experience and agreeableness as well as high conscientiousness and extraversion). Therefore, the most general conclusion is that test results may be interpreted based on well-known psychological theories: temperament is a relatively constant biological property of an organism that genetics-related; and personality is a notion structured on temperament that is shaped by environment [48]; in case of athletes these include regular training stimuli and experience gained during competition.

Since personality evolves, changes during a lifetime and temperament is constant and unchangeable, the fundamental cognitive dilemma from the study-related perspective raises several important methodological issues. First of all, because we do not possess knowledge about personality of studied karate athletes from the previous periods of their sporting career, we cannot infer about how their long-term training could have affected possible changes of this important human property. Second of all, it is unlikely that with large motor similarity of karate training and regardless of multitude of kumite techniques (styles) (from semi contact to knockdown), formal exercises and participation in combats (during training and competition) could have a decisive impact on shaping personality of practitioners, leaving aside influence of their instructor and other entities in the closest social environment of a karate athlete. Third of all, we lack empirical knowledge about comprehensive impact of an instructor (his or her personality) and other social factors on the personality of a karate athlete. Therefore, comparative results of world champions (KKC) with other karate masters (KM) practising various types of kumite style have the greatest cognitive value at the current stage of studies on this phenomenon. It is an open question to determine whether the personality profile of world champions has been shaped only in the course of a long-term sporting career or whether they manifested already at

Table 1. Estimated results of WKF karatekas (n = 30) related to their personality profile according to the big five NEO-FFI scales.

NEO-FFI Variable	Mean SD	Median	Range		Variation coefficient	Skewness
			results min÷max	quartile lower÷upper		
Neuroticism	8.93 ±2.60	8.50	12 3÷15	3 7÷10	29.092	0.5203
Extraversion	32.60 ±3.84	32	16 26÷42	4 30÷34	11.773	0.6460
Openness to experience	26.60 ±6.36	29	23 15÷38	9 22÷31	23.911	−0.2292
Agreeableness	29.30 ±5.69	29.50	32 14÷46	4 27÷31	19.414	0.2549
Conscientiousness	37.30 ±4.34	37	18 29÷47	6 34÷40	11.64	0.1503

Table 2. Estimated results of shōtōkan karatekas (n = 30) related to their personality profile according to the big five NEO-FFI scales.

NEO-FFI Variable	Mean SD	Median	Range		Variation coefficient	Skewness
			results min÷max	quartile lower÷upper		
Neuroticism	14.50 ±5.62	15	25 00÷25	5 13÷18	38.75	−0.735
Extraversion	31.30 ±5.14	51.5	19 23÷42	7 27÷34	16.42	0.144
Openness to experience	26.70 ±6.80	28	23 15÷38	12 20÷33	25.46	−0.152
Agreeableness	29.60 ±5.59	29	32 14÷46	7 26÷33	18.89	0.307
Conscientiousness	34.97 ±6.91	36	27 20÷47	11 29÷40	19.76	−0.433

Table 3. Estimated results of Oyama karatekas (n = 30) related to their personality profile according to the big five NEO-FFI scales.

NEO-FFI Variable	Mean SD	Median	Range		Variation coefficient	Skewness
			results min÷max	quartile lower÷upper		
Neuroticism	15.17 ±7.29	16.50	29 00÷29	11 9÷20	48.08	−0.109
Extraversion	28.83 ±6.18	29.50	22 19÷41	8 25÷33	21.42	0.234
Openness to experience	27.43 ±6.02	27.50	23 17÷40	9 23÷32	21.95	0.662
Agreeableness	28.40 ±4.92	28.00	22 17÷39	7 25÷32	17.31	0.107
Conscientiousness	35.03 ±7.29	34.50	25 22÷47	13 29÷42	20.81	−0.135

Table 4. Estimated results of shidōkan karatekas (n = 30) related to their personality profile according to the big five NEO-FFI scales.

NEO-FFI Variable	Mean SD	Median	Range		Variation coefficient	Skewness
			results min÷max	quartile lower÷upper		
Neuroticism	13.90 ±8.11	13.50	29 00÷29	11 8÷19	58.33	0.402
Extraversion	31.33 ±4.46	31	17 23÷40	5 29÷34	14.23	0.041
Openness to experience	27.03 ±6.02	27	25 16÷41	7 23÷30	22.27	0.422
Agreeableness	31.23 ±5.55	30.50	26 22÷48	6 28÷34	17.77	0.850
Conscientiousness	35.57 ±6.39	35.50	24 22÷46	9 32÷41	17.97	−0.282

Table 5. Estimated results of kyokushin karatekas (n = 30) related to their personality profile according to the big five NEO-FFI scales.

NEO-FFI Variable	Mean SD	Median	Range		Variation coefficient	Skewness
			results min÷max	quartile lower÷upper		
Neuroticism	14.63 ±6.81	16.50	25 2÷27	9 9÷18	46.50	0.005
Extraversion	32.33 ±4.82	32	18 24÷42	8 28÷36	14.92	0.237
Openness to experience	25.33 ±5.74	24	23 15÷38	7 22÷29	22.65	0.478
Agreeableness	28.83 ±6.04	29	27 19÷46	9 23÷32	20.95	0.767
Conscientiousness	35.47 ±7.75	34.50	30 18÷48	11 30÷41	21.86	−0.075

Table 6. Summarised results of karatekas related to their personality profile according to the big five NEO-FFI scales.

Group of karatekas	Extraversion		Neuroticism		Openness to experience		Agreeableness		Conscientiousness	
	mean SD	SE confidence −95%; +95%	mean SD	SE confidence −95%; +95%	mean SD	SE confidence −95%; +95%	mean SD	SE confidence −95%; +95%	mean SD	SE confidence −95%; +95%
all (n = 150)	31.28 ±5.06	0.41 30.46; 32.1	13.43 ±6.70	0.55 12.35; 14.51	26.62 ±6.16	0.50 25.63; 27.61	29.47 ±5.58	0.46 28.57; 30.37	35.67 ±6.61	0.54 34.6; 36.73
Individual kumite techniques (styles); each group consisted of 30 people										
WKF	32.60 ±3.84	0.70 31.17; 34.03	8.93 ±2.60	0.47 7.96; 9.9	26.60 ±6.36	1.16 24.22; 28.98	29.30 ±5.69	1.04 27.18; 31.42	37.30 ±4.34	0.79 35.68; 38.92
shōtōkan	31.30 ±5.14	0.94 29.38; 33.22	14.50 ±5.62	1.03 12.4; 16.6	26.70 ±6.80	1.24 24.16; 29.24	29.60 ±5.59	1.02 27.51; 31.69	34.97 ±6.91	1.26 32.39; 37.55
Oyama karate	28.83 ±6.18	1.13 26.53; 31.14	15.17 ±7.29	1.33 12.44; 17.89	27.43 ±6.02	1.10 25.19; 29.68	28.40 ±4.92	0.90 26.56; 30.24	35.03 ±7.29	1.33 32.31; 37.76
shidōkan	31.33 ±4.46	0.81 29.67; 33.0	13.90 ±8.11	1.48 10.87; 16.93	27.03 ±6.02	1.10 24.79; 29.28	31.23 ±5.55	1.01 29.16; 33.31	35.57 ±6.39	1.17 33.18; 37.95
kyokushin	32.33 ±4.82	0.88 30.53; 34.13	14.63 ±6.81	1.24 12.09; 17.17	25.33 ±5.74	1.05 23.19; 27.48	31.23 ±5.55	1.10 26.58; 31.09	35.57 ±7.75	1.42 32.57; 38.36

the beginning of karate practice: very low neuroticism (desired trait), conscientiousness, extraversion and agreeableness greater than other beginning karatekas and moderate openness to experience similar to other karatekas (see Table 8 and Figure 2).

In our opinion, the results provide new arguments about the health aspects of combat sports training (socially acceptable form of hand-to-hand-fighting), martial arts and self-defence, as the so-called sports of life [49-54]. When we state that we are concerned only with the socially acceptable form of combat (such as kumite style), we leave aside a pathological phenomenon of neogladiatorship, which is related to martial arts [55], is promoted by electronic media and is also present in science. This complex of phenomena is the subject of in-depth studies of innovative agonology experts that have become more popular from 2015 [56-58]. It is not difficult to prove the instrumental use of science. The authors of published studies on contemporary gladiators do not criticise the pathological aspect of this phenomenon even if given publication provides knowledge about death and body injuries as a result of massacring an opponent who is often already lying down [e.g. 59].

On the other hand, there are few empirical papers addressing the phenomena of mental

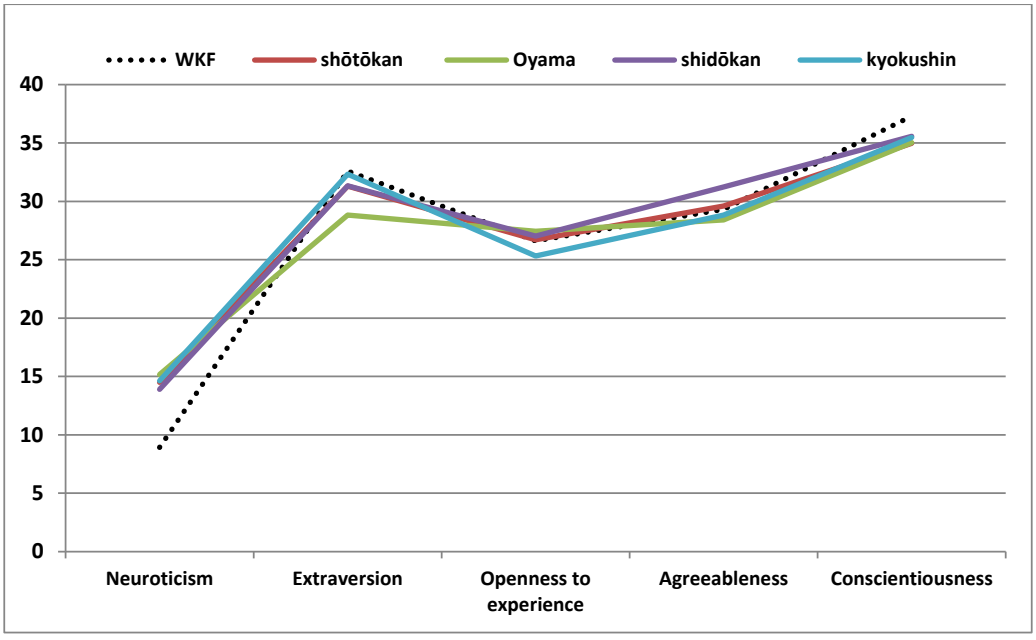

Figure 1. Visualization of personality profiles of karate athletes (each group consisted of 30 people) practicing various kumite techniques (styles).

effects of karate training [60, 61] or especially personality shaping in the broad context of positive health and survival ability through a rational, long-term training of combat sports and martial arts. Although scientists studying predispositions to broadly understood hand-to-hand-fighting (self-defence and combat sports) focus on specific tests and motor stimulations [49, 54, 62-65] as well as on fun forms of martial arts [66, 67], they emphasize that these tests and motor simulations contain a mental component in their assumptions and interpretation of empirical data. The most recent publications distinguish multidimensional tests, some of which identify abilities (talent) of hand-to-hand-fighting [68]. Stanislaw Dadelo [69] discovered significant correlations between the S-Index (the percentage of scuffles won relative to all scuffles conducted by given subject during TFVP) and professional activity, theoretical and practical preparation, mental traits (indicators directly informing us about intellectual potential) of 118 male guards from Lithuania.

All indicators of TFVP ("testing fights in a vertical posture"), in our opinion, can be correlated also with psychological personality tests indicators already at the initial stage of each combat

Table 7. Variance analysis of the results of the big five NEO-FFI scales (df 148) obtained by gold medal winners of the World Karate Championships (KKC) and other karate masters in kumite style (KM).

NEO-FFI Variable	ANOVA		Probability for post hoc test (value p)									
			WKF				shōtōkan			Oyama		shidōkan
	F	p	shōtōkan	Oyama	shidōkan	kyokushin	Oyama	shidōkan	kyokushin	shidōkan	kyokushin	kyokushin
Neuroticism	4.80	0.001	0.001	0.000	0.003	0.001	0.686	0.716	0.936	0.443	0.7466	0.6569
Extraversion	2.71	0.033	0.311	0.004	0.323	0.835	0.055	0.979	0.420	0.052	0.0069	0.4351
Openness to experience	0.49	0.745	0.950	0.603	0.787	0.430	0.647	0.835	0.394	0.803	0.1915	0.2899
Agreeableness	1.14	0.341	0.835	0.532	0.181	0.746	0.405	0.258	0.595	0.051	0.7636	0.0973
Conscientiousness	0.61	0.654	0.176	0.189	0.314	0.287	0.969	0.727	0.771	0.756	0.8009	0.9536

Table 8. Variance analysis of results of the big five NEO-FFI scales obtained by karate athletes practising kumite style (each group consisted of 30 people).

NEO-FFI Variable	Mean SD		Variance analysis			
	KKC (n = 23)	KM (n =127)	t-test	p	variance ratio test (F-test)	p
Neuroticism	4.39 ±2.190	15.06 ±5.883	−8.572	0.0000	7.220	0.0000
Extraversion	34.22 ±3.753	30.75 ±5.096	3.112	0.0022	1.843	0.0977
Openness to experience	28.30 ±6.413	26.31 ±6.084	1.431	0.1545	1.111	0.6876
Agreeableness	33.22 ±5.776	28.79 ±5.289	3.638	0.0004	1.192	0.5325
Conscientiousness	41.26 ±4.505	34.65 ±6.432	4.715	0.0000	2.039	0.0551

sports training. There is sufficient empirical evidence that S-Index and F-Index (i.a. the percentage of fights won relative to all fights conducted by given subject) correlate lowly with results of recommended motor tests [49, 62-65, 68, 69]. At the initial stage of training (before trainees learn fighting techniques typical of given combat sport or intervention techniques in the case of self-defence training TFVPs are mostly won by persons demonstrating talent for this activity (hand-to-hand-fighting). It is obvious that some gifted persons exhibit also very high fitness level and this has nothing to do with their motivation to undertake training of combat sports. Unique studies of Niedomagała [65] provided evidence that young judo athletes (a total of girls and boys), who won all TFVPs (F-Index 100%) in 5-person, 4-person, 3-person testing groups, proved their high effectiveness more frequently during tournaments fighting in a three-year stage of preliminary judo training. Unfortunately, there is no empirical knowledge about the S-Index and F-Index relationship with scores achieved in psychological personality tests. This results in limited possibilities of broader interpretation not only of the results of our studies from the interdisciplinary perspective.

Furthermore, we distance ourselves from the paradigm of associating all study results concerning

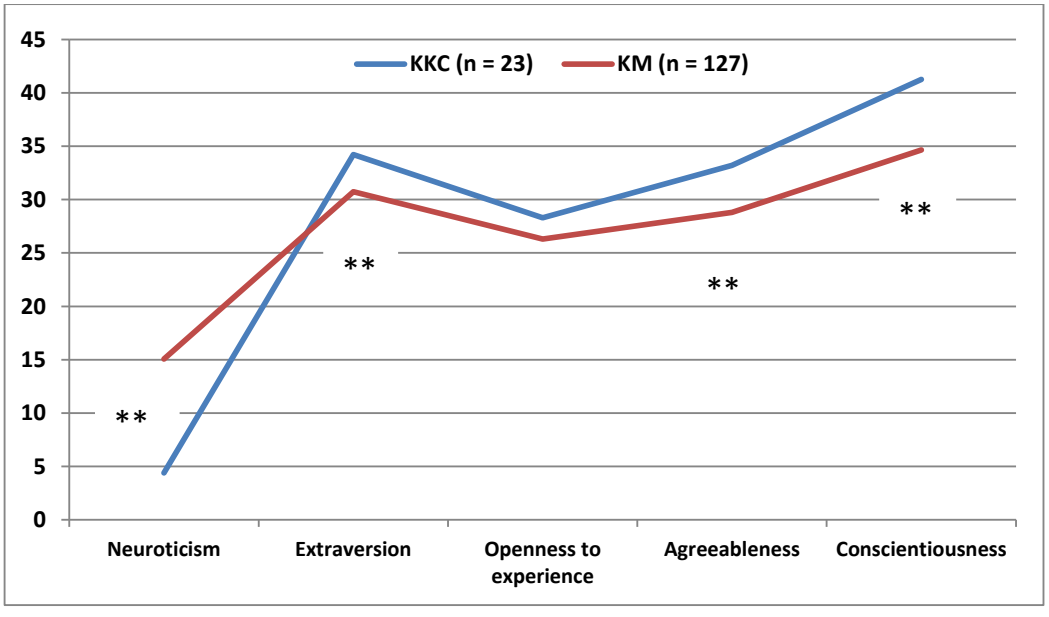

Figure 2. Personality profiles of gold medal winners of the World Karate Championships of kumite style (KKC) and other karate masters in kumite style (KM).

adaptive effects of long-term training of karate and other combat sports primarily with the possibility of achieving successes at the highest levels of competition for the longest possible period of professional sports career. There is a close association between health-related mission of combat sports and martial arts and not only as one of the most attractive "sports of life" with utilitarian values) and awareness of many pathologies that are also present in this type of physical activity. The need to overcome numerous barriers in promoting health-related values primarily of combat sports [70] is only apparently obvious but at the same time very difficult achieve in the world dominated by electronic media. Direct fight is such an attractive product that film careers of masters in karate and other combat sports are not surprising. However, we are concerned about the fact that combat sports athletes undertake a role of neogladiators and that is why we actively participate in the World Congress of Health and Martial Arts in Interdisciplinary Approach (so far organised twice: in 2015 and 2018).

CONCLUSIONS

The new empirical argumentation is an important premise for conducting in-depth personality studies on athletes at every stage of a sports career. Such knowledge combined with studies of other predispositions and adaptive effects (that are in relation to unique events determined by various types of sports) is a prerequisite for embodying social and health-related mission of sports in an optimal manner. Thus, the basic criterion for verification of theoretical foundations and activities related to training is both innovativeness of formulated rules for creating high quality of life (which cannot omit sports activity, including elements of combat sports) and the degree of compliance of these rules with applications.

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