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Eating habits in judokas

Abstract

Purpose The aim of the paper was to find out eating habits of judokas from judo club in Holešov and students of programme Special Education of Security Bodies who practise combative sports including judo in University Campus in Brno-Bohunice. in the Czech Republic.

Design/methodology/approach: The questionnaire survey was attended by 66 judokas in total, out of which there were 34 male (52%) and 32 female (48%) respondents. Women aged 20-25 years (average age in female group was 19.34), men also aged 20-25 years (average age in male group was 22.24). The questionnaire was anonymous.

Research and practical limitations/implications: Majority of female respondents were students with non-sportive specialization, in men it is about a half (41% of respondents). Majority of respondents were practiced judo as a self - defense technique – this answer was given by 55.9% of men and 59.4% of women. 26.5% of men and 21.9% of women always pay attention to well-balanced diet. The highest number of respondents claims that they always respect specific need for energy income – 61.8% of men and 84.4 % of women. Merely 14.7% of men and 9.4% of women admitted that they do not consider specific energy income for sportspeople, and 61.8 % of men and 84.4% of women reported that they consider it sometimes. Respondents who use nutritional supplements mostly prefer carbohydrate-protein conjugates – this option was selected by 70.6% of men and 75% of women. Most respondents do not use supplements with vitamins and minerals – this answer was given by 64.7% of men and 75% of women.

Originality/value: Most of respondents are interested in their nutrition. Many of them need some education from sports nutritionists.

Keywords: eating habits, athletes, judokas, energy intake, supplements, vitamins, minerals

1. Introduction

Combat sports are a discipline of sport in which the rivalry 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.

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The sports-fight relies among other things on the infliction of knocks (boxing, kick boxing, taekwondo), or the usage of throwing or grappling (wrestling, judo) (Kalina et al., 2003; Kalina, 2000; Boguszewski et al., 2013). Judo is modified form of the old Japanese martial art – ju-jitsu.

Judo can be practiced by men in every age, of different physique and different fitness level. Judo can be practiced by women too. It offers benefits to all: people of any age or body type can practice it. Many people start as early as age 5 and some continue to practice the art through their 70's. For many people, judo provides a means to improve their general fitness level by increasing strength, flexibility, conditioning, coordination, and balance. For others, judo instills a sense of self-confidence, self-discipline, and self-control, all of which are necessary life skills. Parents like judo because it teaches their children discipline and respect. In addition to keeping its practitioners trim and fit, judo also provides people with invaluable self-defense skills (Pedro et Durbin, 2001).

The founder of judo Džigoro Kano, defined this sport in 1915 as the most effective way to utilize physical and mental energy (Hoare, 2009). The identity of combat sports and martial arts consists of the integration of three specific factors: pragmatic, utilitarian and mental. They influence on the psychophysical and moral education of a man. Therefore, sports and martial arts are much more than disciplines of sport. They are the form of the physical education, the defensive education and the philosophy (Kalina, 1997; Boguszewski et al., 2013).

2. History of judo

Judo history began in 1882 when Kano opened his small school and dojo in the Eisho-temple in Tokyo but a little work soon exposed the fact that judo was based on jujitsu which were based on kumi-uchi (samurai grappling) which was based on military sumo which was based on the Chikara kurabe of the ancient myths (Hoare, 2009).

As an educational method derived from the martial arts, judo became an official Olympic sport in 1964 (after being named as a demonstration sport at the 1940 Tokyo Olympic Games which were cancelled due to international conflict). The International Judo Federation is composed of National Judo Federations and Continental Unions. Each National Federation must be recognized as the sole federation authorized to represent its country in international sporting bodies by its Olympic Committee, which itself is duly recognized by the International Olympic Committee (www.ijf.org; [International Judo Federation Aims and Missions](#)).

Nowadays, judo is an Olympic, weight class combat sport with high-level competition from the cadet (under 18 years old, Youth Olympic Games, World Championship) to the veteran (World Championship) age categories (Franchini et al., 2011a; Franchini et al., 2011b; Julio et al., 2011; Escobar-Molina et al., 2015).

Judo is the most popular Olympic combat sport practiced throughout the world (www.intjudo.eu). In combat sports, competitors are grouped in weight classes to ensure more equitable matches, so that opponents of similar size and strength are paired against one another (Artioli et al., 2010). Athletes in other combat sports,

including wrestling, taekwondo, jujitsu and karate, use rapid weight loss prior to competitions (Kiningham et Gorenflo, 2001; Kazemi et al., 2005; Brito et al, 2012; Malliaropoulos et al., 2017).

3. Weight categories in judokas

Judokas compete in categories based on their body mass in order to match athletes for body and size to limit the risk of injury (Franchini et al., 2012; Aloui et al., 2016). There are 7 categories for both of them senior male and senior female contestants – show in table 1.

Table 1. Olympic weight categories for male and female judokas

Olympic weight categories for male and female judokas	
male	female
above 100 kg	above 78 kg
up to 100 kg	up to 78 kg
up to 90 kg	up to 70 kg
up to 81 kg	up to 63 kg
up to 73 kg	up to 57 kg
up to 66 kg	up to 52 kg
up to 60 kg	up to 48 kg

Source: Stubbs, 2009

This sport recognizes 67 take-down techniques, 29 immobilizing techniques and 19 strike techniques in total. These techniques differ depending on whether they focus on falls, fighting on ground, postures and throws, self-defence or advanced techniques. Each technique demands a particular physical strength, skills and speed. The founder of this martial art developed a ranking system distinguishing student (kyu) and master (dan) grades. There exist 5 student grades (in some countries 6) and 10 masters grades. A judoka who mastered techniques and skills of the particular grade wears a coloured belt – the colour is defined for each grade. Technical grades and their defined colours are given in table 2.

Table 2. Technical grades and their defined colours of belts in judo

Grade	Title	Belt	Colour
6 th kyu	roko-kjú	white	
5 th kyu	go-kjú	yellow	
4 th kyu	ši-kjú	orange	
3 rd kyu	san-kjú	green	
2 nd kyu	ni-kjú	blue	
1 st kyu	ik-kjú	brown	
1 st dan	šo-dan	black	
2 nd dan	ni-dan	black	
3 th dan	san-dan	black	
4 th dan	jon-dan	black	
5 th dan	go-dan	black	
6 th dan	roku-dan	black or red-white	
7 th dan	šiči-dan	black or red-white	
8 th dan	hači-dan	black or red-white	
9 th dan	ku-dan	black or red	
10 th dan	džú-dan	black or red	

Source: <http://www.judo-3.banda.cz/clanek/13982/pasky/>

4. Eating behaviours in judokas

Regular participation in exercise and sports activities confers numerous health- and performance-related benefits that contribute to a reduction in chronic diseases and

disabling conditions, increased longevity, and an enhanced quality of life (Garber et al., 2011; Maughan, 2014). The specific physiologic adaptations that occur with exercise activities depend on the frequency and duration of participation and the intensity of the sporting event. In general, the greater the product of the frequency, duration, and intensity of an exercise program, the greater the health- and performance-related benefits.

Torstweit et al. (2008) indicated that sporting facilities are usually full of opportunities to optimize athletic performance as well as body shape and size. Athletes may feel pressured to improve performance and body weight at any cost. Hence, some athletes are most likely to use unhealthy methods of changing their body weight or lean body mass with the belief that this change will enhance peak performance (Costarelli at Stamou, 2009; Rosendahl et al., 2009; Fortes at Ferreira, 2011; Fortes at al., 2014).

Making weight is a very common practice among judokas. Immediately prior to a competition, contestants are sorted into 7 sex-specific weight categories (table 1), with the objective of ensuring equitable matches in terms of muscular strength and leverage (Artioli et al., 2009). Unfortunately, many judokas engage in rapid weight loss for a few days before competition in order to compete in a lower weight category and thereby increase their chances of victory (Artioli et al., 2009; Franchini et al., 2012). The tactics used include reduced ingestion of liquid, use of saunas, wearing impermeable plastic blouses and suits to increase sweating, a reduced overall energy intake and/or fasting prior to the weigh-in, and a selective reduction in the intake of carbohydrate or fat (Franchini et al., 2012). Some competitors resort to more aggressive tactics, such as forced vomiting (Filaire et al., 2007) and the ingestion of various appetite suppressants, laxatives and diuretics (Franchini et al., 2012; Aloui, 2016).

Weight management started to be a main concern in judo since the 1950s, when judo turned into a modern, international, and institutionalized sport, and weight categories were introduced in competitions (Villamón et al., 2004). Through decades, weight categories have been progressively established and increased for competition groups of different gender, age, and level of competition, placing the “weight issue” – i. e., the ways in which judo athletes face weight control – in the core of competitive judo culture (Pettersson et al., 2013; Escobar-Molina et al., 2014).

5. Material and methods

Respondents were judokas from Judo Holešov team who practise within the area of Police College and High Police School of Ministry of the Interior in Holešov (Czech Republic) and students of programme Special Education of Security Bodies who practise combative sports including judo in University Campus in Brno-Bohunice (Czech Republic). The questionnaire was anonymous. The questionnaire survey was attended by 66 judokas in total, out of which there were 34 male (52%) and 32 female (48%) respondents. Women aged 20-25 years (average age in female group was 19.34), men also aged 20-25 years (average age in male group was 22.24).

6. Results and discussion

Opening question focuses on the information whether respondents are professional judo competitions or they have other civil occupation. Figure 1 divides respondents according to this aspect.

Figure 1. Respondents according to their occupation or study

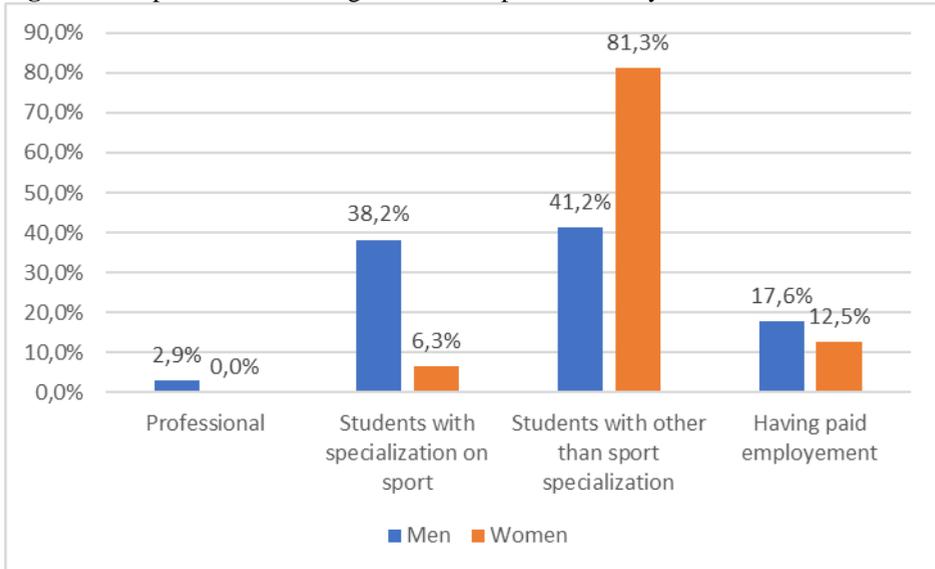


Figure 1. Respondents according to their occupation or study

Source: Study of authors

Majority of female respondents were students with non-sportive specialization, in men it is about a half (41% of respondents). Students with sport specialization were represented by 38.2% of men and 6.3% of women. 17.6% men and 2.5% women are working. Merely 3% of male respondents are professional judokas; in female group there were no professionals at all.

Next question discovered technical level of examined judokas. Their answers are given in figure 2.

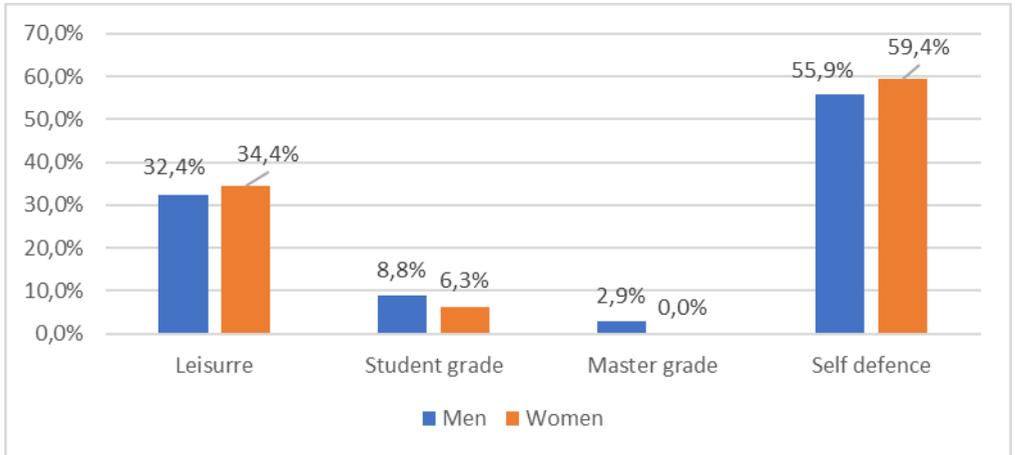


Figure 2. Technical level of judokas' respondents

Source: Study of authors

As obvious from the graph, vast majority of respondents practise judo as a self - defence technique – this answer was given by 55.9% of men and 59.4% of women. Merely 2.9% of respondents have achieved a master grade.

Next questions focused on dietary habits of respondents. Following question aims to finding whether and to which extent the respondents are mindful of a balanced diet. Results are summarized in figure 3.

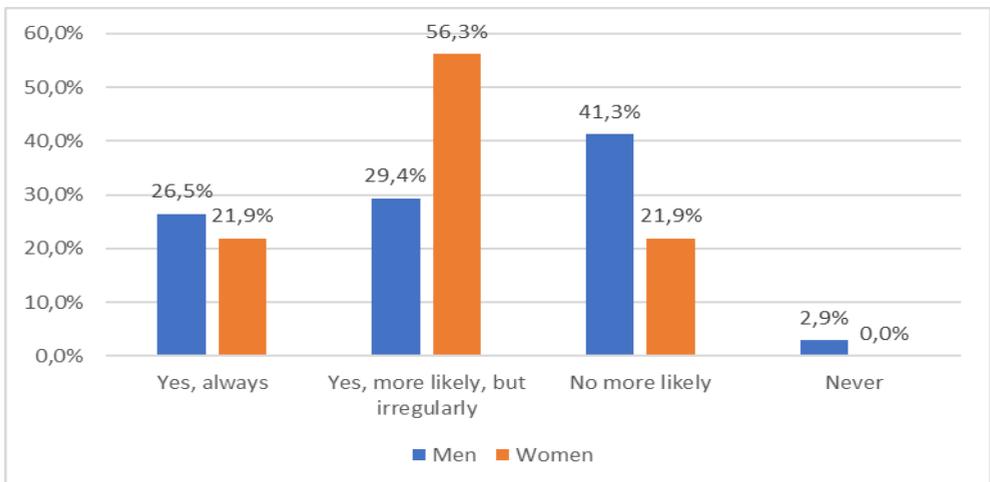


Figure 3. Respondents care about balanced diet

Source: Study of authors

26.5% of men and 21.9% of women always pay attention to well balanced diet. Most respondents answered that they care about balanced diet rather irregularly (29.4% of men and 56.3% of women gave this answer). No woman and only 3% of men admitted that they never consider about balanced diet.

Next question asked whether in their daily diet, respondents adjust to specific energy needs for sportspeople. Answers are given in figure 4.

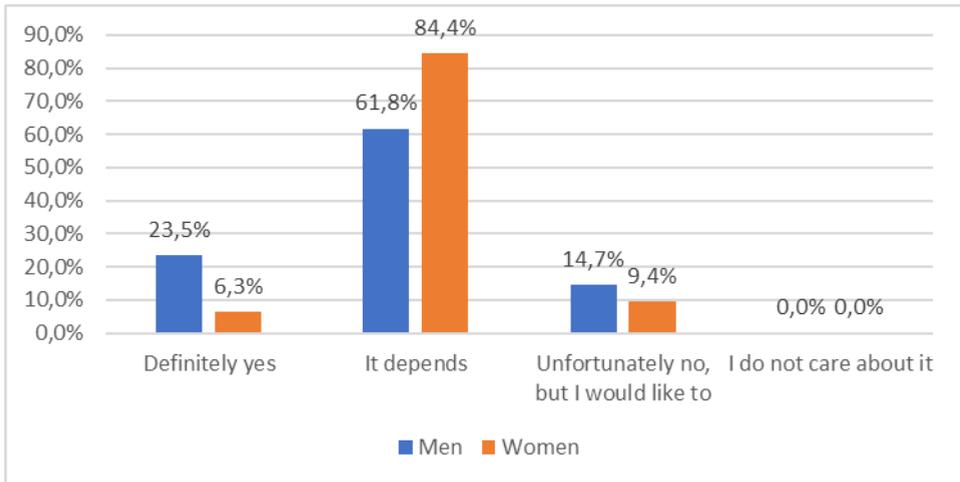


Figure 4. Adjustment to energy income for sportspeople in respondents' diet

Source: Study of authors

The highest number of respondents claims that they always respect specific need for energy income – 61.8% of men and 84.4 % of women. 14.7% of men and 9.4% of women reported that they do not consider specific need for energy income for sportspeople, but they would be happy to do so. This might be either because of impossibility to prepare all meals at home or lack of information on their daily energy income and to have it under control. None of the respondents answered that they do not care about specific nutritional needs of sportspeople.

Question asking whether judokas are aware of their daily energy income is directly connected with the previous one. Responses are shown in figure 5.

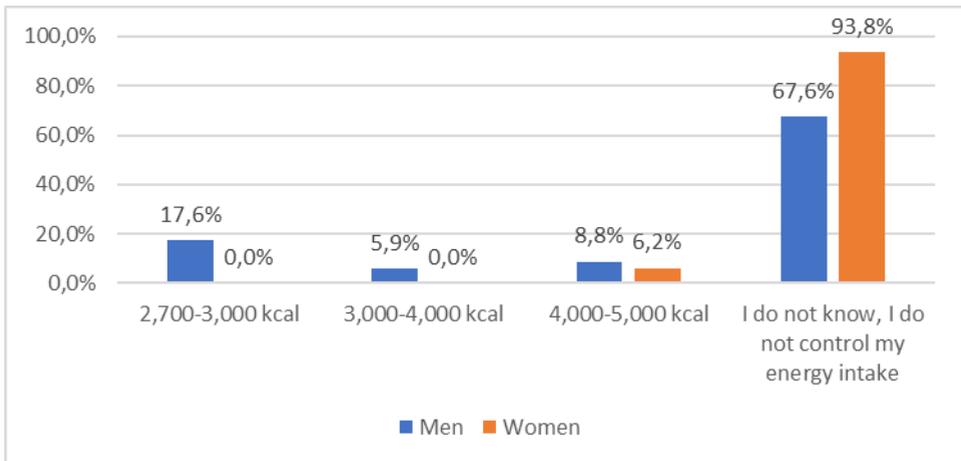


Figure 5. Daily energy income of judokas

Source: Study of authors

Despite the fact that in previous graph 4 merely 14.7% of men and 9.4% of women admitted that they do not consider specific energy income for sportspeople, and 61.8 % of men and 84.4% of women reported that they consider it sometimes, results summarized in figure 5 do not actually correspond with results of figure 4. These show that 67.5% of male and 93.8% of female respondents do not control calorific value of their food at all – they ticked the option “I do not know, I do not control my energy intake”. Other respondents are of the opinion that their energy income is lower than recommended for judokas, which is 5,680 kcal (see chapter Nutrition of judokas) (Juříková et Nguyen, at print).

As in other combat sports, many judo athletes try to reduce their body mass to have some physical advantage over opponents (Franchini et al., 2012) or due to psychological reasons, as feeling himself or herself as a real athlete or to perceive an increased focus and commitment to competitive goals (Pettersson et al., 2012; Pettersson et al., 2013). Evidence shows that this behaviour is found in males (Brito et al., 2012; Mendes et al., 2013), females (Boisseau et al., 2005; Kowatari et al., 2001) and in studies investigating both genders (Artioli et al., 2010a; Fabrini et al., 2010; Prouteau et al., 2006; Prouteau et al., 2007), from local to national level (Artioli et al., 2010b; Boisseau et al., 2005), for international level (Kowatari et al., 2001; Prouteau et al., 2006; Prouteau et al., 2007) and for mixed competitive levels (Brito et al., 2012; Fabrini et al., 2010), and it is experienced from very early ages such as 12 years (Artioli et al., 2010b; Brito et al., 2012; Escobar-Molina, 2014).

Last two questions aimed to finding whether the examined judokas use dietary supplements, and which. Answers to question aiming nutritional supplements are summarized in figure 6, and figure 7 show answers to question aiming at vitamins and minerals.

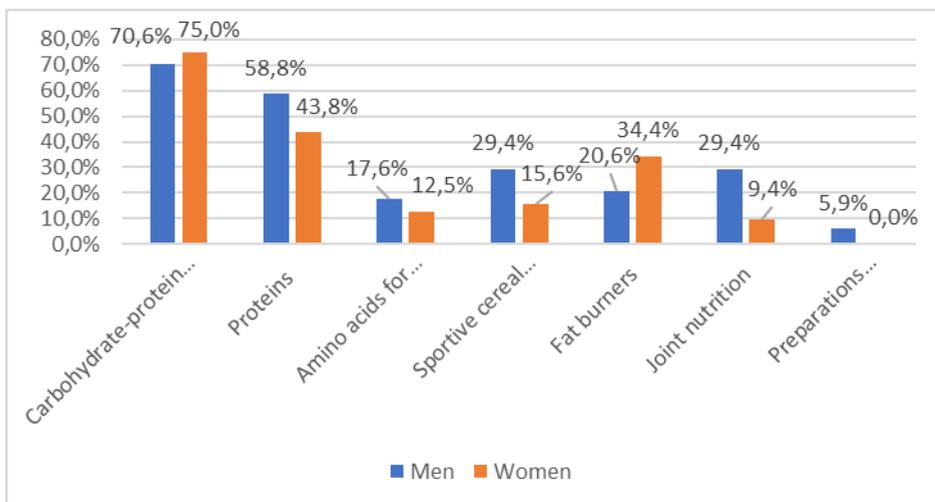


Figure 6. Usage of specific nutritional supplements by examined judokas
Source: Study of authors

Legend:

Carbohydrate protein.... = carbohydrate-protein conjugates

Proteins

Amino acids for = Amino acids for muscle growth and regeneration

Sportive cereal = Sportive cereal mixtures and bars

Fat burners

Joint nutrition

Preparations = Preparations enhancing regeneration

It is obvious from figure 6 that respondents who use nutritional supplements mostly prefer carbohydrate-protein conjugates – this option was selected by 70.6% of men and 75% of women. These preparations are reasonable source of energy (from carbohydrates) as well as building substances for muscle mass regeneration (from proteins).

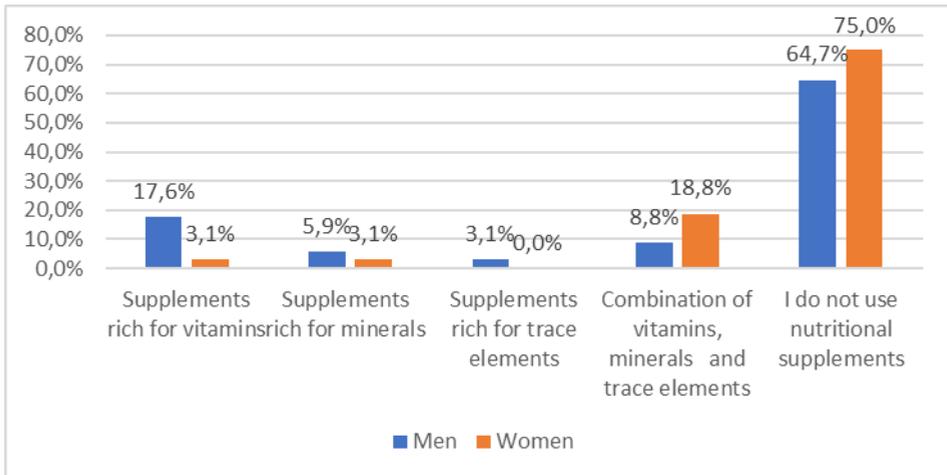


Figure 7. Usage of supplements with vitamins and minerals by examined judokas

Source: Study of authors

As the graph shows, most respondents do not use supplements with vitamins and minerals – this answer was given by 64.7% of men and 75% of women. Other respondents, who use food supplements, mostly selected supplements rich for vitamins (17.6% of men), while women typically preferred combination of vitamins, minerals and trace elements (Nguyen, 2017). From nutritional aspects, this combination can be highly recommended not only to judoka competitors, but to sportspeople in general.

Maughan (2014) claim the effects of vitamin and mineral supplementation on athletic performance have been studied in many types of athletes and most researchers have not reported beneficial effects. Knechtle with his colleagues (2008) examined the effect of vitamin and mineral supplementation prior to a multistage, ultra-endurance run on race performance at the 2006 Deutschlandlauf in Germany. In this race, athletes ran across Germany from north to south, running more than 1 200 km over 17 consecutive stages. They studied 20 male ultra-endurance runners by asking them to first complete a questionnaire concerning their use of vitamin and mineral supplements 4 weeks prior to the race. Based on the questionnaire, the researchers reported that 6 runners consumed multivitamin, 5 consumed vitamin E, 4 consumed vitamin C, 2 consumed vitamin B complex, 1 consumed folate, and 11 reported no vitamin supplement intake. 7 runners stated that they consumed a multi-mineral supplement, while 9 consumed magnesium, 5 consumed zinc, 3 consumed iron, 3 consumed calcium, and 8 reported no mineral supplementation use. Perhaps unsurprisingly, Knechtle with his colleagues (2008) reported no differences in performance between athletes who consumed vitamin and/or mineral supplements and those who reported no intake (Maughan, 2014).

7. Conclusions

The aim of the paper was to find out eating habits of judokas from judo club in Holešov and students of programme Special Education of Security Bodies who practise combative sports including judo in University Campus in Brno-Bohunice. in the Czech Republic. The questionnaire survey was attended by 66 judokas in total, out of which there were 34 male (52%) and 32 female (48%) respondents. Women aged 20-25 years (average age in female group was 19.34), men also aged 20-25 years (average age in male group was 22.24). Majority of female respondents were students with non-sportive specialization, in men it is about a half (41% of respondents). Majority of respondents were practiced judo as a self - defense technique – this answer was given by 55.9% of men and 59.4% of women. 26.5% of men and 21.9% of women always pay attention to well balanced diet. The highest number of respondents claims that they always respect specific need for energy income – 61.8% of men and 84.4 % of women. Merely 14.7% of men and 9.4% of women admitted that they do not consider specific energy income for sportspeople, and 61.8 % of men and 84.4% of women reported that they consider it sometimes. Respondents who use nutritional supplements mostly prefer carbohydrate-protein conjugates – this option was selected by 70.6% of men and 75% of women. Most respondents do not use supplements with vitamins and minerals – this answer was given by 64.7% of men and 75% of women.

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