

## MOTIVATIONAL FUNCTIONS OF OBJECTIVES FOR FEMALE PARTICIPATION IN COMBAT SPORTS, MARTIAL ARTS AND FITNESS TRAINING

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### Abstract

The purpose of the study was to determine the motivational functions of objectives for female participation in boxing (B), karate (K), Brazilian jiu jitsu (BJJ), muay thai (MT), and fitness (F) activities. It was assumed that the aims of female physical activity and the motivational functions of these aims were different depending on the type of sport. The study comprised 254 women aged from 15 to 35 years, mostly from the north-western part of Poland. The authors used the standardized Inventory of Physical Activity Objectives (IPAQ) and the survey questionnaire. The research results prove that the most important goals for practicing B, K, BJJ, MT, and F included physical fitness, well-being, and pleasure from physical activity, followed by health. Female subjects participating in B, K, BJJ, MT and F were found to have significant ( $p \leq 0.05$ ) correlations of the aims between physical fitness and pleasure from physical activity and fulfilling the need for physical activity as well as between finding recognition in the eyes of other people and being fit. For women practicing B and K, these goals usually involved fulfilling the need for exercise, for those doing K, BJJ and MT – promoting this sport, and for K practitioners – well-being and the company of others. No differences were observed in the scales determining the motivational functions of objectives for participation in combat sports, martial arts and fitness training. Interestingly, motivational values and better organization of time increased with the training experience of females. These results were supported by the effect size ( $rg = -0.5$ ). Understanding the reasons for any kind of women's physical activity may have an impact on more effective promotion of exercise.

**Key words:** motivation; women; training experience; combat sports; martial arts and fitness

### Introduction

Physical activity of Polish women, consisting in regular participation in exercises, is still low and amounts to ca. 7%. In the light of research (Special Eurobarometer 412, Report, 2014), 26.6% of women have fitness skills and only 3.5% are reported to have skills for combat sports and martial arts. Women undertaking physical activity (sport or recreation) are usually guided by the following motives: improving health (63%), enhancing physical condition (39%), relaxing (35%), entertainment (27%), weight control (25%), concern for one's appearance and shapely silhouette (24%), improving physical fitness (22%), and the opportunity to meet friends (17%). The improvement of health turned out to be most important for all women, regardless of age, similarly to enhancing physical condition (but to a lesser extent). The 2013 research suggested an increased importance of physical appearance and entertainment as the reasons for physical activity, in comparison with 2009 (Sport and physical activity, Special Eurobarometer 412, Report, 2014). This is confirmed by the study results (Nowak F.P, 2012). Women who participate in fitness training find health, physical condition and concern for their

appearance to be the most important motives. The importance of health-related motives grows with age, but it tends to decrease among people with post-secondary education in favor of aesthetic reasons and concern about one's shape.

Some studies indicate that combat sports and martial arts are popular and fast-growing sport disciplines (Bu, Haijun, Yong, Chaohui, Xiaojuan, Singh, 2010). Analyses based on the representative sample of Polish respondents show that, out of 12 405 individuals, only 124 (1%) of them declared participating in these sports (Biernat, Krzepota, Sadowska, 2018). The key motivation to practice combat sports and martial arts was pleasure (62.1%), followed by keeping fit, good health, and slim figure (21.8%). The motivation for staying healthy or observing a doctor's recommendations concerned only 7.3% of respondents from this group, whereas meeting friends concerned 4.0%. No significant differences in terms of gender were noticed. Establishing differences in motivations by gender is relatively difficult due to a smaller number of females practicing these sports. Kostorz (2013) reports that internal motivation towards sport achievements prevailed among karate practitioners

(110 individuals including 30 females). Gender had no impact on the levels of individual types of motivation. Intrinsic motivation based on personal interests and individual needs of improvement and development, also turned out to be most important for MMA (n=23) and boxing (n=26) fighters (Kuśnierz 2017). Witkowski, Cynarski, and Błażejowski (2013) found that the differences in types of motivation are connected with the aims of training resulting from the choice of disciplines, based on the direct clash of two competitors (combat sports) or rivalry typical of martial arts. Motivation to undertake combat sports and martial arts training evolves during subsequent years (Jakhel, Pieter, 2013). The studies included 9189 male and female beginners aged 15 to 22 years, from Slovenia, Germany, Luxemburg, and the Czech Republic. Analyses covering the 1970-1999 period show a significant increase in interest in practicing karate and deciding on this sport among women. There have been identified four main motivational dimensions: physiological, mental, spiritual, and fighting skills. Within the period of 30 years, physiological motives increased (from 27.0% to 36.6%), mental aspects remained at a similar level, spiritual motives decreased (from 52.3% to 19.8%), and fighting skills increased almost five times (from 6.2% to 28.5%). It appears that over the following years, beginners attributed much less abstract content to karate and their expectations focused more on the sport and training aspects. Moreover, the growing number of female beginners suggests that karate is perceived as any other sport. The results seem to support the overall trend of changes which is becoming less limited to Japanese traditions, developing as a global sport (Jakhel, Pieter, 2013).

Changing problems of everyday life affect motivation for numerous human activities. They also have an impact on motivation for exercise, which requires permanent diagnosing and searching for methods of enhancing social involvement in this activity. Practicing sport involves the achievement of an objective by an individual. Goals play a motivational function if they are significant and if it is certain that they will be achieved when specific actions are taken. The aim refers to the future achievable condition which "...has a value and regulatory power, and is pursued by an individual through their actions" (Zaleski 1991, p. 60).

The purpose of the study was to determine the motivational functions of objectives for female participation in boxing (B), karate (K), Brazilian jiu jitsu (BJJ), muay thai (MT), and fitness (F) activities.

As a hypothesis it was assumed that the goals for physical activity and motivational functions of these goals vary for women practicing combat sports and martial arts and women practicing fitness training.

## Materials

The study comprised 254 women practicing boxing (B), karate (K), Brazilian jiu jitsu (BJJ), muay thai (Thai boxing) (MT), and fitness (F) training in the territory of the following voivodeships: Zachodniopomorskie, Lubuskie, Kujawsko-Pomorskie. Female subjects practicing boxing came from all over Poland. The ages of respondents ranged from 15 to 35 years old (y.o.) (average age of  $22.91 \pm 5.26$  years), mostly unmarried (76.7%). The majority of them had secondary or post-secondary education (82%) and the remaining respondents were students. Women were characterized by good and very good evaluation of their financial situation (82.2%).

## Methods

There were used diagnostic survey methods, such as the authors' own questionnaire and the standardized Inventory of Physical Activity Objectives (IPAO) to determine motivational functions of the objective for physical activity (Lipowski, Zalewski, 2015). The research results prove that the most important goals for participating in B, K, BJJ, MT, and F included physical fitness, well-being, and pleasure from physical activity, followed by health. Based on the factor analysis (Cronbach alpha = 0.78) and the extent to which each of the given elements is consistent with the theory of the motivational function of one's goal, the following scales were determined: motivational value (extent to which the objective influences the actions undertaken by an individual), time management (level of concentration on organizing time for physical activity), persistence in action (efficiency, persistence in action, and the ability to handle adversities), motivational conflict (goals of physical activity versus other objectives). Each participant responded to 18 statements, expressing their opinions using the Likert scale from 1 to 5 (1 = "I definitely do not agree", to 5 = "I totally agree"). The Likert scale was also applied for the inventory of twelve objectives of physical activity (1 meant completely unimportant and 5 very important). IPAO also describes the multidimensional nature of the objectives. Raw scores were converted into sten scores (Lipowski, Ussorowska 2018).

Written informed consent was obtained from each subject included in the study. The study protocol was approved by the appropriate Ethics Committee of Kazimierz Wielki University No. KEBN 7/2018 and conformed to the ethical guidelines of the 1975 Declaration of Helsinki. Chairman of the Ethics Committee PhD Marek Napierafa.

## Statistical Analyzes

The relationships between individual motivations pointed out by women practicing K, B, BJJ, MT and F were defined by means of intra-group correlations. In qualitative analyses, the trait

frequency and the independence chi-square test were used. In addition, the authors applied the Kruskal-Wallis test by ranks or the analysis of variance (H test) and the U test in order to study the significance of differences between the scales of motivational values, time management, persistence in action, motivational conflict, and the multidimensional nature of the objectives for female participation in various sports with different training experience. The effect size was calculated for each test:  $E^2_R$  for the Kruskal-Wallis H test, Glass rank biserial correlation (rg) for the Mann-Whitney U test, and Cramér's V for the  $\chi^2$  test. The value of  $p \leq 0.05$  was assumed to be statistically significant. Statistical calculations were made with the Statistica for Windows 13.1 software (StatSoft Sp. z o.o., Cracow, Poland).

## Results

The age range of women was between 15 and 35 y.o. (**Table 1**). Most of them were aged under 25 (65%) except for BJJ practitioners who were over 25 y.o. (60%) ( $p=0.0000$  for  $\chi^2$ ). The majority of respondents were unmarried (76.7%) ( $p=0.0000$

for  $\chi^2$ ). Most of them had secondary or post-secondary education (82%). Women practicing B and K were usually during their education (23.5; 37.5%, respectively), whereas BJJ and MT participants usually had post-secondary education (58.2%; 53.1%, respectively) ( $p=0.0000$  for  $\chi^2$ ). All female subjects were characterized by state (good and very good) of their financial situation (82.2%). Respondents were still during their education (41.7%) or combined work and family responsibilities (18.5%). The largest number of students was in the group of K practitioners (73.2%) and those combining work and family responsibilities MT (34.4%). BJJ (58.1%) and F (46.2%) practitioners worked professionally (mental or physical work). Training experience of less than 5 years was mainly characteristic for women training MT (81.2%), K (71.5%) and F (69.2%). Women participating in B and BJJ activities had longer training experience (56.9%; 50.9%, accordingly) ( $p=0.0006$  for  $\chi^2$ ). The effect size for the investigated variables was similar to the average one.

**Table 1.** Social and demographic characteristic of people practicing B, K, BJJ, MT and F (independence  $\chi^2$  test, and Cramér's V).

Variables	Respondents (%)					Total (n=254)		p for $\chi^2$ Cramér's V
	B (n=72)	K (n=56)	BJJ (n=55)	MT n=32	F n=39	n	%	
Age:								
≤19	33.3	69.6	7.3	15.6	28.2	83	32.7	0.0000 0.2987
20-24	40.3	19.6	32.7	40.6	28.2	82	32.3	
25-29	19.5	7.1	34.5	21.9	23.1	53	20.8	
≥35	6.9	3.6	25.5	21.9	20.5	36	14.2	
Marital status:								
- unmarried	86.1	89.3	58.2	68.8	73.7	194	76.7	0.0000 0.2839
- married or concubinage	13.9	10.7	41.8	31.2	26.3	59	23.3	
Education:								
- pre-secondary	23.5	37.5	3.6	3.1	12.8	45	18.0	0.0000 0.2619
- secondary	44.1	35.7	38.2	43.8	48.7	104	41.6	
- post-secondary	32.4	26.8	58.2	53.1	38.5	101	40.4	
Financial situation:								
- very good	16.9	42.9	27.3	43.8	33.3	78	30.8	n. s.
- good	64.8	44.6	50.9	37.5	48.7	130	51.4	
- fair /satisfactory	18.3	12.5	21.8	18.7	18.0	45	17.8	
Type of occupation								
- pupils, students	47.2	73.2	14.6	28.1	35.9	106	41.7	-
- physical work	12.5	3.6	25.4	9.4	23.1	37	14.6	
- mental work	18.1	1.8	32.7	21.9	23.1	48	18.9	
- education and work	11.1	16.1	21.8	34.4	7.9	47	18.5	
- non-working	6.9	3.6	3.6	0.0	0.0	9	3.5	
- running own business	4.2	1.8	1.8	6.3	0.0	7	2.8	
Length of practicing sport:								
≤2 years	18.1	44.7	32.7	40.6	53.8	90	35.4	0.0006 0.2081
[2; 5)	25.0	26.8	16.4	40.6	15.4	61	24.0	
[5; 9)	29.2	8.9	21.8	6.2	15.4	46	18.1	
≥10 years	27.7	19.6	29.1	12.5	15.4	57	22.5	

The highest scores (on a Likert scale: 4 or 5 points) were given by respondents to the following objectives: physical fitness, well-being, pleasure from physical activity, followed by health. In the next place were: fulfilling the need for activity, managing stress, and having slim and shapely silhouette. The lowest scores concerned finding recognition in the eyes of other people and being fit and keeping up with fashion (**Table 2**).

**Table 2.** The most important goals for physical activity (%)

The most important objectives for doing sport	Sport disciplines (%)					Total		Place
	B n=72	K n=56	BJJ n=55	MT n=32	F n=39	n=254	%	
Physical Fitness	91.7	94.6	89.1	93.8	82.1	230	90.6	1
Well-being	83.3	89.3	92.7	100.0	87.2	227	89.4	2
Pleasure from Physical Activity	73.6	89.3	87.3	90.6	74.4	209	82.3	3
Good health	79.2	82.1	65.5	84.4	79.5	197	77.6	4
Fulfilling the Need for Physical Activity	77.8	78.6	78.2	81.3	61.5	193	76.0	5
Managing Stress	65.3	78.6	83.6	81.3	68.4	189	74.7	6
Slim Figure	72.2	75.0	61.8	87.5	69.2	183	72.1	7
Escape from Everyday Life	58.3	60.7	87.3	71.9	66.7	173	68.1	8
Company of Others	56.9	73.2	65.5	75.0	61.5	166	65.4	9
Promoting Physical Activity	65.3	57.1	50.9	65.6	43.6	145	57.1	10
Boosting Confidence	44.4	53.6	38.2	37.5	46.2	113	44.5	11
Being Fit, Keeping Up with Fashion	44.4	50.0	30.9	31.3	30.8	99	39.0	12

Correlations of the objectives related to physical activity for practitioners of B, K, BJJ, MT and F are presented in **Table 3**. Significant ( $0 \leq 0.05$ ) correlations were determined for all groups regarding the following goals: a) pleasure from physical activity and fulfilling the need for physical activity correlated with physical fitness, b) fulfilling the need for activity correlated with pleasure from physical activity, c) finding recognition in the eyes of others correlated with being fit. On the other hand, good health correlated with physical fitness in all respondents, except for MT fighters. Among practitioners of combat sports and martial arts (except for fitness), fulfilling the need for activity correlated with managing stress, whereas managing stress correlated with pleasure from exercise. Besides, promoting physical activity correlated with finding recognition in the eyes of others. Particular groups differed in the size of correlations: B-39; K-37; BJJ-25; MT-25; F-11. Among women practicing boxing, these goals were usually related to physical fitness and fulfilling the need for physical activity. For karate practitioners, they were associated with promoting karate by setting a good example, fulfilling the need for activity, well-being, and having the company of other people. The objectives for practicing BJJ related to promotion of this sport and physical fitness, whereas the goals that motivated subjects to do MT were connected with physical fitness and managing stress. The fewest significant correlations of objectives were observed in women engaged in fitness activities (11). Health correlated with physical fitness and well-being, physical fitness with pleasure from physical activity and satisfying the need for exercise; the company of others correlated with having a shapely figure and being fit; being fit correlated with finding recognition in the eyes of other people and with managing stress (negative correlation), and pleasure from activity related to fulfilling the need for activity. The goals for taking part in fitness activities included health, physical condition, social, esthetic, and psychic aspects. Some similarities were observed in correlations of motivations for undertaking K and BJJ in terms of promoting a chosen sport. Female respondents practicing karate indicated the company of other people which strongly correlated with other goals for doing sport.

**Table 3.** Indices of intra-group correlations of motivations for practicing B, K, BJJ, MT, (significant for  $p \leq 0.05$ )

Sport	Goals	2	3	4	5	6	7	8	9	10	11	12
Boxing	1	0.3566				0.2553			0.4586			0.3524
	2	-		0.3296	0.4873	0.2471		0.3492	0.2992	0.298	0.3875	0.3502
	3		-	0.271		0.4336	0.5037		0.2789			
	4			-	0.4698	0.3556		0.544			0.4171	
	5				-	0.3081		0.5949		0.2716	0.6659	
	6					-	0.5895	0.3303	0.3438		0.2996	0.4153
	7						-		0.3151			0.3244
	8							-	0.2319	0.4503	0.5334	0.3368
	9								-	0.4966	0.2722	0.2828
	10									-	0.5100	
	11										-	
	12											-
Karate	1	0.4938	0.2664									0.3747
	2	-	0.3386					0.5282			0.5298	0.2785

Sport	Goals	2	3	4	5	6	7	8	9	10	11	12	
	3		-	0.3335			0.3466	0.2948	0.3913	0.4411	0.4257		
	4			-			0.4461	0.2718				0.4227	
	5				-		0.313		0.3923	0.289	0.2921	0.3709	0.2719
	6					-		0.4075		0.3003			0.6323
	7							-		0.2642		0.297	0.4704
	8								-	0.5043	0.3765	0.5975	
	9									-	0.5078	0.5228	0.3157
	10										-	0.4767	0.4512
	11											-	0.3486
	12												-
	Brazilian jiu-jitsu	1	0.5519		0.4709		0.3776						0.346
		2	-	0.3142	0.5041	0.3017			0.3218			0.3405	
3			-			0.3791	0.2944					0.3806	
4				-		0.4969						0.4574	
5					-					0.4695			
6						-	0.6128					0.6405	
7							-					0.3793	
8								-	0.3256	0.2826	0.3601		
9									-	0.5247	0.3036		
10										-	0.3288		
11											-	0.2926	
12												-	
Muay thai (Thai boxing)	1				0.4378						0.4524		
	2				0.4203	0.3505		0.4815		0.4227	0.4761		
	3		-	0.448		0.4008				0.3922			
	4			-		0.6271	0.545		0.3729			0.3968	
	5				-				0.3998				
	6					-	0.4423		0.3918	0.4879			
	7						-		0.3689			0.3982	
	8							-		0.4563	0.8355		
	9								-	0.7006			
	10									-	0.4099		
	11										-	0.4462	
	12											-	
Fitness	1	0.324			0.5213								
	2	-						0.406			0.5686		
	3		-	0.4131		0.4335							
	4			-	0.5081	0.404							
	5				-								
	6					-	0.6747			-0.352			
	7						-						
	8							-			0.5595		
	9								-				
	10									-			
	11										-		
	12											-	

**Legend:** 1- health (normal: blood pressure, cholesterol level, body weight, etc.), 2- physical fitness, physical condition, 3 – company of others, 4 – shapely silhouette (beauty, sculpture and firmness of the body), 5 – well-being, 6 – being physically active (fit), keeping up with fashion, 7 – boosting confidence, finding recognition in the eyes of others, 8 – pleasure from physical activity, 9 – escape from everyday life, 10 – managing stress, 11 – fulfilling the need for exercise, 12 – promoting physical activity by setting a good example.

General differentiation regarding motivational functions of objectives for doing sport by women practicing B, K, BJJ, MT, F was not reported (test H (4, N=254). Female practitioners of combat sports, martial arts and fitness training did not differ in terms of motivational value ( $p=0.5484$ ), time management ( $p=0.6024$ ), persistence in action ( $p=0.3965$ ), motivational conflict ( $p=0.5864$ ), and multidimensional nature of objectives ( $p=0.1684$ ). An overall differentiation was observed in terms of motivational values and time management depending on the training experience of

respondents (**Table 4**). Comparison in pairs indicated higher motivational values among participants training for 5-9 years and 10 years and longer than those with the training experience of  $\leq 2$  years ( $p=0.0019$ ;  $p=0.0033$  for U test, respectively). Motivation was stronger in respondents with longer training experience (mean effect size was  $rg=-0.5$ ). Better time management characterized women who had been practicing sport for 10 years or longer when compared to those training  $\leq 2$  years ( $p=0.0039$  for U test;  $rg=-0.5$ ).

**Table 4.** Motivational functions of goals for physical activity depending on respondents' training experience (test H,  $E^2_R$ , test U, rg)

Specification	Rank means	Training experience in years	Values of p for U statistics			Glass rank biserial correlation (rg)		
			[2; 5)	[5; 9)	$\geq 10$ years	[2; 5)	[5; 9)	$\geq 10$ years
Motivational value H( 3, N= 254) =13,40655 $E^2_R=0.0530$ $p=0.0038^*$	105.5	$\leq 2$ years	0.0701	0.0019*	0.0033*	-0.4	-0.5	-0.5
	132.0	[2; 5)		0.5036	0.5992		-0.2	-0.2
	143.7	[5; 9)			0.7003			0.1
	140.0	$\geq 10$ years						
Time management H( 3, N= 254) =9,335115 $E^2_R=0.0369$ $p=0.0252^*$	110.5	$\leq 2$ years	0.0705	0.1487	0.0039*	-0.4	-0.2	-0.5
	136.1	[2; 5)		0.5921	0.5561		0.2	-0.2
	128.1	[5; 9)			0.1895			-0.3
	145.3	$\geq 10$ years						

\*statistically significant for  $p \leq 0.05$

## Discussion

The purpose of the study was to determine the objectives and motivational functions of the objectives for female participation in boxing (B), karate (K), Brazilian jiu jitsu (BJJ), muay thai (MT), and fitness (F) activities. It was assumed that the aims of physical activity and the motivational functions of these aims were different for women practicing combat sports and martial arts and for fitness participants. The research results show that the hypothesis was correct, but only with regard to some of the objectives.

Physical fitness, well-being and pleasure from physical activity were most valued in our studies. Health was in the next place. The fewest objectives described as very important or important concerned: Finding recognition in the eyes of others and being fit, and keeping up with fashion. Some research results suggest that the decisions about practicing combat sports and martial arts (regardless of gender) were motivated by improving one's health and achieving a high level of physical fitness (Sterkowicz-Przybycień, Przybycień 2005). Wróblewski (2013) reported that among the motivations for doing these sports hygiene and health-related factors could be found, but only in the case of few respondents these factors comprised the main motivation for undertaking this form of activity. Karate-dō ( $n=15$ ) practitioners preferred the self-realization style. Hedonic motivations were

least important. Most members of the Traditional Karate-Do Club of Lublin treated kinetic bodily experiences as a means of achieving greater spiritual satisfaction in pursuit to follow moral values. Health as the objective of doing sport was mentioned by all women involved in our study, but in a different order (from the third to seventh place). Health had a positive relationship with physical fitness (except for BJJ). These results are supported by sample surveys including a group of 72 sumo wrestlers. Half of them were world, European and Poland's national champions. It was found that dominating motivations for sumo wrestlers included opportunities to improve physical fitness and health (Nowak M, Kitowska, Rynkiewicz T, Piekarski, Rynkiewicz M, Żurek, 2010). The research of highly qualified karate practitioners showed that the main objective for practicing karate (by men) was high physical fitness, followed by pleasure from physical activity and well-being (Lipowski, Krokosz, Łada, Sliżik, Pasek, 2019). These results are consistent with ours.

A dozen or so years ago, Bógdał and Syska (2002) conducted a survey among 300 Polish karate practitioners. The most important motives for karate participation were as follows: a way of life (66%), opportunity to achieve success in sport (20%) and good health (12%). These motives changed with age and training experience of athletes. Health-related reasons were in the third place. In our research, health was ranked as the

fourth. Women practicing BJJ attached least importance to health (seventh place), however, they better valued well-being, physical fitness, pleasure, escape from everyday life, managing stress, and fulfilling the need for exercise.

A total of 307 martial art practitioners (Ko 2010) participated in the studies which showed that the most important motivation for training were: development of moral values (46%), self-esteem (44%), physical fitness (42%), self-defense (38%), self-fulfillment (36%), command of sports skills (30%), stress management (8%), and cultural awareness (7%). Regardless of the sport discipline (jūdō/jujitsu, aikidō/hapkido, kung fu/wushu, karate-dō, taekwondo), aesthetic reasons turned out to be meaningful for all participants.

It was revealed that fitness practitioners were more concentrated on their own appearance and development of their bodies, whereas athletes expected from sport competition, fitness, and pleasure (Ryan, Frederick, Lipes, Rubio & Sheldon, 1997; Ingledew, Markland, 2008).

Studies examining physical activity objectives (IPAO) showed that students of physiotherapy better valued health, physical fitness and condition in comparison with students of law (Jankowska, Krajewska-Kułak, Fiłon, 2018). In research using a different inventory of objectives, it was observed that the reasons for engaging in physical activity among adolescents and adults were different depending on the type of activity, age and gender of participants (Molanorouzi, Khoo, Morris, 2014).

In our studies regarding women, no differences between the scales determining the motivational functions of the aims of practicing combat sports, martial arts and fitness were observed. It can be concluded that women undertaking any physical activity are characterized by similar levels of motivation, time management, persistence in action and avoiding conflict situations that hinder exercise. Such differences were not found in research on students of physiotherapy and law at the University of Białystok as well (n=200 participants, 60% women) regarding motivational values, time management, persistence in action and motivational conflict. Authors applied the same method (IPAO) (Jankowska, Krajewska-Kułak, Fiłon, 2018). An overall differentiation was observed in terms of motivational values and time management depending on the training experience of respondents. Motivational values and time management for physical activity tended to increase with training experience. These results were supported by the mean effect size. Scales – persistence in action and motivational conflict did not differentiate respondents and were similar for all women. The evolution of motives for doing karate influenced by training experience (53% over 10 years) and age of respondents was reported in the study conducted by Bógdał and Syska (2002). Relationships between training experience and motivation for achievements were confirmed in research conducted on 243 footballers, amateurs participating in football events in the 2016/2017

season (İlimdar Yalçın, Fehmi Çalık, Fikret Ramazanoğlu, Ömer Faruk Tutar, 2017). Results obtained by Lipowski et al. (2019) concerning motivational functions of the objectives for practicing karate (especially in terms of time management and persistence in action) may indicate that despite the fact that participants were experienced karate athletes, regular trainings and contests did not comprise the most important factor on which they concentrated (Lipowski, Krokosz, Łada, Sliżik, Pasek, 2019).

The motivational system of people participating in combat sports and martial arts combines similarities in terms of meaning and content, but the hierarchy of motives can be very different due to cultural contexts. Further studies should take this fact into consideration (Meyer, Bittmann, 2018), also in relation to other sport disciplines. Popular opinions underline negative effects of practicing martial arts. No statistically significant difference in aggression (verbal aggression, physical aggression, hostility, anger) was reported among 60 Czech practitioners of baseball and Brazilian jiu-jitsu (Vit, Sebera, Chroust, 2019). The latter results require further confirmation due to a small sample size.

One cannot disregard the significance of opportunities to educate the young generation in the context of practicing combat sports and martial arts (Davis, Menard, 2013; Harwood, Lavidor, Rassovsky, 2017; Kotarska, Nowak L, Szark-Eckardt, Nowak MA, 2019). Growing number of female beginners also indicates that karate is perceived as any other sport and gains in significance on a global level. Avoiding a subjective assessment of values in relation to these sports, one should popularize them as combat sports and martial arts contribute to physical activation as well as enhance self-defense opportunities.

## Conclusions

1. Physical fitness, well-being, and pleasure from physical activity comprise key goals for practicing combat sports, martial arts and fitness. Health was in the next place.
2. Subjects practicing B, K, BJJ, MT and F were found to have significant correlations between the following goals: pleasure from physical activity and fulfillment of the need for physical activity correlated with physical fitness; fulfillment of the need for activity correlated with pleasure from physical activity; finding recognition in the eyes of others correlated with being fit. For women participating in B and K, these objectives were usually associated with fulfilling the need for exercise, for K, BJJ, MT practitioners – with promotion of this sport, and for K athletes – with well-being and the company of other people.
3. Among examined women no differences were observed in the scales determining the motivational functions of the aims of participation in combat sports, martial arts and fitness training. However, an overall differentiation in terms of motivational values and time management depending on the training experience of respondents was reported.

Motivation and better time management increased with the training experience of women. These results were supported by the effect size ( $rg=-0.5$ ).

**Final conclusion:** Knowledge of motivations and understanding the reasons for any kind of women's

physical activity may have an impact on more effective promotion of exercise.

**Limitations:** IPAO does not include any motives for practicing combat sports or martial arts for the purpose of self-defense or attack. These motives shall be taken into consideration in future studies.

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