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The hierarchy of professional activities of martial arts and mixed martial arts coaches

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Abstract:

Martial arts and combat sports differ mainly in terms of the purpose of training. Therefore, professional competences and activities of coaches should take into consideration differences between them. When educating future coaches we already ought to bear in mind the specificity of the training process stemming from psychophysical, technical, tactical and social requirements of different types of hand-to-hand combat. The aim of the study was to get to know and compare the hierarchy of basic professional activities of a coach in three martial arts (capoeira, karate and taekwon-do) and one combat sport (mixed martial arts – MMA). A questionnaire was used to gather opinions of 250 coaches concerning the significance of 20 professional activities in their work. It turned out that the differences between the rank of professional activities of martial arts coaches (n=182) and MMA coaches (n=68) were statistically insignificant ($p < 0.05$) and in the case of four activities the coaches expressed very similar opinions. Moreover, Spearman's rank correlation coefficient had a high value ($r_{sp} = 0.67-0.84$; $p < 0.001$). None of the coaches had identical views regarding the significance of basic professional activities (cv=14-54%). Managing technical preparation and managing physical preparation of an athlete were selected as the most important activities by coaches of capoeira, karate, MMA and taekwondo, while conducting research for scientific and methodological papers was marked as not important. It is not possible to distinguish clearly between martial arts and combat sports on the basis of a hierarchical structure of basic professional activities of a coach.

Introduction

As for physical activity connected with the preparation for a direct physical fight (hand-to-hand combat), there is a lot of confusion in terms of semantics, theory and practice [Vertonghen *et al.* 2012]. Training goals and reasons for selecting a particular type of combat determine how martial arts, combat sports or combat systems should be classified [Allen 2013; Kalina *et al.* 2005; Witkowski *et al.* 2013]. A coach establishes training goals, tasks and methods and simultaneously controls their realisation. Proper interactions between different aspects of performance help to achieve goals and they ought to occur at all stages of a training process. To a large extent they depend on the knowledge and experience of a coach [Blumenstein *et al.* 2005]. Research shows [Gilbert *et al.* 2006] that too little time is devoted to educating coaches. We should also mention state policy which may noticeably influence the image of sport in a given area and the treatment of a coaching profession [Massiera

et al. 2013]. It is worth highlighting the key role of a coach as an educator whose professional activity takes place in the so-called “moral laboratory” [Hardman *et al.* 2010]. The effects of coaches' work are verified by their competitors' success. Therefore, it is necessary to look for more optimal solutions, to experiment and to update your knowledge all the time. All activities of a coach (current and future ones) during a long-term training process can be encapsulated in 20 basic professional activities. Their place in a hierarchical structure indicates the main purpose of training and shows the level of professionalism among coaches [Tumanian 1985]. The aim of the study was to get to know and compare the significance of basic professional activities of a coach in martial arts (capoeira, karate and taekwon-do) and mixed martial arts (MMA)¹

¹ MMA (mixed martial arts) is a combat sport in which competitors make use of all techniques allowed in other combat sports without weapons. The combat itself has minimal limitations, yet the risk of death or other serious body injuries

Table 1. Characteristics of the examined coaches

Type of combat	Number (n)	Age, years (x ± sd)	Training experience, years (x ± sd)	Coaching experience, years (x ± sd)
Capoeira	32	19.09 ± 2.43	4.38 ± 2.20	0.88 ± 1.33
Karate	55	31.29 ± 8.22	12.84 ± 6.44	3.31 ± 4.23
MMA	68	25.91 ± 6.98	6.97 ± 7.27	2.54 ± 3.95
Taekwon-do	95	27.14 ± 7.11	12.22 ± 5.41	5.13 ± 6.18

[source: own research]

as well as verifying the hypothesis of different hierarchies of activities depending on training goals.

Methods

The opinions of 250 best coaches of capoeira (n=32), karate (n=55) and ITF taekwon-do (n=95) as well as mixed martial arts (n=68) were gathered. Karate coaches were the oldest (an average age of 31 years) and they demonstrated the longest training experience (13 years), while taekwon-do coaches had the longest coaching experience (over 5 years) – table 1.

A diagnostic poll method with the use of Tumanian's questionnaire was employed [1985]. The questionnaire contained a list of 20 basic professional activities of a coach. They were ranked by the respondents as follows: 1 – very important, 2 – important, 3 – less important, 4 – not important. The list of professional activities of a coach includes:

1. Managing physical preparation
2. Managing tactical preparation
3. Managing technical preparation
4. Managing volitional preparation of competitors
5. Managing theoretical preparation of competitors
6. Managing athletes during competitions
7. Controlling a training process and the state of the athlete's body
8. Supervising the progress of athletes at school
9. Organising and refereeing competitions
10. Organising sports camps
11. Organising educational work in a group
12. Organising the process of recovery and relaxation
13. Planning the process of preparing competitors
14. Improving the manners of competitors
15. Conducting research for scientific and methodological papers
16. Keeping record and reporting (collecting documentation and drawing up reports)

is minimised. Fights take place in a typical boxing ring or in rings of different shapes surrounded with the fence that prevents fighters from falling off the ring [Dooley 2013].

17. Recruiting and selecting candidates to training groups
18. Preparing instructors and referees
19. Solving organisational problems related to training
20. Providing first aid.

Selected types of statistics were used in the analyses (mean values, standard deviation, variation coefficients and weighted means were calculated for each activity and then marked on an itemised rating scale). The concurrence of opinions was examined using Spearman's rank correlation coefficient "rsp". The level of significance was assumed at $p < 0.05$. *Statistica 6.0* programme was employed to analyse the results.

Results

The coaches of capoeira chose managing physical preparation (rank 1), managing technical preparation (rank 2) and providing first aid (rank 3) as the most important activities in their professional work (figure 1). As for the least important ones, they selected organising and refereeing competitions (rank 20), preparing instructors and referees (rank 19) and conducting research for scientific and methodological papers (rank 18).

According to karate coaches, the most important activities of a coach included managing technical preparation (rank 1), providing first aid (rank 2) and managing physical preparation (rank 3) – figure 2. Less important or not important activities included conducting research for scientific and methodological papers (rank 20), keeping record and reporting (rank 19) as well as organising and refereeing competitions (rank 18).

The most important activities marked by taekwon-do coaches included managing technical preparation (rank 1), managing physical preparation (rank 2) and planning the process of preparing competitors (rank 3) – figure 3. In turn, conducting research for scientific and methodological papers (rank 20), supervising the progress of athletes at school (rank 19) and organising sports camps (rank 18) were regarded as the least important.

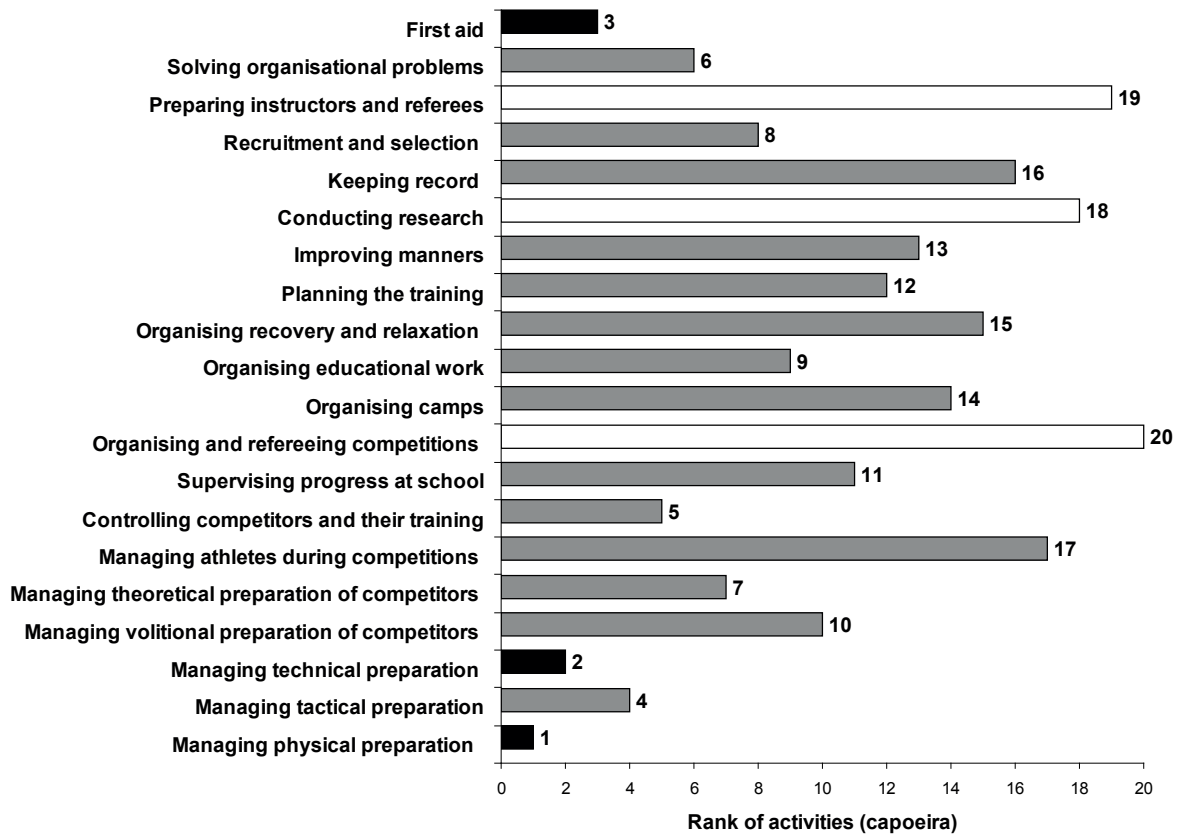


Figure 1. Hierarchical structure of basic professional activities of capoeira coaches (n=32) – ordering variable: order of activities in the questionnaire

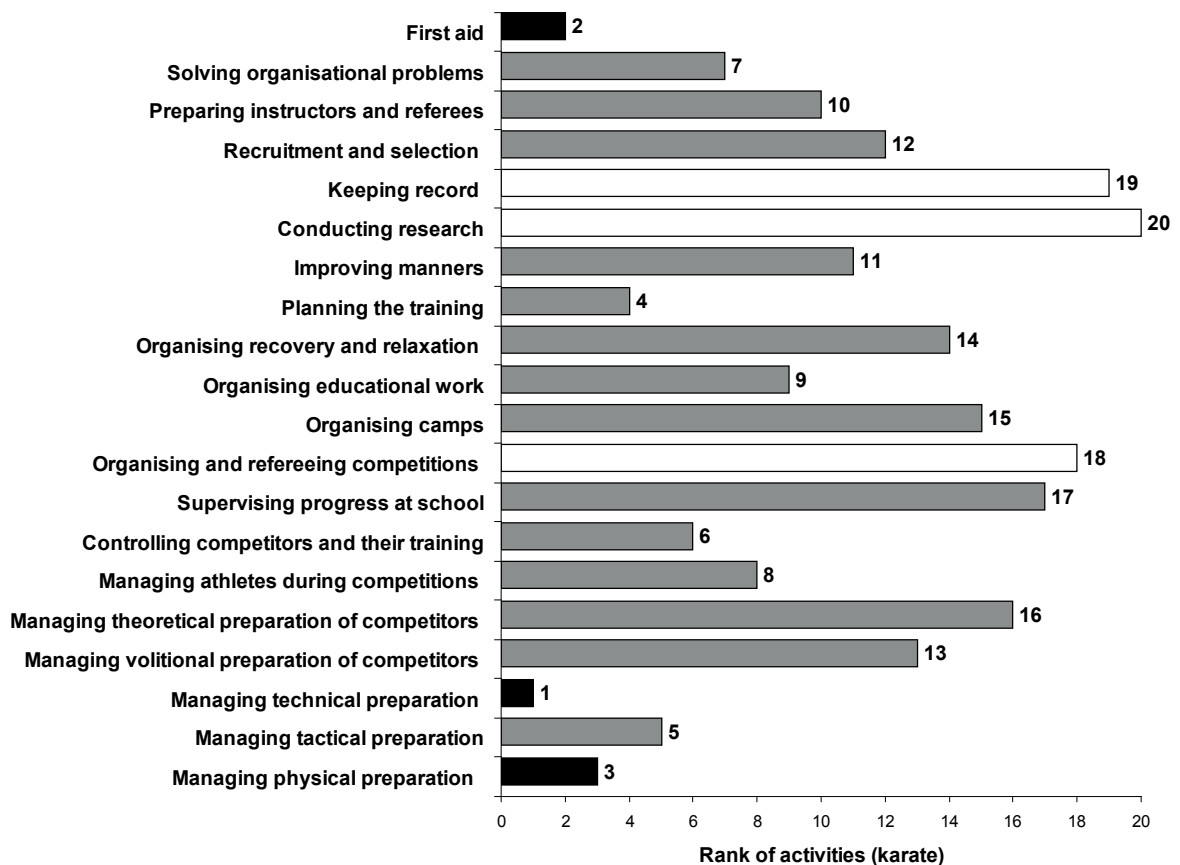


Figure 2. The rank of basic professional activities of karate coaches (n=55) – ordering variable: order of activities in the questionnaire

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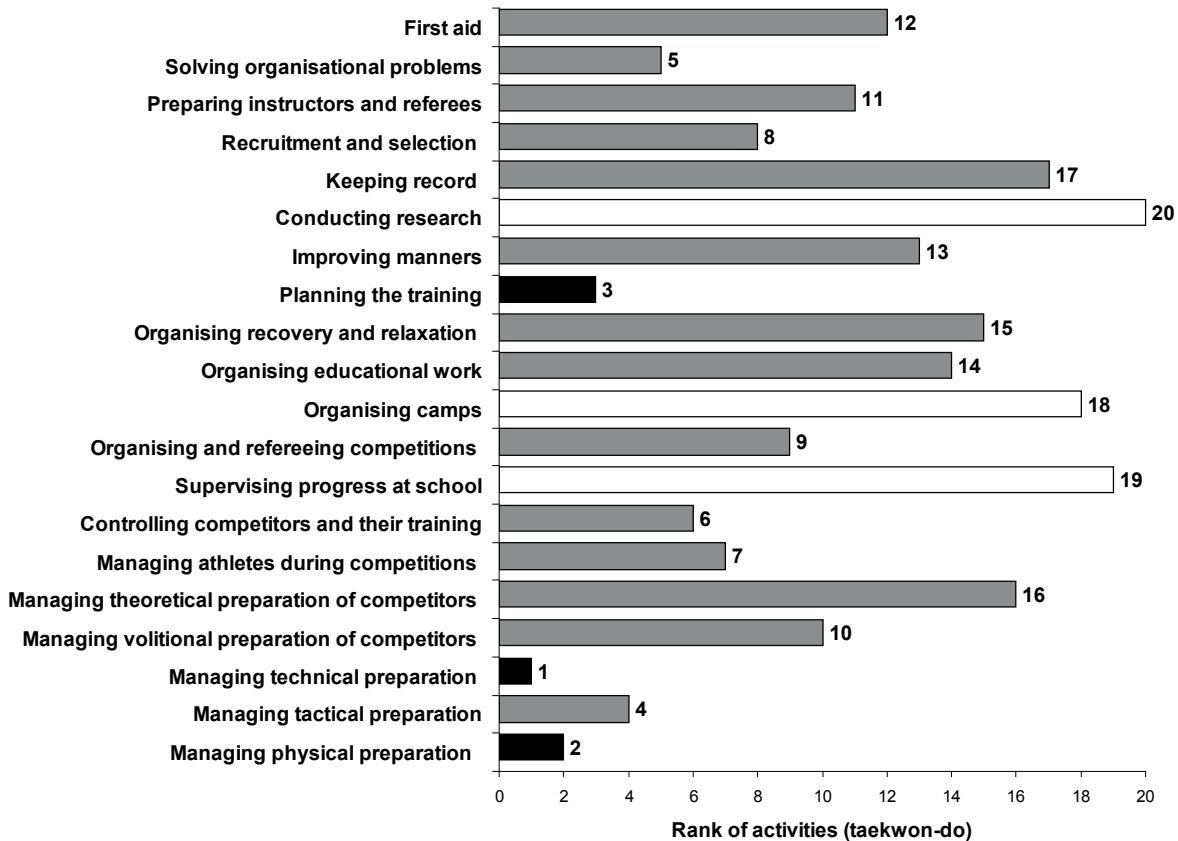


Figure 3. The structure of basic professional activities of taekwon-do coaches (n=95) – ordering variable: order of activities in the questionnaire

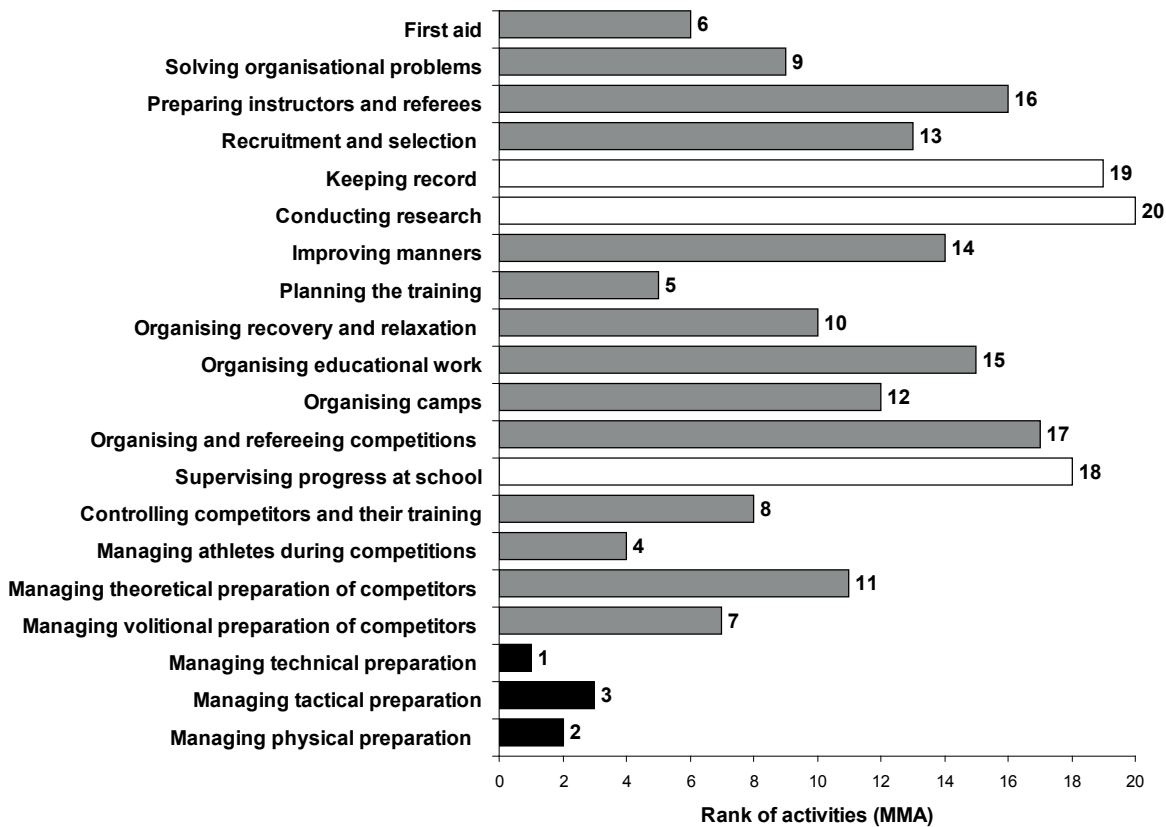


Figure 4. The rank of basic professional activities of coaches of mixed martial arts (n=68) – ordering variable: order of activities in the questionnaire

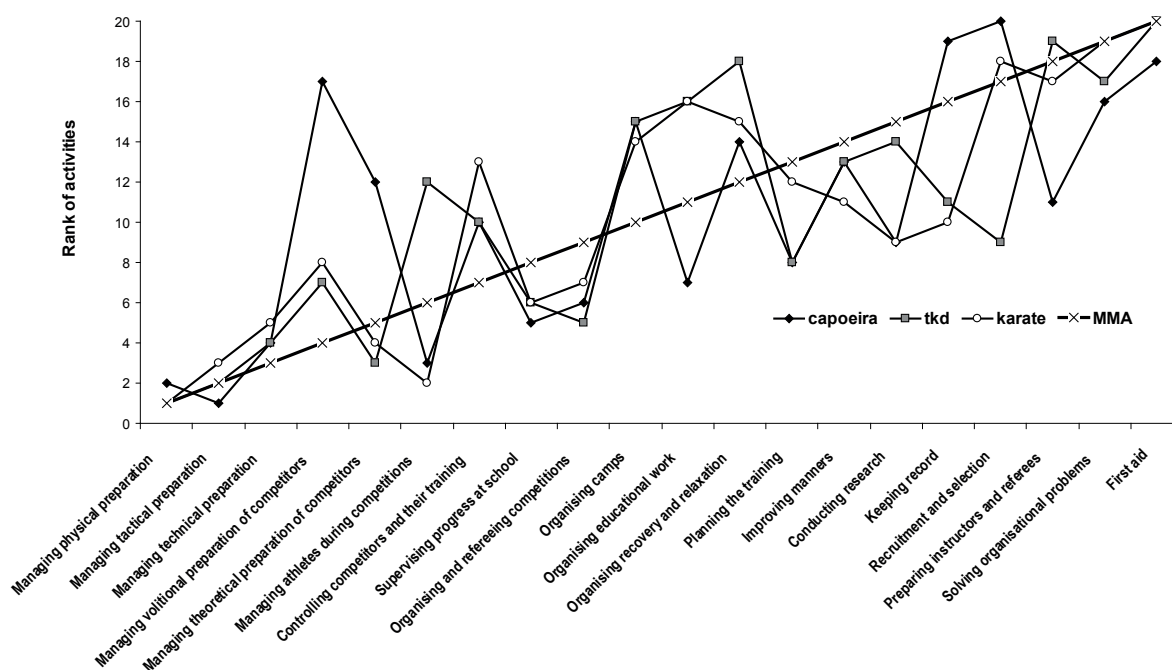


Figure 5. Comparison of the ranks of professional activities of MMA and martial arts coaches (ordering variable – the rank of professional activities among MMA coaches)

Three areas of a competitor's preparation (technical, physical and tactical) ranked the highest among MMA coaches (figure 4). Conducting research, keeping record and supervising the progress at school were marked as the least important in the training process.

In terms of ranking, capoeira and MMA coaches differed in all 20 basic professional activities. The largest differences were observed in managing athletes during competitions (rank 17 and 4) – figure 5. The coaches expressed similar opinions (the difference of one rank) with regard to 4 activities: managing physical, tactical and technical preparation as well as improving the manners of competitors. The rank correlation coefficient was high ($r_{sp}=0.67$; $p<0.001$).

Karate and MMA coaches agreed on the significance of managing technical preparation of competitors, conducting research for scientific papers and keeping record of their work. However, they had different opinions regarding the hierarchy of activities connected with volitional preparation of competitors, organising educational work and preparing instructors and referees (the difference of 6 ranks). The rank correlation coefficient was very high ($r_{sp}=0.84$; $p<0.001$).

Taekwon-do coaches expressed opinions identical to those of MMA coaches in the case of three professional activities: managing technical and physical preparation of competitors and conducting research for scientific and methodological papers.

The largest difference (8 ranks) concerned organising and refereeing competitions. The rank correlation coefficient was high ($r_{sp}=0.79$; $p<0.001$).

Discussion and conclusions

Despite their young age (19 years) and short coaching experience (approx. 1 year), capoeira coaches made logical choices when selecting the most important activities, as physical preparation and learning movement skills were marked as the most significant. Complex coordination movements performed to the rhythm of the music cause injuries of the musculoskeletal system and are reflected in the significance (rank 3) of providing first aid. Activities connected with sports competition (organising competitions, preparing athletes to participate in competitions as well as managing them during competitions) were selected as not important, which seems to be understandable in the case of capoeira being a typical martial art.

The most important activities chosen by karate and taekwon-do coaches, who treat their sports as martial arts with sports competition, included those directly connected with the technology of sports training (technical, physical and tactical preparation, planning the training process, controlling the training and adaptation processes, various activities during a competition). The greatest difference (10 ranks) was observed in the significance of providing

first aid. Karate fight involves full contact (excluding hand strikes on the head), while taekwondo competitors have to control the power of kicks and strikes (fewer injuries). Similar results were obtained by Sterkowicz [1998, 1999] and Sterkowicz *et al.* [2007], who examined judokas and instructors of ju-jitsu and karate kyokushinkai.

The hypothesis that professional activities differentiate coaches of martial arts and combat sports ought to be treated as false. The differences between weighted means of basic professional activities of martial arts and mixed martial arts coaches turned out to be statistically insignificant ($p < 0.05$) and in the case of four activities the coaches expressed very similar opinions. Moreover, Spearman's rank correlation coefficient had a high value ($r_{sp} = 0.67-0.84$; $p < 0.001$). As for capoeira coaches, the greatest similarities in their opinions were noted in the case of conducting research for scientific and methodological papers ($cv = 14\%$). The largest differences were also observed among capoeira coaches ($cv = 54\%$) with regard to the importance of recruiting and selecting candidates to training groups.

Based on opinions concerning particular professional activities, it is possible to notice that karate coaches are more inclined to combat sport than martial art. A hierarchical structure of basic professional activities of a coach does not make it possible to distinguish clearly between martial arts and combat sports. Managing technical and physical preparation of competitors ranked very high among coaches of four types of a hand-to-hand combat. Conducting research for scientific and methodological papers was selected as not important in the training process of martial arts and combat sports. None of the coaches had identical views regarding the importance of basic professional activities. Opinions differed by 14-54% depending on the kind of coaching activities. During courses for instructors and coaches of martial arts and combat sports didactic content does not have to vary in terms of volume, yet it only ought to take into account the specificity of a given hand-to-hand combat.

Based on the significance of basic professional coaching activities, which put long-term training tasks of hand-to-hand combat in order, it is not possible to state unequivocally whether athletes are only prepared to compete effectively or whether training is universal and it is treated as lifelong physical activity in which pursuing perfection, shaping self-discipline, maintaining psychomotor fitness until old age and believing in self-defence efficiency are dominant. Despite different training and coaching experience, the subjects expressed

similar opinions concerning the role of the most important activities of a coach. Hand-to-hand combat training is treated as the preparation to sports competitions or a path towards mental and physical perfection. It requires the concentration of activities on similar aspects of the training process.

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Czynności zawodowe trenera sztuk walki i mieszanych sportów walki

Słowa kluczowe: sztuki samoobrony, sporty walki, podstawowe czynności zawodowe trenera

Streszczenie

Sztuki samoobrony i sporty walki różni głównie cel trenowania, który powinien znajdować odzwierciedlenie w znaczeniu podstawowych czynności zawodowych trenera. Dlatego celem badań było poznanie i porównanie hierarchii 20 czynności zawodowych trenera w trzech sztukach walki (*capoeira*, *karate* i *taekwon-do*) oraz mieszanych sportach walki (*mma*). Okazało się, że różnice pomiędzy średnimi ważonymi czynności zawodowych trenerów sztuk walki ($n=182$) i *mma* ($n=68$) są statystycznie istotne ($p<0,05$), wykazując bardzo zbliżone znaczenie 4 czynności oraz wysoką wartość współczynnika korelacji rang Spearmana ($r_{sp}=0,67-0,84$; $p<0,001$). Hierarchiczna struktura podstawowych czynności zawodowych trenera nie pozwala jednoznacznie identyfikować sztuki lub sportu walki. Kierowanie przygotowaniem technicznym i fizycznym zawodnika zaliczono do czynności bardzo ważnych we wszystkich odmianach walki wręcz, a za nieważne uznano prowadzenie badań do prac naukowo-metodycznych. Nikt z badanych szkoleniowców nie miał identycznych poglądów dotyczących znaczenia podstawowych czynności zawodowych ($cv=14-54\%$).