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The result of "testing fights in a vertical posture" as a selection criterion for professional training of judo sport – prognostic value TFVP

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Abstract

Background & Study Aim: Judo, like many other sports, in the professional meaning can practice in two ways. For health, cognitive, utilitarian (as the art of self-defence) purposes and for satisfaction as the favourite "sport of life". The second dimension of professional is sports career. The aim of the study is an answer to two questions: whether young athletes, who won in the most "testing fights in a vertical posture" (TFVP) with peers starting practicing judo, at the same time most effectively settle the tournament fighting (TF) during the 3-years stage of preliminary training the judo? what part of the youths, which revealed the highest skills for practicing judo sports is giving further trainings up and in what period of the 4-years stage of preliminary training the judo of such events is the most frequently?

Material & Methods: In the study examined 997 boys and girls in age 7 to 13 years across the Poland (from 39 leading judo clubs), which began judo training in 2006. The study takes into account the results of 363 boys – those who competed in judo tournament from the club to international level. The results TFVP associated with TF.

Results: Young athletes which won groups during TFVP in competing groups of the five-, four- and three-person at the same time often proved high efficiency during TF. A very large diversity in the number of TF fought is a consequence of the effectiveness from one side (which is motivating to next starts), on the other hand, resignation from further trainings. The most effective in TF during the 3-years period had: 80 fights (98% of the effectiveness), 117 fights (75%), 75 fights (84%), 56 fights (79%), 45 fights (60%).

Conclusions: TFVP are a simple tool for predicting success in TF judo. Appropriate qualifying for juvenile judo athletes tournaments in the preliminary period of training judo can effectively reduce the negative tendency of resignation from trainings of a large number of students during the first year of training.

Key words: fun forms of martial arts • motor safety • non-apparatus test • theory of combat sports

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Negative cooperation – struggle characterized by non-compliance purposes (rivalry) [48].

Positive cooperation – interaction for compliance purposes [48].

Non-apparatus test – that motoric test (exercise endurance test) of the required reliability (accurate and reliable), which use does not require even the simplest instruments [49].

Motor safety – is consciousness of the person undertaking to solve a motor task or consciousness the subject who has the right to encourage and even enforce from this person that would perform the motor activity, who is able to do it without the risk of the loss of life, injuries or other adverse health effects [50].

Validation – the action of checking or proving the validity or accuracy of something (*Oxford Dictionaries*).

Accuracy – the quality or state of being correct or precise (*Oxford Dictionaries*); **accuracy** in parts of methodological books is synonymous of **validity** (degree to which a test or instrument measures what it purports to measure; can be categorized as *logical, content, criterion, or construct validity* [51, p. 193]), whereas **validity** (relevance) include **accuracy** and **reliability**.

Introduction

In theory of sport, it is assumed that sports selection consist of complex organisational and methodical interactions, whose aim is to reveal predispositions and talents of young people related to various sports disciplines [1-3]. For example, Płatonow [4] distinguishes talent that is a combination of different skills which determine the highest level of sports mastery.

Kalina et al. [5] emphasise two important issues related to knowledge about practice of combat sports: (1) there are well-documented general and specific adaptive effects arising from biological, mental and motor features of women and men with long-term experience in training, who numerously participated in sports competition at the highest international level; (2) however, there is relatively small amount of scientific recommendations about relevant criteria to reveal talents of young people related to combat sports, including judo.

Due to the fact that this is one of the most important elements used to anticipate long-term, effective sports career of very young athletes, it seems justifiable that outstanding judo coaches and scientists cooperating with them are not eager to publicise the most important criteria, according to which they select most talented youth. The rankings of Olympic champions and world champions in judo confirm the fact that talent is a factor of prime importance. Although its top places are occupied by Japanese, and selection in based on the opportunity to experience judo by every Japanese child [6-8], also representatives from numerous countries in Europe, Asia, America, Australia and Oceania achieve the highest Olympic mastery (e.g. period of 1992-2004 analysed by Błach [9, p. 17-23). On the other hand, in some countries the number of people who train judo does not exceed several thousand people.

A thesis on reluctance to publicize knowledge about criteria for accurate selection of youth to judo by specialists may be justified on the basis of three, in my opinion, important observations. Firstly, methodical textbooks describing both basic techniques of judo fight in vertical and horizontal posture as well as sophisticated ways of fighting, and thus fakes, combinations, etc., are available throughout the world. Visualisation is in turn available at numerous internet websites and on electronic media. Secondly, specific laboratory tests and the so-called field tests can be used to evaluate exercise capacity of people practising judo [10-16]. Thirdly, theoretical and methodical grounds of long-term judo training are described in many handbooks and scripts available worldwide.

Catching phase "judo without secrets" used in marketing (similar to "karate without secrets", etc.) may be however limited to the motor and exertion basics of sports judo. Mastery is determined by numerous factors which are difficult to identify and separate for scientific or educational purposes. Learning of the majority of basic and more complex motor forms used in judo and exceeding indicators for exercise capacity recommended for judo [3, 17, 18] does not guarantee the highest sport achievements. Perhaps, many judo coaches (especially those who conduct preliminary training) are not aware that the relationship "judo fighting technique – exercise capacity – highest sports mastery – social environment" is in fact much more complex and it is not possible to explain it only theoretically or focusing only on practice. Getting permanent interest of young judo adepts (art and at the same time combat sport), and leading the most talented ones to sports mastery adequate to their talent requires extraordinary competences from their coach (teacher). Perhaps, lack of these competences is the major reason why a very large number of children and youth resign from training already during the first few months of training. Neither on the basis of available empirical data (acc. to Yannakis [19] one-year judo training is completed by 5-10% persons) nor based on many years of experience in coaching, it is possible to accurately estimate which proportion is constituted by the most talented, potential champions at the highest level of judo competition.

Three factors dominated among reasons for undertaking trainings in judo clubs in Warsaw (Poland) by pupils aged 8-12: an opportunity to compete, domination in a group, successes of Polish athletes. Furthermore, the following factors were mentioned: desire to improve physical fitness and sense of security, learning of self-defence, willingness to achieve high sports results, ability to solve difficult problems, obtaining sports silhouette. Whereas an opportunity to participate in competition turned out to be the most important reasons standing behind continued trainings. Other important reasons were as follows: improved physical fitness, possibility of physical and mental development, implementation of sports lifestyle [20].

Hence, it may be concluded that young judo adepts are sufficiently motivated to competition consisting in numerous and direct fights with a competitor. On

the other hand, combat sports coaches believe that the most common reasons standing behind resignation from trainings of combat spots and martial arts are as follows: lack of rapid effects arising out of training (technical and sports) (31.3%), too great training load (26.6%), change of interest (25%), health problems (23.4%), lack of time, regularity and perseverance (21.9%). Lack of authority of the coach/instructor is indicated only by 15.6% of respondents. 14% of them pointed to low qualifications of a coach, whereas 12.5% of them believe that it is caused by failure to meet own expectations and needs [21].

Juxtaposition of these results shows an elementary contradiction of both opinions: it is unlikely that youth who are strongly motivated to compete in form of hand-to-hand combat and to learn self-defence insufficiently tolerated increased physical exertion, quickly changed their interests and prematurely resigned from possible physical and mental development, but at the same time they would turn out to be critical of teachers' competence to such a low extent.

Numerous of these premises, which were not discussed in detail due to necessity, constituted the factual basis for Kalina, who creased a method used to assess talents for effective fight consisting in a direct competition with another person – "testing fights in a vertical posture" TFVP. Verification conducted by numerous research teams (including authors of doctoral theses, master's theses and bachelor's theses) led by the creator of TFVP confirms the reliability and accuracy required for such tools [5, 22]. The authors of the secondary validation conclude that final argument stating the TFVP measures talent for fights in a vertical posture will involve positive verification of the following hypothesis: "persons who win in accordance with TFVP, achieve successes in combat sports, if effects of professional training may compensate to some extent for shortages in talent" [22, p. 179].

The aim of the study is to provide an answer to the following two questions: whether young athletes, who won most "testing fights in a vertical posture" (TFVP) with their peers who start practising judo, at the same time most effectively settle the tournament fighting (TF) during the 3-year stage of preliminary judo training; what proportion of the youth, who revealed the highest skills for practising judo sports, resigns from further trainings and in what period of the 4-year stage of preliminary judo training such events take place most frequently?

Material and methods

Participants

The study included Polish youth aged 7-13, who began to practice judo in 2006. Surveys were conducted in September and October, no later than three weeks since training groups were established in 39 leading judo clubs and sports sections throughout Poland. It total, the study involved 997 people. This articles refers to the results provided by 490 persons (113 girls and 363 boys).

Further observations involved documenting the results of tournament fighting (TF) only of those athletes, who started in judo competition from club to international level. This article analyses the results in the first three years of judo training – initial training stage [17].

The research project received a positive acceptance of the Bioethics Committee of the Regional Medical Chamber in Rzeszow (Poland).

Assessment of general fitness

Immediately before TFVP, the persons surveyed performed four trials from ICSPFT (International Committee on the Standardisation of Physical Fitness Test [23]): *standing broad jump* (result: jump length in cm), *bent arm hang* – chin over the bar in seconds (girls from all age groups and boys aged below 11, whereas the older ones performed *pull-up*; *sit ups* result: number of sit-ups performed in 30 seconds); *4x10 m shuttle run* (result: the time from the start, in which the second block is placed in a semi-circle, measured with an accuracy of 1/10 second).Tables and figures contain corresponding abbreviations of those names: *jump*; *hang* (girls) – *pull-up* (boys), *sit-up*, *run*.

The result in overall analysis is presented in points (on a scale 0 to 100), regardless of sex and age group – the sum of points obtained during four trials (ICSPFT in tables and figures). Classification standards for three levels of physical fitness (adopted arbitrarily, based on criteria provided by Maslinski et al. [24] for 8 trials – the result divided by 2), are as follows: high fitness: 241 points and more; moderate fitness: from 160 to 240 points; low fitness: 159 points and less.

The effectiveness of fights in a vertical posture

The criterion is the result of "testing fights in a vertical posture" (TFVP) in the correct version (*four sumo*

fights according to the simplified formula, in the system of "everybody with everybody else" [5]) based on general TFVP indicators (fights won, the F-Index).

Statistical analysis

Statistical analysis was based on estimation of empirical variables. Arithmetic means, standard deviations, range (minimum and maximum values) were calculated along with the range of indicators of empirical variables analysed. Presentation of results consists only of visualisation of empirical data most significant due to the assumed cognitive goal of the study.

Results

Specificity of recruitment to judo training groups in Poland

Most training groups, in which Polish youth start to train judo, are greatly diverse in terms of age. Furthermore, they are not divided by sex. In extreme cases, the age range among candidates amount to 7-11 years or 9-13 years. Therefore, it was so difficult to establish 5- and 4-person TG. Significant diversity of the youth in terms of body weight is on the other hand a desired phenomenon, because sports competition of seniors (men and women) takes place in judo within

Table 1. Results ICSPFT (in points) Polish boys (n = 363) qualified for judo training in 2006 years.

Variable		The number of boys of the same age						
empirical	**statistic**	**7 (n = 24)**	**8 (n = 55)**	**9 (n =79)**	**10 (n = 79)**	**11 (n = 61)**	**12 (n = 35)**	**13 (n = 30)**
body mass (kg)	M	**27.08**	**29.47**	**34.85**	**37.12**	**38.87**	**42.17**	**50.43**
	SD	4.09	4.58	7.17	7.17	7.72	8.23	9.70
	max	33.80	43.00	61.00	53.00	60.00	59.00	79.00
	min	20.00	20.00	25.00	25.00	23.00	26.00	36.00
jump (points)	M	**56.00**	**55.09**	**56.81**	**55.47**	**54.08**	**55.06**	**53.97**
	SD	8.29	8.30	9.94	9.94	8.46	10.28	10.95
	max	75.00	79.00	81.00	90.00	72.00	76.00	74.00
	min	45.00	40.00	33.00	26.00	33.00	39.00	32.00
hang/ pull-up (points)	M	**47.88**	**50.69**	**46.03**	**45.09**	**46.75**	**50.66**	**47.87**
	SD	7.61	10.26	13.13	13.49	13.50	13.45	9.67
	max	72.00	80.00	77.00	80.00	71.00	80.00	58.00
	min	38.00	31.00	26.00	24.00	22.00	4.00	6.00
run (points)	M	**54.08**	**57.29**	**57.11**	**56.10**	**52.02**	**54.46**	**49.83**
	SD	6.49	10.56	10.84	9.80	13.08	11.85	12.04
	max	69.00	83.00	79.00	72.00	73.00	74.00	66.00
	min	42.00	35.00	25.00	19.00	2.00	17.00	11.00
sit-up (points)	M	**56.08**	**54.71**	**54.23**	**51.75**	**54.72**	**55.71**	**58.90**
	SD	7.38	8.45	8.75	9.81	9.17	11.26	12.58
	max	74.00	82.00	82.00	80.00	76.00	80.00	94.00
	min	42.00	40.00	36.00	28.00	38.00	35.00	40.00
ICSPFT (points)	M	**214.04**	**217.78**	**214.18**	**208.41**	**207.57**	**215.89**	**210.57**
	SD	21.48	24.12	32.84	29.24	30.53	34.83	31.12
	max	282.00	297.00	277.00	277.00	261.00	280.00	281.00
	min	185.00	173.00	142.00	145.00	111.00	104.00	130.00

Legend: **M** arithmetic mean; **SD** standard deviation

7 weight categories. As far as girls are concerned, the ones aged 11, 10 and 12 constituted the largest group (Table 1). In turn, boys aged 9, 10 and 11 were most represented (Table 2).

General fitness

Average sum of points from 4 ICSPFT trials of girls ranges from 220.8 (girls aged 10) and 232.5 (girls aged 7) – moderate fitness – thus, from 55.2% and 58.12% of possible maximum result (Table 1). Comparison of these results obtained during each trial to standardized norm average for Polish population (50 points) means that they on average have greater abilities related to force and speed than their peers by 5.2% to 8.12%. The lowest diversity was found in a group of 8-year-olds (±19.16 points), whereas the highest one was noted among girls aged 13 (±27.07 points).

Boys showed lower motor potential than girls – but also moderate fitness (Table 2). The average sum of ICSPFT points obtained by boys aged 11 ranges between 207.57 points (±30.52) and 217.78 points (±24.11) of boys aged 8. They show higher dispersion

Table 2. Results ICSPFT (in points) Polish girls (n = 113) qualified for judo training in 2006 years.

Variable		The number of girls of the same age						
empirical	statistic	7 (n = 2)	8 (n = 12)	9 (n =14)	10 (n = 25)	11 (n = 31)	12 (n = 19)	13 (n = 10)
body mass (kg)	x	**24.00**	**29.73**	**35.37**	**35.56**	**38.89**	**42.16**	**49.00**
	SD	1.41	10.21	7.04	6.98	7.24	7.62	7.50
	max	25.00	59.00	51.00	52.00	55.00	60.00	64.00
	min	23.00	23.00	28.90	23.00	27.00	30.00	40.00
jump (points)	x	**59.50**	**61.25**	**58.71**	**53.72**	**53.87**	**54.00**	**54.60**
	SD	4.95	6.38	10.75	8.29	7.40	11.74	12.46
	max	63.00	74.00	72.00	74.00	66.00	73.00	70.00
	min	56.00	52.00	39.00	42.00	39.00	38.00	36.00
hang (points)	x	**54.00**	**55.17**	**55.29**	**56.40**	**58.65**	**61.32**	**56.00**
	SD	1.41	7.91	7.84	7.28	9.73	7.36	9.61
	max	55.00	73.00	72.00	73.00	80.00	76.00	78.00
	min	53.00	47.00	42.00	46.00	31.00	48.00	46.00
run (points)	x	**54.00**	**55.00**	**62.29**	**56.24**	**54.58**	**55.16**	**54.70**
	SD	9.90	11.27	9.20	10.52	13.87	5.85	6.85
	max	61.00	70.00	74.00	70.00	77.00	65.00	63.00
	min	47.00	36.00	45.00	30.00	7.00	41.00	41.00
sit-up (points)	x	**65.00**	**57.58**	**54.21**	**54.44**	**57.39**	**57.37**	**63.50**
	SD	8.49	9.61	7.61	7.02	7.99	11.39	12.34
	max	71.00	73.00	67.00	65.00	74.00	84.00	80.00
	min	59.00	44.00	35.00	40.00	44.00	44.00	41.00
ICSPFT (points)	x	**232.50**	**229.00**	**230.50**	**220.80**	**224.48**	**227.84**	**228.80**
	SD	21.92	19.16	23.00	21.66	23.02	23.12	27.08
	max	248.00	252.00	258.00	265.00	256.00	273.00	290.00
	min	217.00	197.00	170.00	175.00	171.00	202.00	200.00

Legend: **M** arithmetic mean; **SD** standard deviation

of results than girls – the lowest one amounts to ±21.47 and the highest to ±34.83. Boys obtained least diverse results in *standing broad jump* (53.96-56.81 points), thus the range amounts to 2.85 points (Table 2, Figure 1). Other trials are so diverse only in terms of range of results: *hang* or *pull-up* (45.08-50.69 points); *4x10 m shuttle run* (49.83-57.29 points); sit-*ups* (51.74-58.9 points).

Prognostic value of TFVP – convergence of the F-Index with the TF-Index

Young judo athletes (a total of girls and boys), who won during TFVP in 5-person, 4-person, 3-person TG, proved their high effectiveness more frequently during TF in a three-year stage of preliminary judo training (Figures 2-4).

Highest effectiveness during tournament fights (mean F-Index of 75%) was showed by 11 young judokas, who won TFVP in 5-person TG, i.e. they fought 4 fights each (Figure 2). High effectiveness during TF was also showed by athletes, who in 4-person TG were classified as second ones (Figure 3). Athletes classified at third place in TG (TFVP) have won from 33% to 61% of TF (Figure 4). The leaders of TFVP ranking in 4-person TG were not able to win in half of the tournament fights (effectiveness of 47%). Young people classified at fifth and fourth places in terms of FVP effectiveness were able to win in 32-48% of TF.

Very large diversification in terms of number of TF fought on one side derives from effectiveness, referred to in the theory of sport as a "start" one, whereas on the other it stems from resignation from further training. Athletes who were most effective in TF during three-year stage of preliminary judo training fought 80 fights (98% effectiveness), 117 fights (75% wins), 75 fights (84% effectiveness), 56 fights (79% wins), 45 fights (60% effectiveness).

The F-Index of 100% was showed by 10 young judo athletes among those competing in 5-person and 4-person TG. In the case of 5-person TG, it was calculated for 7 persons, who fought from 1 to 18 TF. As far as 4-person TG is concerned, the F-Index is calculated for 3 judokas, who fought from 2 to 6 TF. This constitutes a direct proof that numerous talented young judokas very early resign from practising this sport for some reasons.

Only the majority of leaders in 4-person TG (a difference in body weight did not exceed 3 kg) in ICSPFT ranking (63%) won at the same time TFVP competition. In 5-person TG there were only 50% of ICSPFT leaders and in 3-person TG – only 43%. As far as 3-person TG is concerned, the athletes who were classified at second position in ICSPFT ranking most frequently (48% athletes) won in the TFVP effectiveness ranking. Persons classified at third position

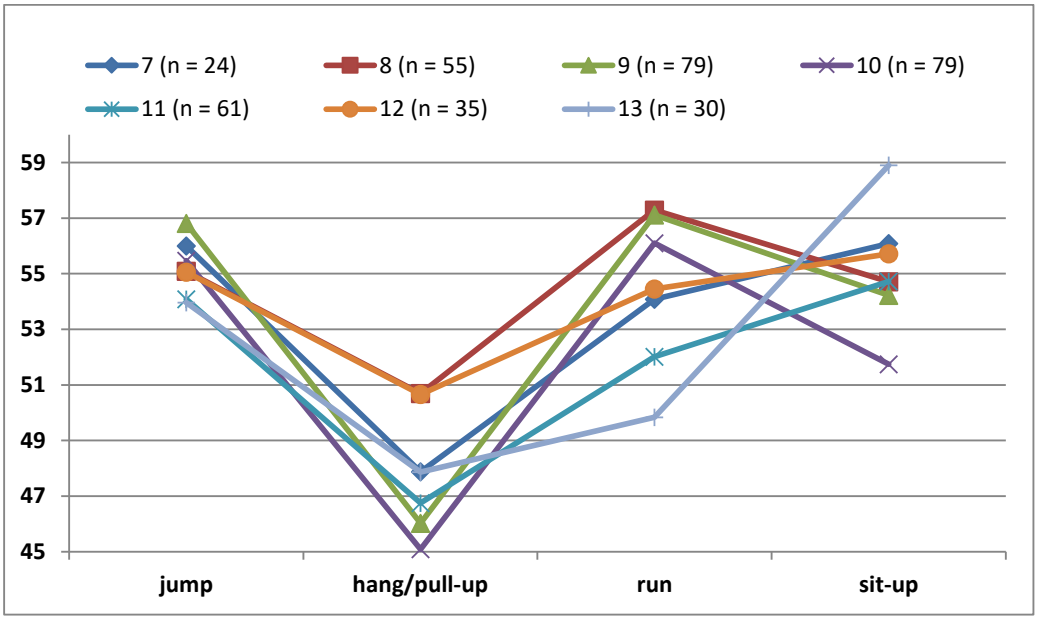

Figure 1. Differentiation of Polish boys (n = 363, qualified for judo training in 2006 years) by general fitness measured ICSPFT 4 trial.

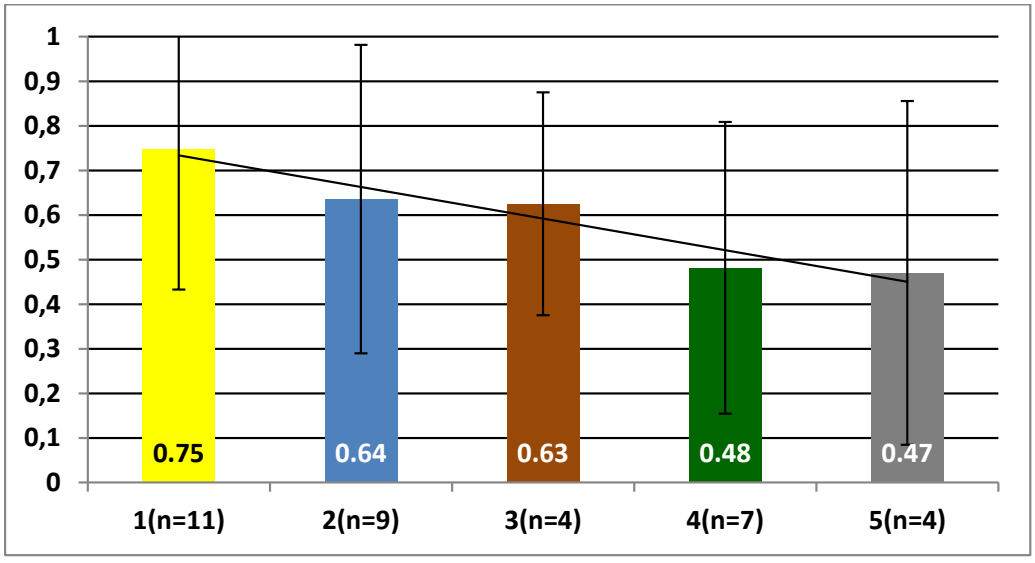

Figure 2. The relationship between the place in the 5-persone TG in 2006 and TF-Index (in scale 0 to 1) in the three years preliminary training of juvenile Polish judo athletes (n = 35).

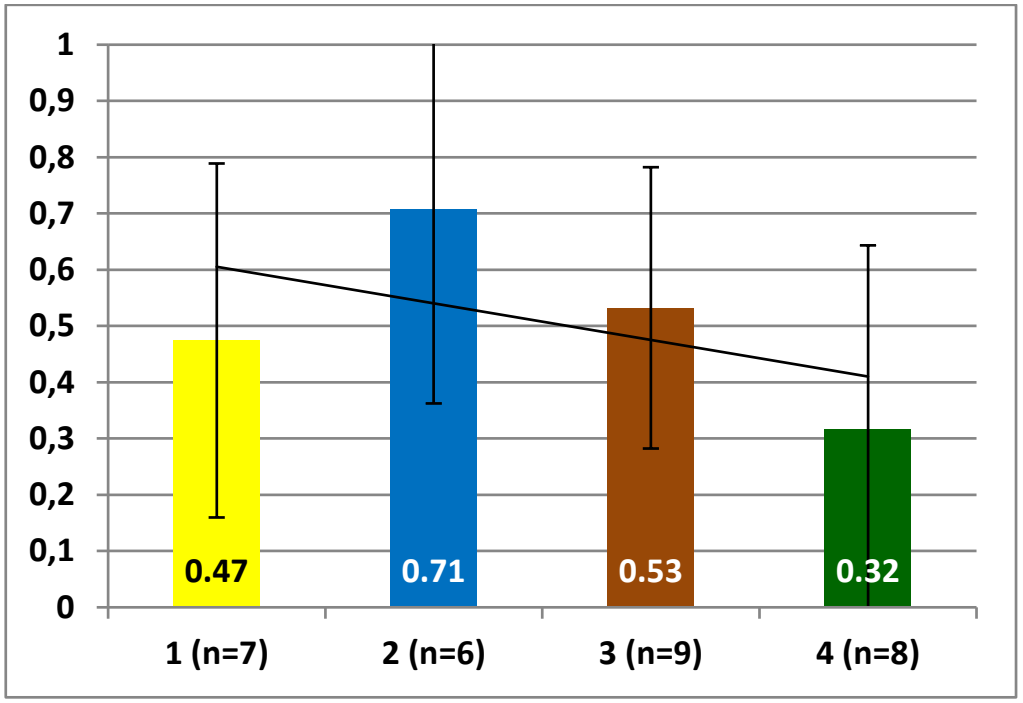

Figure 3. The relationship between the place in the 4-persone TG in 2006 and TF-Index (in scale 0 to 1) in the three years preliminary training stage of juvenile Polish judo athletes (n = 30).

constituted only 9% of that number. In 5-person TG, athletes classified at third position in terms of motor potential won TFVP competition. However, no athlete who was at 4th or 5th position in ICSPFT ranking won this competition. One third of them holds second place in TFVP competition.

As far as girls who differ in 1kg of body weight are concerned, in 3-person TG only 36% ICSPFT leaders won in TFVP classification, but as much as 25% of girls who were third in ICSPFT ranking. Girls who occupied third place in the ICSPFT ranking dominated in 4-person TG (60% of them won TFVP competitions, but only most efficient in terms of a total

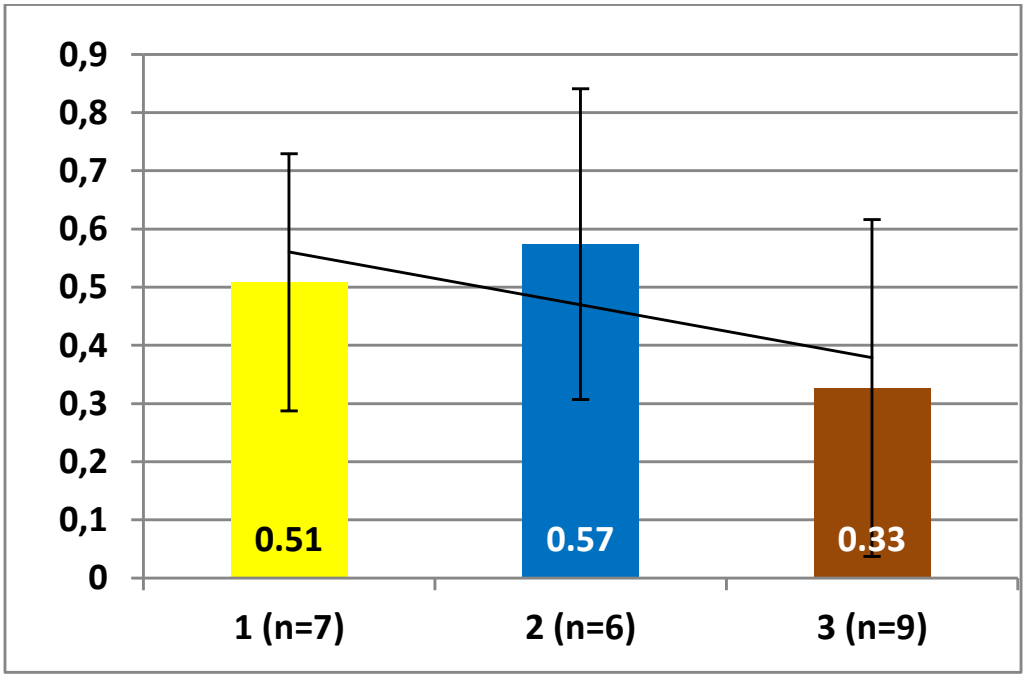

Figure 4. The relationship between the place in the 3-persone TG in 2006 and TF-Index (in scale 0 to 1) in the three years preliminary training of juvenile Polish judo athletes (n = 22).

results obtained during ICSPFT trials. In 5-person TG, there are no clear preference for general fitness. The characteristic that 20% of girls occupying each place of the general fitness ranking won the TFVP competition.

Discussion

Even the most general synthesis of observations of young judo athletes presented in this paper from the selection process though preliminary training [17] allows us to conclude that TFVP meets the prognostic criteria. Hence, together with the results of secondary validation (reliability [5] and accuracy [22]), empirical data published are a scientific argumentation which proves that "testing fights in a vertical posture" is a tool which measures talent for combat sports and self-defence as well as positively verities the result of pilot study [25]. This statement is true in relation to judo. Further verification should pertain to other combat sports, especially that each one starts from vertical posture and each one is a self-defence art [26]. As TFVP is highly correlated (r = 0.892 [25]) with TFHP (testing fights in a horizontal posture), the afore-mentioned conclusion seems also true in relation to Brazilian jiu-jitsu, in which a fight starts in vertical posture, but usually takes place for a longer time and ends in horizontal posture [27, 28].

One of the shortcomings of long-term sports training, not only of combat sports, includes lack of systemic monitoring of the most important and recommended indicators related to somatic, motor and mental dimension. This study provided direct knowledge about elementary somatic and motor indicators (in a general and specific sense) as well as indirect knowledge about mental features during observations of behaviours during TFVP. TG were mixed (consisted of boys and girls) in clubs throughout Poland, which recruited athletes for judo training according to the methodological criteria described in this article. Such TG were always established as a result of pressure exerted by girls and their parents (guardians). Most candidates were boys and often it was not possible to create a pair of girls („one against one") with a difference in body weight, which would not exceed 5 kg. These observations are in a sense confirmed by the results of studies conducted by Grzegorz Włoch [20], according to which most pupils aged 8-12 were motivated to start judo trainings by a possibility of competing.

However, this article analyses the results obtained by 48% of the youth, who in autumn 2006 commenced judo trainings, and in 2009 only 18% of them still participated in TF. This means that after three years of training nearly 9% of 997 participants in TFVP

continued to train judo. This result is more optimistic than observations of Yannakis [19] published in 1996, according to which only 5-10% of pupils complete their yearly judo training. One of the surprising (in a negative sense) results on these studies involve difficulties in determining the number of persons who continue judo training for health reasons and as self-defence.

The advantage of the scant available results obtained during observation of motor potential of young judo athletes in Poland is the fact that researchers apply either all ICSPFT trials [14, 18, 29-31] or limit themselves to 4 or 3 trials [25]. Boys aged 11-12, who start to train judo in Poland in 2006, have greater skills than boys in the same age from Wroclaw (Poland), who do not practice any sport (result in parentheses) – data published in 2015 [24]: *jump* 54.08-55.06 points (53.73); *hang/pull-up* 46.75-50.66 points (39.27); *sit-up* 54.72-55.71 points (53.68), whereas in contrast *run* (56.50) 52.02-54.46 points. Boys aged 11-12 who have been training judo for 4 years [24] had greater average results during each trial (respectively) than boys examined in this survey: 67.50-, 54.27-; 67.55-, 61.03 points. Thus, such positive effect on general fitness may be anticipated only in those boys included in this study, who continued to train in 2010. How many of them continue to train and with what sports and/or health effects – this remains an open question.

The results of cross-sectional studies of general fitness (measured in 8 ICSPFT trial) and morphological development of Polish judo athletes aged 11-17 conducted by Jagiełło et al. [18, 29-31], which are compared with their peers who do not practice sport, provide empirical proofs that judo has exceptionally stimulating effect. However, there are few studies [32] which inform about the dynamics of the morphological development in adolescents under influence of judo training, which were repeated on the same groups of athletes – from the youngest to the oldest and those with the longest training experience.

TFHP used in evaluation belongs to the category of non-apparatus tests and has only apparent relation with negative cooperation. Mixed aspect (also positive cooperation) appears when TFHP is analysed from the perspective of self-defence, as a tool to measure self-defence skills as part of SPHSA (the profile of sense of positive health and survival abilities [33-36]). In such application, TFHP substantially differs from simulation motor tests, which imitate a threat of physical aggression [37-39] or are typical for e.g. rescue actions performed by fire fighters [40]. Techniques applied in sumo fights are directly applied in numerous situations which involve necessary intervention and self-defence. All categories of motor tests listed are directly related with the concern for the motor safety.

TFHP in daily training practice is one of the most attractive fun forms of martial arts [41]. On one hand, as a repeated Polish champion in judo kata, and on the other as an active judo coach, I have long-term internal experience which also arises from observation of behaviours exhibited by young judo athletes during formal exercises and fun forms. Involvement of emotional and mental sphere in both types of exercise is incomparable. Fun forms of judo are popular in France [42]. In Poland, the programme of combat sports propaedeutics – basics of judo [43] derives in fact from experiences close to practice of judo and wrestling (in vertical and horizontal posture). Programmes such as *TKD Tigers – Total Kids Defence*, *Taekwondo Tigers*, *etc.* are also popular in many countries.

Broadly understood fun forms of martial arts (FFMA) are an attractive alternative to the formal rigour of combat sports (sporting achievements are the main criterion for verifying the effectiveness of training), because the mission of FFMA is to keep people, who identify physical activity with health and survival abilities, in training rooms. This broad possibility of making a person active, caring for development of all dimensions of health and survival abilities falls within promoted agonology (science about struggle) in prophylactic and therapeutic dimensions [44-46]. This is the fundamental reason that this article repeatedly quotes publications of RM Kalina, the last living co-creator of agonology (the author of the theory of defence struggle [47] and the theory of combat sports [24] as well as numerous diagnostic and therapeutic tools).

Conclusions

TFVP are a simple tool for predicting success in TF judo. Appropriate qualifying for juvenile judo athletes tournaments in the preliminary period of training judo can effectively reduce the negative tendency of resignation from trainings of a large number of students during the first year of training.

Competing interests

The authors declare that they have no competing interests.

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