

MARTIAL ARTS & HEALTH

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The estimation of health-related behaviours of men practising aikido and capoeira

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Key words: health-related behaviours, lifestyle, aikido, capoeira, martial arts

Abstract:

The aim of this work was the estimation of level of health-related behaviours among young men practising *aikido* and *capoeira*, with the comparison to non-sports persons.

The research was carried out on 92 men aged 18-40 years, divided into two groups. Group 1 consisted of persons practising *capoeira* and *aikido*. While non-sports people were classified into Group 2. The investigative tool was the Inventory of Health-Related Behaviours by Juczyński (where health-related behaviours were rated in four categories: proper nutrition habits, prophylaxis behaviours, and positive attitude and health practices).

The level of declared health-related behaviours and practices expressed with HRB indicator was statistically higher ($p=0.002$) for persons training martial arts (81.76) than for non-sports persons (74.61). Essential differences ($p<0.05$) were noted besides in the category of nutritional habits and health practices.

A regular training of martial arts had an influence on general health-related behaviours. Active persons were more often aware, among other things, of proper nutrition habits. This proved the intellectualisation of the process of health training and the transfer of desirable behaviours into everyday life.

Introduction

The present popularity of martial sports and arts is most often connected with their defensive aspect. Latest research proves however that the leading motive of taking up the training is the improvement of physical fitness [Witkowski *et al.* 2013]. Martial arts with utilitarian values, versatility of exercises

and attitude of optimum-development of all motor features can determine the alternative health training for people of every age [Kalina *et al.* 2003; Cynarski 2004; Tsang *et al.* 2009; Boguszewski, Kerbaum 2011; Tokarski 2012].

Most practised nowadays martial arts have originated from the Far East. Whereas Capoeira descends from ritual dances of African tribes. It

Table 1. Characteristics of the research groups

	number of people	age [years]	body height [cm]	body mass [kg]	training experience [years]
Group 1 (martial arts practitioners)	47	23.91 ±5.74	177.11 ±6.17	79.37 ±13.09	6.32 ±4.02
Group 2 (non-active)	45	27.13 ±5.31	179.64 ±7.58	81.11 ±11.54	-

links characteristic for Africa rhythms and dancing-poses. It is also associated with the culture of South American Indians. It was created in Brazil at the turn of 18th and 19th century thanks to Brazilian slaves of the African origin. Capoeira is the art of self-defence, acrobatics, dancing-evolutions and elements of real fight. It is acknowledged as the combination of martial arts and dancing-form [Lowell Lewis 1995; Capoeira 2002, 2006].

Aikido is the Japanese martial art in which competitors use exclusively self-defence, without forms of attack. Competitor does not use typical kicks or knocks, but mostly the power of opponent – interactions with the activity of other competitor. In the course of trainings, apart from protection and safety rules, there is also initiated the pedagogical aspect, based on the Bushido Code. Competitors are taught respect for the other person, tolerance, help and discipline. In the aikido training exercises of elongation, flexibility and strengthening are used. Meditative techniques, implemented parallel with the flexibility training, regularly performed during each class, play significant role in overcoming stress, muscles relaxation and elimination of complaints resultant in consequence of the intensive muscular tension [Ueshiba 1984; Mroczkowski 2002; Mroczkowski, Jaskólski 2006; Muszyński, Pawlik 2007].

Capoeira and aikido, as well as other martial arts, do not limit themselves only to the methodics of exercises. These are the systems of physical education, joint with the philosophy in which one of elements is the health aspect [Ueshiba 1984; Capoeira 2002].

Martial arts are a discipline of sport in which the training consists of direct encounter of two sportsmen, in the form of immediate influence on the body of the competitor with the purpose of the documentary evidence of one's own superiority. The identity of combat sports and martial arts consists of the integration of three specific factors: pragmatic, utilitarian and mental. They have an influence on the psychophysical and moral education of a man. Therefore combat sports and martial arts are much more than disciplines of sport. They are a form of the

physical education, the civil (defensive) education and philosophy. In the martial arts training the important part is played by intellectualization and it refers not only to exercises on dojo, but also to everyday life [Kalina 2000; Shishida 2010, 2011].

The aim of this research was the estimation of chosen health-related behaviours (HRB) of young men practising martial arts in comparison to non-sports persons. Additionally the comparisons of HRB levels were made at studied persons.

Material and methods

In the research 97 (18-40 years old) men took part. Among them there were 47 martial arts practitioners (aikido n=32, capoeira n=15) and 45 non-active persons. The age of the study group was averagely 25.76 years old ±5.82, body mass 80.22 kg ±12.31, body height 178.91 cm ±7.11. The examined people were divided into groups, according to age, training advancement and frequency of trainings. The detailed biometrical characterization of the examined persons was placed in the table 1.

The investigative tool was the Inventory of Health-Related Behaviours, developed and validated by Juczyński (where health-related behaviours were rated in four categories: eating habits, prophylaxis behaviours, and positive attitude and health practices. The questions in the inventory refer to four categories of health-related behaviours (HRB): proper nutritional habits (NH) that is the kind of consumed food, the frequency of meals, prophylaxis behaviours (PB) that is abiding by health recommendations, learning about health and illness, positive attitude (PA) that is avoidance of strong excitements, tensions, stresses, and health practices (HP) that is everyday activities containing physical activity, sleep and recreation [Juczyński 2001]. Additionally the author's questionnaire containing the biometrical information was carried out.

Standard statistical tools were used in the compilation of the material i.e. the arithmetical mean together with the standard deviation. Differences among each data were counted with the use of T-student test for independent groups. The

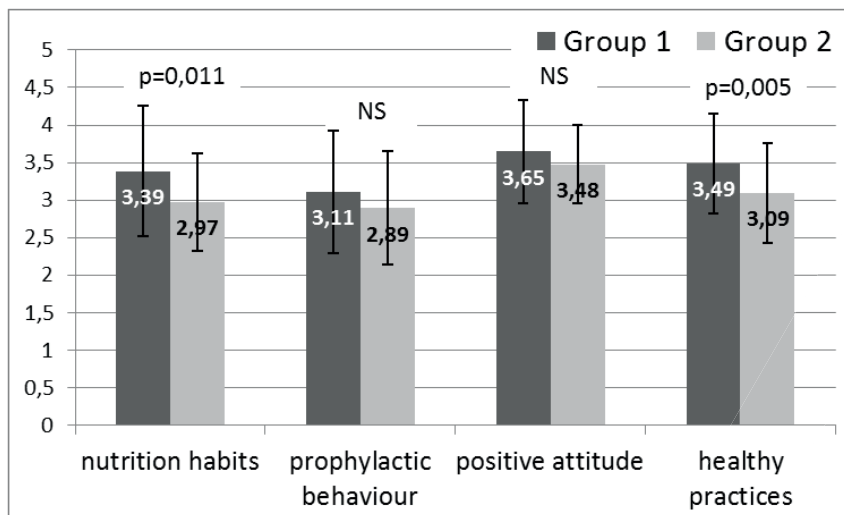


Fig. 1. Level of health-related behaviours martial arts practitioners (Group 1) and non-active (Group 2)

Table 2. Level of health-related behaviours martial arts practitioners

	NH	PB	PA	HP	HBI
CAPOEIRA	3.49* ±0.73	3.05 ±0.8	3.75 ±0.78	3.5* ±0.78	82.72* ±13.38
AIKIDO	3.34 ±0.93	3.14 ±0.84	3.6 ±0.65	3.48* ±0.62	81.31* ±11.92

* p<0,05 – difference between sports and non-sports groups

Table 3. Level of health-related behaviours examined persons – divided into age subgroups

		NH	PB	PA	HP	HBI
≥25 years old	Group 1	3.39	3.26	3.58	3.39	81.68
	Group 2	2.98	2.93	3.49	3.04	74.62
	difference [p]	NS	NS	NS	NS	p<0.05
<25 years old	Group 1	3.39	3.01	3.69	3.55	81.82
	Group 2	2.96	2.78	3.45	3.25	74.57
	difference [p]	NS	NS	NS	NS	p<0.05

Table 4. Level of health-related behaviours martial arts practitioners – divided into subgroups

		NH	PB	PA	HP	HBI
training experience [years]	> 5	3.66	3.22	3.78	3.42	84.5
	≤ 5	3.1	2.99	3.5	3.56	78.91
	difference [p]	p<0.05	NS	NS	NS	NS
number of trainings [per week]	≥ 5	3.69	3.45	3.69	3.49	85.94
	< 5	3.16	2.86	3.61	3.48	78.67
	difference [p]	p<0.05	p<0.05	NS	NS	p<0.05

level $p \leq 0.05$ was fixed as of minimum significance one.

Results

The level of declared health-related behaviours and practices was expressed in HRB indicator which was statistically higher ($p=0.002$) for persons

training martial arts (81.76) than for non-sports persons (74.61). Essential differences were noted additionally in the category of proper nutrition habits and health practices. The highest rates for the studied people from both groups were obtained in the category of positive attitude (fig. 1).

A higher level of health-related behaviours characterized men practising capoeira, but the difference between them and those training aikido

was not essential. Students of both martial arts differed significantly in no specified category of healthy lifestyle (tab. 2).

The analysis of results taking into account the division into subgroups: older persons – above 25 and younger – below 24 year of the life, confirms general tendencies. Statistically important differences were observed only between the values of the HRB indicator of groups exercising and not exercising. There were no differences between the persons classified into first or second subgroup within Group 1 (exercising) and 2 (not exercising) (tab. 3).

Training advancement and frequency of trainings were the only factors differentiating persons. People who trained more often (more than 4 times a week) were characterized with the higher general level of health-related behaviours and with the higher level of nutritional habits and prophylaxis behaviours. Division according to training advancement brought to light differences within proper nutrition habits range (the higher level of NH characterized persons of longer training. Persons practising longer than 6 years reached highest ratings in positive attitude, but those who have trained shorter (up to 5 years) – in health practices (tab. 4).

Discussion

Due to wholly developmental character and large variety of exercises, elements of martial sports can be practised by people of any age, and persons exercising are characterized not only with the higher level of power and endurance, but also movement co-ordination, concentration, equilibrium and flexibility [Douris *et al.* 2004; Drapsin *et al.* 2010; Boguszewski, the Plough 2011; Hübner-Woźniak *et al.* 2011].

Regular training of martial sports can contribute to change of lifestyle, help with elimination of unhealthy habits, and also affect mental sphere. Therefore elements of martial arts are also used in treatments and rehabilitation [Woodward 2009; Tomaszewski *et al.* 2012]. Profitable results were observed after the use of judo training as the supplement of therapy of children with ADHD and with the ones intellectually handicapped [Harris 1998; Baumann 2003; Boguszewski *et al.* 2013]. The research proved that training various forms of fight lowers the level of aggressiveness at those practising [Mroczkowska *et al.* 2008; Steyn, Roux 2009; Graczyk *et al.* 2010]. Among 'difficult' young people – threatened with high risk of abuse, subjected to thirty hours of Kempo Tai Jutsu training, the

improvement of impulsiveness, obeying rules and correct social behaviours were observed [Zivin *et al.* 2001]. It was also observed that training of martial arts, due to the ethical factor, influenced prophylactically risky health-related behaviours of its participants. It was noticed that those practising martial arts considerably more seldom undertook risky health-related behaviours such as smoking cigarettes, drinking alcohol and taking psychoactive drugs [Błach *et al.* 2005; Nowak *et al.* 2009; 2013; Litwic-Kamińska, Izdebski 2012; Boguszewski *et al.* 2013]. This present research confirms greater care for healthy lifestyle of persons practising martial arts, especially concerning nutritional habits and health practices.

Martial arts are also used to broadly define the improvement of people with disorders or diseases of movement apparatus [Burke *et al.* 2007; Boguszewski, Torzewska 2011]. Process of posture correction of children was supported with exercises with elements of martial arts [Momola, Cynarski 2003]. Research on aikido efficiency in the correction of posture defects, showed the diminution of scoliosis I° in the group of those exercising [Mroczkowski, Jaskólski 2006]. In the research out by Mroczkowski, it was also ascertained that there was improvement of pelvis position in the frontal area and diminution of need of in-shoe heel inserts (on the lower side of the pelvis) in the group of children attending aikido classes [Mroczkowski, Jaskólski 2007].

Sports and martial arts are qualified often as sports of "high risk". Commonly they are considered dangerous for the health because of frequent injuries during the training [Green *et al.* 2007; Cynarski, Kudłacz 2008; Hosseini, Hosseini 2010; McPherson, Pickett 2010]. However research carried out in University Hospital of Groningen [Tenvergert *et al.* 1992 they] showed that at people practising football, volleyball, gymnastics and sports of fight, exactly students of martial sports had more seldom suffered from bodily injuries. As most frequent, in the group of martial sports competitors, Wilkerson mentions small injuries of soft tissues, haematomas and flesh wounds, more seldom breaks (mostly phalanx bones of hands and legs) [Wilkerson 1997]. Kudłacz and Cynarski instead, give breaks and damages of ligaments of knee joint, as most often declared by competitors [Kudłacz, Cynarski 2007]. More serious injuries refer however to highly qualified sport, where contusions appear also in other disciplines. As Woodward states [2009], sports of fight are comparatively safe in the comparison to other disciplines, and at most competitors body injuries are slight, especially on the level of beginners and intermediate ones [Zetaruk *et al.* 2005].

Present lifestyle does not favour physical activity. People working mostly in the sitting position, having no time for any activity, are often obese and less efficient therefore more subjects to diseases. Ageing population makes us realize that the problem will grow. Therefore, it is important to create an efficient programme of health education and prophylaxis, one that is oriented towards promotion of regular physical activity and martial arts as valuable forms of motor recreation and so called 'lifelong sport'.

Conclusions

1. Regular training of martial arts had influence on general health-related behaviours. Active persons were more often concerned about, among other things, proper nutrition habits. This proves intellectualisation of the process of health training and the transfer of desirable behaviours into everyday life.
2. The age, the frequency of trainings and the training experience correlated positively with some elements of health-related behaviours. This might be a proof of intellectualisation of the training process and influence of habits desirable in sport, such as those related to physical fitness, on everyday life.
3. In the light of obtained results it seems legitimate to continue promotion of physical activity (and martial arts as its valuable form) in all social groups.

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Ocena zachowań zdrowotnych mężczyzn uprawiających aikido i capoeirę

Słowa kluczowe: zachowania zdrowotne, styl życia, aikido, capoeira, sztuki walki

Streszczenie

Celem pracy było ocena poziomu zachowań zdrowotnych wśród młodych mężczyzn uprawiających aikido i capoeirę, na tle osób nieaktywnych.

Badania przeprowadzono na 92 mężczyznach w wieku 18-40 lat, podzielonych na dwie grupy. Grupa 1 to osoby uprawiające capoeirę i aikido. Do Grupy 2 zakwalifikowano natomiast osoby nietreningujące. Narzędziem badawczym był Inwentarz Zachowań Zdrowotnych Juczyńskiego (gdzie zachowania zdrowotne oceniane są w czterech kategoriach: nawyki żywieniowe, zachowania profilaktyczne, nastawienie psychiczne i praktyki zdrowotne).

Poziom deklarowanych zachowań i czynności związanych ze zdrowiem wyrażonych wskaźnikiem ZZ był istotnie wyższy ($p=0,002$) wśród osób uprawiających sztuki walki (81,76) niż u osób nieaktywnych fizycznie (74,61). Istotne różnice ($p<0,05$) odnotowano ponadto w kategorii nawyków żywieniowych i praktyk zdrowotnych.

Regularny trening sztuk walki miał wpływ na ogólne zachowania zdrowotne. Osoby aktywne częściej zwracały uwagę m.in. na prawidłowe nawyki żywieniowe. Świadczy to o intelektualizacji procesu treningu zdrowotnego i przenoszeniu pożądanego zachowań na życie codzienne.