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The specificity of motivations in different combat sports and different lengths of the sports career

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Abstract

Background: Motivation is one of the predictors of human performance - including training and striving for perfection. Therefore, an analysis of the problem of motivation in martial arts and combat sports is particularly important, as it results in vital issues for many fields of science, including psychology of sport, sociology or theory of physical education. The aim of the study was to compare motivation in combat sports based on the example of judo and Brazilian jiu-jitsu athletes. Material and Methods: Seventy persons of all ages participated in a study conducted in February and March 2018 among males practicing judo and Brazilian jiu-jitsu. Information was collected with a use of the Motivation Questionnaire by P.C. Terry and A. Fowles in the Polish adaptation by Stanisław Sterkowicz. In order to compare the obtained values in the tested groups, the f-parametric test (for variance) and the t-parametric test (for differences) were used. Results: Significant differences in the components of motivation between men training judo and men training Brazilian jiu-jitsu were noted. Conclusions: Training both judo and Brazilian jiu-jitsu gives people a sense of good health and physical fitness and a sense of independence.

Keywords

judo, Brazilian jiu-jitsu, sports career quality, motivation questionnaire, professional sports career

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

Motivation is one of the most interesting problems in sport; among others, it is motivation that determines the effectiveness of training and the desire to strive for perfection. Given the importance of these consequences for athletes, researchers' interest in motivation associated with sport is understandable. Improving athletes' performance requires a selection of appropriate motivational techniques. This, however, necessitates knowledge about which psychological motives determine an individual's participation in sports competition and about the importance of achieving a desired objective in the chosen activity [1]. Several conceptual perspectives have been proposed to understand athletes' motivation better. According to the first one, the Yerkes-Dodson law, we act the best – the most smoothly and the most effectively – when the level of motivation is optimal. However, according to the cognitive evaluation theory, people's motivation changes depending on changes in their perception of competence and self-determination [2]. Therefore, tools enabling an assessment of an athlete's motivation are indispensable: owing to them, work on its level will be much more effective. Psychologists distinguish extrinsic and intrinsic motivation as well as amotivation as the basis of this construct. Physical activity is undertaken because of intrinsic rather than extrinsic motivation, although sometimes external factors are used to increase intrinsic motivation [3]. Athletes who participate in sport because they feel the pressure to be in good shape for aesthetic reasons and feel embarrassed when they are not at their best are an example of the introduced regulation. Among the most important motives for engaging in physical activity in the studies by Walczak and Tomczak [4], experiencing stimulation and improvement were mentioned. Tasiemski pointed out in his research that the benefits of practising sports include such factors as raising self-esteem and self-confidence [5].

Therefore, an analysis of the problem of motivation in martial arts and combat sports is particularly important, as it results in vital issues for many fields of science, including psychology of sport, sociology or theory of physical education. Kostorz [6] analysed the problem of motivation in martial arts and combat sports based, among others, on the example of judo depending on the type of physical activity, the training level and gender. The results of hitherto studies have revealed that the aspect associated with improving health and obtaining high physical fitness was one of the key factors influencing the decision to take up a martial art or a combat sport [6].

Since psychological issues are an essential component of psychological research conducted on athletes, and their results translate into practical coaching actions [7, 8, 9, 10], the results of the analysis of motivation can be used both in sports praxis and in developing effective ways to motivate persons to take up recreational effort. Unsurprisingly, then, the number of scientific publications on this issue has been rising for many years. Although pragmatists in various fields give motivation to the rightful place, it is still an understudied area.

MATERIAL AND METHODS

The study, conducted in February and March 2018 among Gdańsk and Bydgoszcz males practising judo (hereinafter: the Judo group) and Brazilian jiu-jitsu (hereinafter: the BJJ group), involved 70 persons of all ages who were active professional athletes, coaches, and recreational athletes (35 Judo and 35 BJJ).

The data were collected through the Motivation Questionnaire in Sport by Terry and Fowles in the Polish adaptation by Stanisław Sterkowicz. The following motivation groups/components were analysed: excellence, affiliation, stress, independence, health and fitness, extrinsic success, power, intrinsic success, aggression. The survey was accompanied by standard questions on the quality and the length of a sports career. The collected data were statistically developed with a use of Excel 2007 and Statistica v. 12.0 software. The f-parametric test (for variance) and the t-parametric test (for differences) were used to compare the values obtained in the examined groups. The significance of the differences was defined at $p < 0.05$. The graphs for variables present trend lines and the R^2 coefficient of determination. The motivation profile was projected for each of the examined group.

RESULTS

The results for the measure of total motivation (Total Motivation) and its components (Excellence, Affiliation, Stress, Independence, Health & Fitness, Extrinsic Success, Power, Intrinsic Success, Aggression) are shown in Table 1, while the numerical values of relative differences are shown in Table 2.

Table 1. Numerical values of total motivation and its components, measured for both of the studied groups (Judo, BJJ)

| Components of motivation / Group | Excellence (pts) | Affiliation (pts) | Stress (pts) | Independence (pts) | Health & Fitness (pts) | Extrinsic success (pts) | Power (pts) | Intrinsic success (pts) | Aggression (pts) | Total Motivation |
|----------------------------------|------------------|-------------------|--------------|--------------------|------------------------|-------------------------|---------------|-------------------------|------------------|------------------|
| Judo | 25.3* ±4.4 | 23.9* ±3.8 | 24.6 ±4.1 | 26.5* ±3.6 | 27.6* ±3.1 | 20.1* ±2.9 | 21.2* ±3.1 | 18.3* ±2.3 | 13.9 ±1.8 | 200.6* ±32.8 |
| BJJ | 22.1* ±3.9 | 20.3* ±3.6 | 22.3 ±4.0 | 23.5* ±3.9 | 24.4* ±3.5 | 12.5* ±1.6 | 16.7* ±2.6 | 13.3* ±1.9 | 12.1 ±1.7 | 163.4* ±31.7 |

* Statistical differences significant at the level of $p < 0.05$ for values in the same columns

Table 2. Relative differences between total motivation and its component measured for both of the studied groups (Judo, BJJ)

| Components of motivation / Group | Excellence (pts) | Affiliation (pts) | Stress (pts) | Independence (pts) | Health & Fitness (pts) | Extrinsic success (pts) | Power (pts) | Intrinsic success (pts) | Aggression (pts) | Total Motivation |
|----------------------------------|------------------|-------------------|--------------|--------------------|------------------------|-------------------------|-------------|-------------------------|------------------|------------------|
| Significance of differences Judo | 0.011* | 0.008* | 0.057 | 0.008* | 0.0001* | 0.0001* | 0.0001* | 0.0001* | 0.17 | 0.0001* |
| Relative difference Judo/BJJ (%) | 12.6 | 14.7 | 9.2 | 11.4 | 11.6 | 37.9 | 21.3 | 27.2 | 13.0 | 18.6 |

* Statistical differences significant at the level of $p < 0.05$ for values in the same columns

The collected data are shown in graphs (Figure 1-4).

The graph in Figure 1 shows that the course of the motivational profile in both the BJJ and Judo groups is very similar, while in the Judo group all components of motivation have higher values than in the BJJ group.

In both of the tested groups, "Health & Fitness" and "Independence" are the dominant components of motivation, while the "Aggression" component of motivation is the least important.

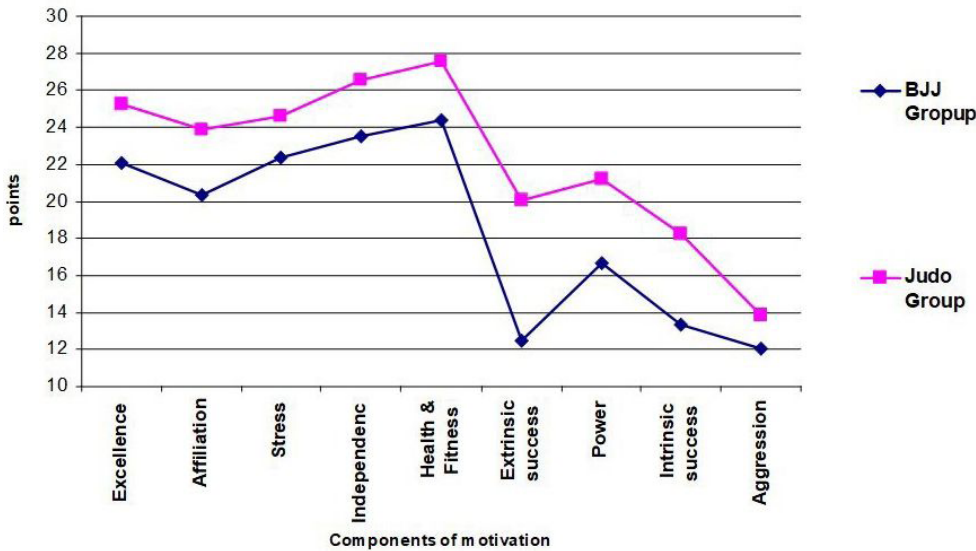


Fig. 1. Levels of profiles of motivation components in both of the examined groups - BJJ and Judo

Simultaneously, it is clear in the graph presented in Figure 2 that the greatest difference between components of motivation between the Judo group and the Brazilian Jiu-Jitsu group occurs for the values of “Extrinsic Success” and “Intrinsic Success”, while the slightest difference in the components of motivation occurs for the value “Stress”.

The graph presented in Figure 2 shows that the greatest difference between components of motivation between the Judo group and the Brazilian Jiu-Jitsu group occurs for the values “Extrinsic success”, “Intrinsic success”, and “Power”, while the slightest difference in motivation components occurs for the value “Stress”.

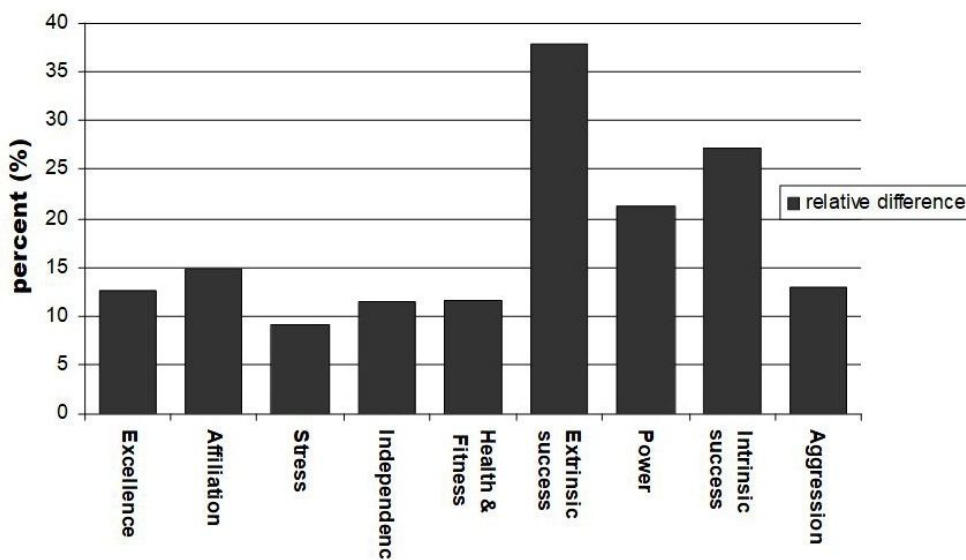


Fig. 2. Relative differences for the measured components of motivation in the Judo and Brazilian Jiu-Jitsu groups

The graph in Figure 3 indicates a positive relationship of the sense of independence with an increase in the length of the total sports career in the judo group at a statistically significant level $R^2 = 0.52$ and the absence of such a correlation in the Brazilian Jiu-Jitsu group.

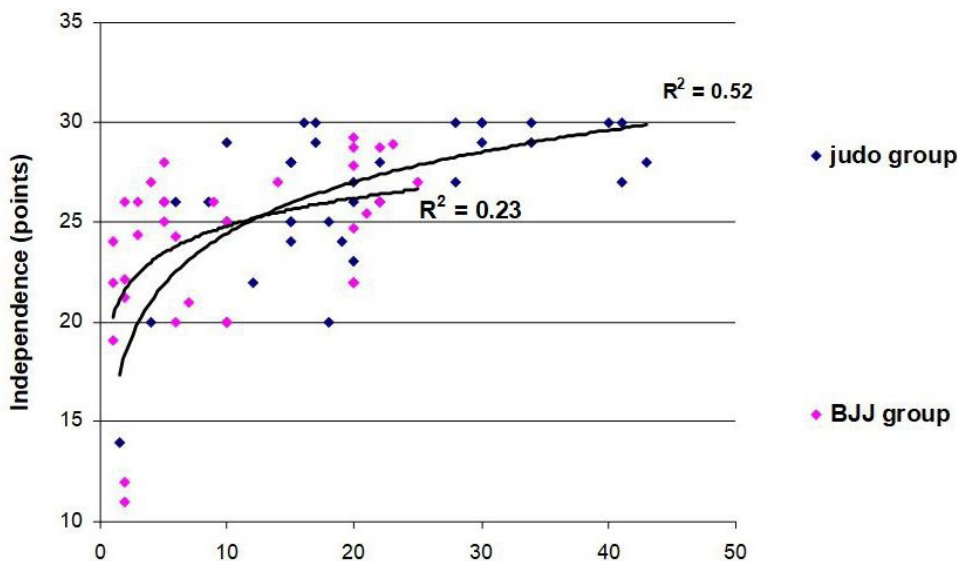


Fig. 3. Change in the value of the sense of independence (motivation component) in the function of the total length of a sports career in the group of athletes practising judo and in the group of athletes practising Brazilian jiu-jitsu

It should be noted, however, that the coefficient of determination $R^2 = 0.23$ in the Brazilian Jiu Jitsu group is close to statistical significance, and the trend line is of the same type as for the of Judo group (logarithmic).

The graph in Figure 4 shows a positive correlation between the sense of health and physical fitness and an increase in the length of the overall athletic career in the judo group at a statistically significant level of $R^2 = 0.45$ and a lack of such a correlation in the Brazilian Jiu-Jitsu group.

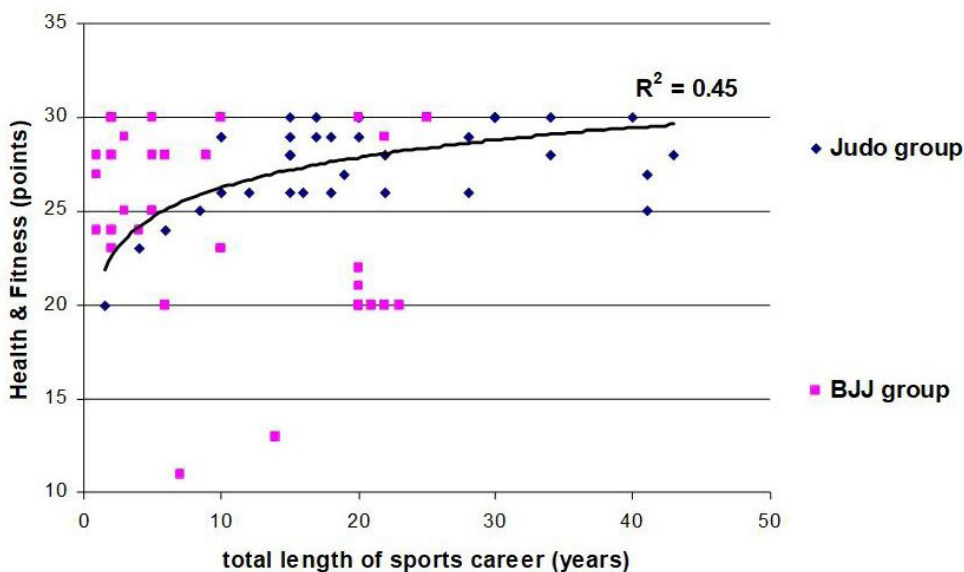


Fig. 4. Change in the value of the sense of health and fitness (motivation component) in the function of the total length of a sports career in the group of athletes practising judo and in the group of athletes practising Brazilian jiu-jitsu

DISCUSSION

Numeric data indicate that the total motivation for training a selected sport is higher in a statistically significant way in the group of persons practising judo than in the group of people practising Brazilian jiu-jitsu. At the same time, a comparison of motivation components, indicates that the seven components are significantly higher in the Judo group, and only the components of motivation "Stress" and "Aggression" are at a statistically similar level.

It also follows that the dominant components of motivation in both the judo group and the Brazilian Jiu-Jitsu group are "Independence" and "Health & Fitness". The calculated relative differences shown indicate that the components of motivation "Extrinsic success", "Power", and "Intrinsic success" differentiate the judo group from the Brazilian Jiu-Jitsu group the most.

We observe growing trend of a change in the value of the sense of independence (Independence) in the function of the total length of a sports career at a statistically significant level ($R^2 = 0.52$) in the group of people practising judo, and close to statistical significance ($R^2 = 0.23$) in the BJJ group. As previous studies show, there is a significant relationship between the quality of a competitive career and the point score in judokas' self-esteem, and a relationship between the duration of the competitive career and the point result in self-esteem [11]. On this basis, it can be concluded that both independence and self-esteem are closely related and dependent on the length of the sports career. Personal development, striving for individual satisfaction, happiness and pleasure are manifestations of the successively evolving individualistic orientation determining independence and supporting the development of an individual's motivation [12].

Positive relationship between the sense of health and fitness ("Health & Fitness") and an increase in the length of the total sports career in the Judo group at a statistically significant level and a lack of such a correlation in the Brazilian Jiu-Jitsu group was observed. Research indicates that, along with age, awareness of oneself and one's achievements increases just as self-esteem. Therefore, the ability to know oneself, thus self-awareness and a sense of identity, is an important or even the most important aspect of consciousness. The significance of this aspect of consciousness comes from the fact that conscious perception of anything to some extent always means self-perception [13]. Man learns about himself/herself in various forms of his/her own existence, also when overcoming fears and facing an opponent in a combat sport. Exploring the world and existing in the world are ways of learning one's Ego. The human Ego manifests itself in the world through objects surrounding it, through social relations, and as a self-learning entity. Therefore, physical fitness is strongly linked to staying healthy and fit, which further promotes motivation for more activities [14]. This dependence can also be seen in Figure 3 and 4, which both indicate "Health & Fitness" and "Independence" as the dominant components of motivation in both of the tested groups, with the "Aggression" component of motivation being the least important element. Such a correlation was already observed among judokas in Sterkowicz's studies conducted 25 years ago and is still the most important component of motivation for taking up training [6].

Research conducted in the following years in a variety of combat sports has also pointed to the importance of "Health & Fitness" as a motivator for training [15]. The sense of independence is strongly connected with the human perception

of health and fitness. On the one hand, independence is understood by the subjects as daily activities performed without others' help, i.e. functional fitness; on the other and, as self-sufficiency, i.e. a lack of a need for material support [16]. Being the least important motivator, aggression testifies to judokas' compatibility with the Bushido code of conduct, which perceives aggression as behaviour unworthy of a warrior [17, 18]. Figure 4 shows that the largest difference in the components of motivation between the Judo group and the Brazilian Jiu-Jitsu group occurs for the values "Extrinsic success", "Intrinsic success", and "Power", while the smallest difference was noted in the value of the component of motivation "Stress". Earlier reports [2] signalled similar results suggesting an increase in these motivators in the Judo group. This confirms earlier reports that physical activity shows positive correlations with many character traits, such as temperament, the sense of effectiveness of actions, self-confidence and others [19]. It is important, therefore, to remember the influence of codes and rules pertaining to individual martial arts on motivation and its constructs [18].

The greatest relative differences shown in figure for the measured components of motivation in the Judo and the Brazilian Jiu-Jitsu groups were for: "Extrinsic success", "Intrinsic success", and "Power". One can attempt to explain this by a greater prestige of Judo discipline, which is an Olympic sport. It should be noted, however, that judo players' striving for success, which is manifested by "Extrinsic success", was already signalled in earlier studies [20]. The graph for the profile of motivation presented in Figure 1 shows a very similar course of the profile lines, yet at a higher level for the group of persons practising judo. This suggests the same course of the process of motivation in both the examined groups, but at a higher level in the Judo group. Still, it should be noted that long-term studies show a large variation in psychological profiles of people practising judo and the fact that researchers are lacking sufficient tools to define motivational profiles for combat sports athletes [21, 22].

CONCLUSIONS

1. Higher total motivation for sports training in the judo group than in the Brazilian jiu-jitsu group suggests a positive impact of judo being part of the Olympic sports group.
2. A similar course of the motivational profile lines and the identical dominant components of motivation indicate the identical course of the motivation process for practising both judo and Brazilian jiu-jitsu, which, however, runs at different levels.
3. Both judo and Brazilian jiu-jitsu training gives people a sense of good health and physical fitness, and a sense of independence.

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