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Eating habits in students with sports specialization

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Abstract

University studies with its increased psychological demands on all students in comparison to secondary schooling causes changes in their eating habits. Moreover, university degree programmes with sports focus may also be associated with increased physical load of students.

This work investigates students' dietary habits at the Faculty of Sports Studies of Masaryk University in Brno (Czech Republic) using a questionnaire survey. 80 persons (45 men and 35 women) were randomly selected to participate in the survey. The average age of respondents was 20.18 years for men and 20.56 years for women. The average BMI was 24.48 for men and 22.01 for women. All subjects were found in the normal weight range according to BMI.

The findings of the questionnaire survey showed that while men typically (49.8%) eat 5 times a day, most women consume (65.7%) 4 daily meals. Furthermore, the frequency of consumption of main meals, i.e. breakfast, lunch and dinner, was examined. It is gratifying to find that most students - both men (66.7%) and women (65.7%) have breakfast daily, which is in agreement with nutritional recommendations. Lunch is considered the most important meal of the day. Lunch is also consumed by most respondents daily - the answers are the same as the answers to the previous question: 66.7% of men and 65.7% of women said that they have lunch daily. Concerning the consumption of dinners, most men (again 66.7%) have dinner daily, most women (34.3%) have dinner daily and the same number (34.3%) have dinner most days of the week, but not daily. Regarding the amount of fluids, most men (51.1%) reported that they drink 1.5-2 litres of fluids daily, while most women (66.7%) reported that they drink 2-3 litres of fluids daily. These results are related to the difficulty of various sport activities during the day.

Keywords: meal, breakfast, lunch, dinner, students, sport

1. Introduction

Nutrition of university students is more or less comparable to adults performing light work. However, university students are supposed to face higher mental strain. It is recommended that people with sedentary jobs should increase their intake of fibre, i.e. fruit, vegetable and wholemeal bread. Fibre enhances intestinal peristalses, and it also lowers energy, fat and cholesterol intake. This is really important, because these people tend to common diseases of civilization, particularly constipation and cardiovascular diseases.

Since heavy and hearty dishes dull the attention, students and people working mentally are advised that they should consume easily digestible dishes in small and frequent portions. Mentally working people should eat sufficient amount of proteins, B

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vitamins to support mental activities, A vitamin to support eyesight even in dark rooms and C vitamin to prevent infections, which is vital for people sharing a room – university lecture hall or study room. Mental work also requires sufficient intake of iron.

University students represent an autonomous social group, determined by preparation for future career. Prevailing activities focus mainly on cognitive functions and acquiring professional skills. The only activity affecting biological sphere of students is Physical and Sport Education. Its aim at universities is that students would understand its importance as a key factor of active physical and mental health. However, works by many university teachers (Cepková, 2003; Havranová, 2003; Korček, 2004a; Urvayová, 1999) repetitively bring information about changing lifestyle of numerous university students. Their lifestyle can be described as hypokinetic, i.e. lifestyle lacking physical activity, with unsatisfactory structure of performed activities and minimization of physical workout (Hrčka, 2000; Rais, 2004; Korček, 2004b; Juříková, 2009). Above mentioned finding is not valid in universities with sport specialization. Their students have to, besides mental strain connected with studies, face the physical load connected with sport trainings which are often on daily basis.

The aim of the study is to examine eating habits of university students with sport specialization. For purposes of this papers we chose students of Faculty of Sport Studies, Masaryk University in Brno, Czech Republic.

2. Materials and methods

Respondents for this study consist of the first-year students of Regeneration and Nutrition in sport at the Faculty of Sport Studies in Masaryk University in Brno. Survey was attended by 80 students (45 male and 35 female). Information was obtained via questionnaire method. Two types of questionnaire were used: standardized questionnaire created at the Faculty of Medicine in Masaryk University in Brno (Brázdová et Fiala, 1998) and author's questionnaire by the authoress of this text. Both questionnaires were anonymous. The first one covered questions concerning eating habits, physical activities and psycho-social strain and perception and watching one's health conditions. The second questionnaire examined drinking regimen and eating habits with particular aim to consumption of addictive substances. Both questionnaires were rather thorough, therefore, this work deals only with some of the questions. The first part of the questionnaire focused on basic anthropometric parameters, such as body weight, height and calculated body mass index (BMI). BMI value was calculated on the base of body weight and height using following formula:

$$\text{BMI} = \frac{\text{body weight [kg]}}{(\text{body height [m]})^2}$$

WHO defines obesity when BMI is higher than 30, in case of BMI higher than 40 we speak about morbid obesity. It is not only the volume of fat, but also its distribution within the body, that is important to assess the risk. Body mass index classification is, similarly to any other classification of biological descriptors, subjected to significant degree of natural variability. Terms such as “overweight” and “obesity” are used for the specification of particular BMI values (Gailiūnienė et al., 2002). Table 1 shows BMI categories for men and women.

Table 1. Categories of BMI ranges for men and women

Category	Men	Women
Obese	> 30.0	> 30.0
Robust (Pre-obese)	25.1 – 30.0	24.1 – 30.0
Normal range	23.1 – 25.0	22.1 – 24.0
Slim	18.0 – 23.0	17.0 – 22.0
Underweight	< 18.0	< 17.0

Source: Kleinwächterová et Brázdová, 2001

3. Results and discussion

There were 100 questionnaires distributed among students, both questionnaires in one fold. Students were informed how to fill in, but they did not answer on-site, but they took the questionnaires home. After detailed reading, some students denied to attend the survey, and some did not answer all questions, so merely 80 questionnaires could have been used for further examination. Rate of return was 80%.

Opening questions focused on basic anthropometric parameters of students, such as age, body weight and height and calculated body mass index (BMI). Basic anthropometric parameters of students are given in table 2.

Table 2. Basic anthropometric parameters of students

Students	Number	Anthropometric parameters			
		Age [years]	Body weight [kg]	Body height [m]	BMI
Men	45	20.18	80.00	1.80	24.48
Women	35	20.56	61.46	1.67	22.01

Source: Study of the author

Table shows that average age of respondents was 20.37 years, which corresponds with the first year of university studies. However in this case, the number is rather coincidental, as many students of Faculty of Sport Studies (later as FSpS) do not apply for this study immediately after secondary school graduation. Many are professional sport people who find the need for university studies after years of professional sport carrier. They sometimes apply for FSpS after getting retired from active sport, considering a new profession of sport trainer or coach. These people mostly prefer combined study programs.

Representation of men and women in survey corresponds with ratio of the faculty students; number of studying men and women is similar with slight prevalence of men. Body weight is significantly different for men and women, which is rather predictable. Not all students have low body weight, which results from the fact that students perform both speed sports where low weight is required, and power sports where body weight is often higher than body weight of comparable sample of common population.

BMI is not precise parameter of population slenderness, since it is merely so called height-weight index. Some sport people might have heavy skeleton, high volume of mass muscle instead of fat, which factors are not taken into account for BMI calculation. BMI values in all respondents are in normal range (see table 1). Similar results were obtained by Vainoras (2002) who examined 4 groups of people in Latvia: students of 1st-year of Medical University in Kaunas, beginning sport people, sport people after 1-year sport activity and trainers.

Further questions focused on eating habits. First, we aimed at frequency of meal consumption during a day. Answers are given in table 3 graph 1.

Table 3. Frequency of meal consumption during a day

Students	Number of meals				
	> 5	5	4	3	< 3
Men	0	22	15	8	0
Women	0	12	23	0	0

Source: Study of the author

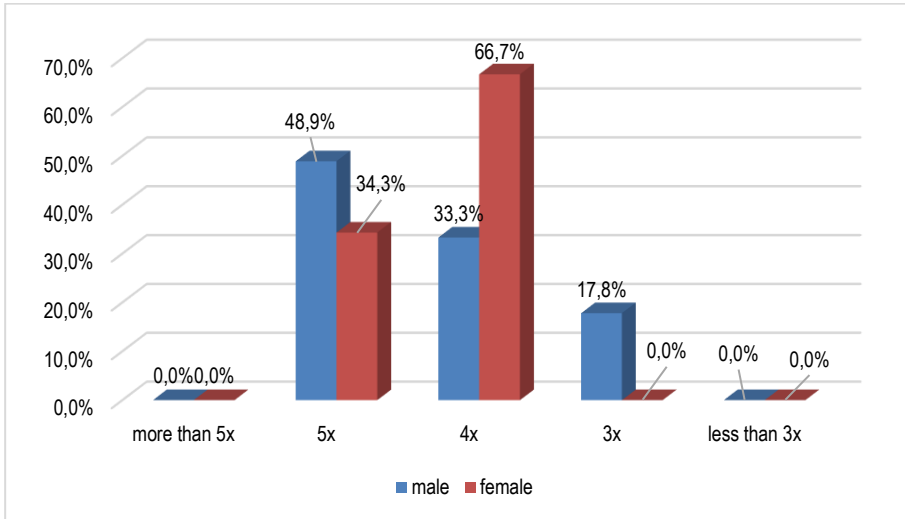


Figure 1. Frequency of meal consumption during a day

Source: Study of the author

As obvious from the graph, male respondents typically consume 5 meals a day - this answer gave 49.8% respondents, while most women eat 4 meals a day (66.7% of female students). Sport people need minimally 5, but rather 6 portions of food a day, but lesson schedule with frequent change of classrooms followed by afternoon or evening training, often obstruct FSpS students from eating more smaller portions during a common day.

Following part brings the analysis of the answers to questions whether students eat breakfast, lunch and dinner. Closed questions offered answering options: every day, most days of the week, sometimes (about a half of weekdays), seldom, never. Table 4 and graph 2 show the results of processing the question how often students have breakfast.

Table 4. Frequency of eating breakfast in respondents

Students	Frequency of eating breakfast				
	daily	mostly	sometimes	seldom	never
Men FSpS	30	8	7	0	0
Women FSpS	23	12	0	0	0

Source: Study of the author

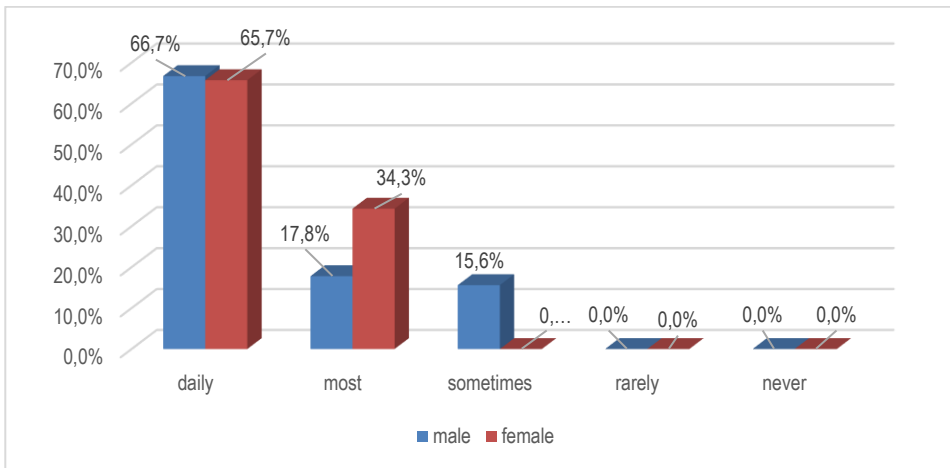


Fig 2. Frequency of eating breakfast in respondents

Source: Study of the author

Table 4 and graph 2 show that most students eat breakfast every day – answers given by 66.7% of men and 65.7% of women. Merely 7 men (and none woman) said that they eat breakfast sometimes, lower frequency of eating breakfast was not reported at all. This is very positive finding which closely corresponds with nutrition specialists recommendation.

Next table and graph bring answers concerning eating lunch.

Table 5. Frequency of eating lunch in respondents

Students	Frequency of eating lunch				
	daily	mostly	sometimes	seldom	never
Men	30	15	0	0	0
Women	23	10	2	0	0

Source: Study of the author

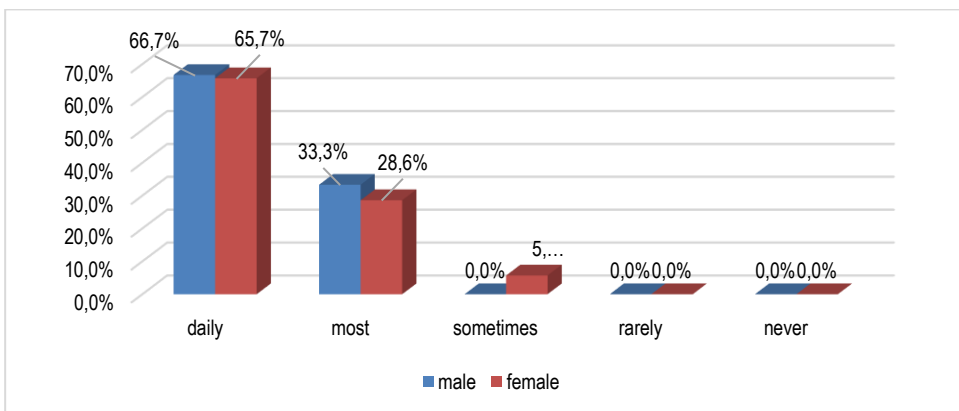


Fig 3. Frequency of eating lunch in respondents

Source: Study of the author

Graph 3 shows proportional representation of students whose answers to question about frequency of lunch eating are given in table 4. Most students consume lunch daily. This answer was given by 66.7% of men and 65.7% of women. Two female students stated that they eat lunch only sometimes, which is in conflict with nutrition recommendations saying that lunch should be consumed daily and should represent about 30% of daily energy intake. Also the option mostly is considered as satisfactory, because within the university lesson schedule, it is easy to understand that lunch can be omitted due to the lack of time.

Dinner is often the only meal of the day, when all family meets together at the table. Nevertheless, many university students live in dormitory and evening session with family is thus out of the question. Students approach to dinner is shown in table 6 and in graph 4 it is expressed in percentage.

Table 6. Frequency of eating dinner in respondents

Students	Frequency of eating lunch				
	daily	mostly	sometimes	seldom	never
Men	30	15	0	0	0
Women	12	12	11	0	0

Source: Study of the author

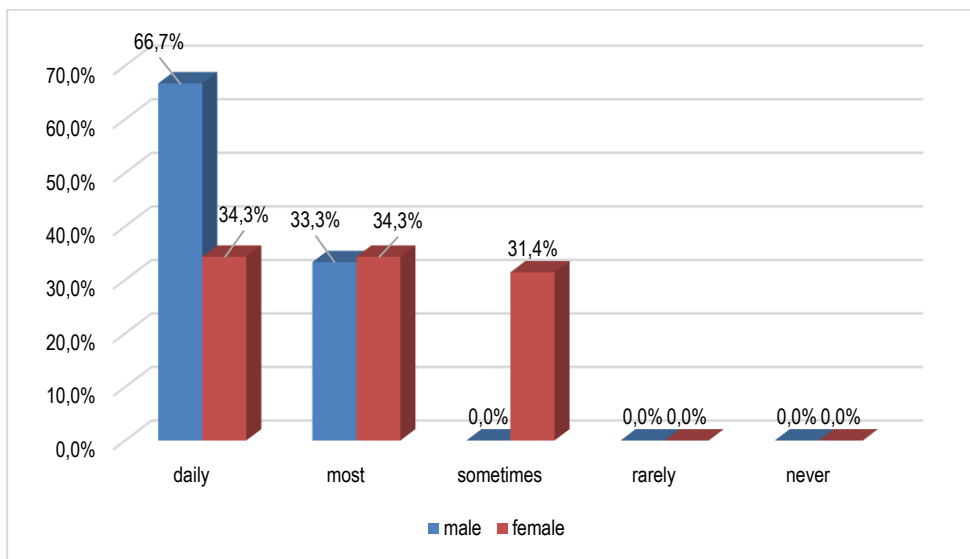


Fig. 4. Frequency of eating lunch in respondents

Source: Study of the author

From figure 4, it is apparent that majority of male respondent eats their dinner daily 66.7%. In women it is only 34.3% who have daily dinner, but the same percentage eat dinner most days of the week. Worth mentioning is the fact that there is a high number of women who eat dinner only sometimes – 31.4% of female respondents. These are most likely women who perform sports like dance or gymnastics and thus, it is important for them to keep low weight.

While eating habits of university students in the Czech Republic slightly varies between men and women due to their desire for a slim body, Polish youth prefer the same food without any respect to gender (Przysławski et al., 2001; Wądołowska et al., 2001; Juříková, 2005; Juříková et Wądołowska, 2005). Demand for low-fat food is also registered in university students in Austria (Bauerová, 2001; Dvořáková-Janů, 2000). Students in England, America and Mediterranean countries differ too much in their eating habits to compare their authors' conclusions with Czech students (Park et al., 2001; Pavčić et al., 2001; Portella et al., 2001; Šulcová, 2001; Kvasničková, 2000).

Final questions this study deals with, concerns drinking regimen. Table and graph below show volume of fluids which respondents drink during a day.

Table 7. Daily fluid intake in respondents

Students	Volume of fluids				
	>3 l	2 – 3 l	1,5 – 2 l	1 – 1,5 l	<1 l
Men	0	22	23	0	0
Women	0	23	12	0	0

Source: Study of the author

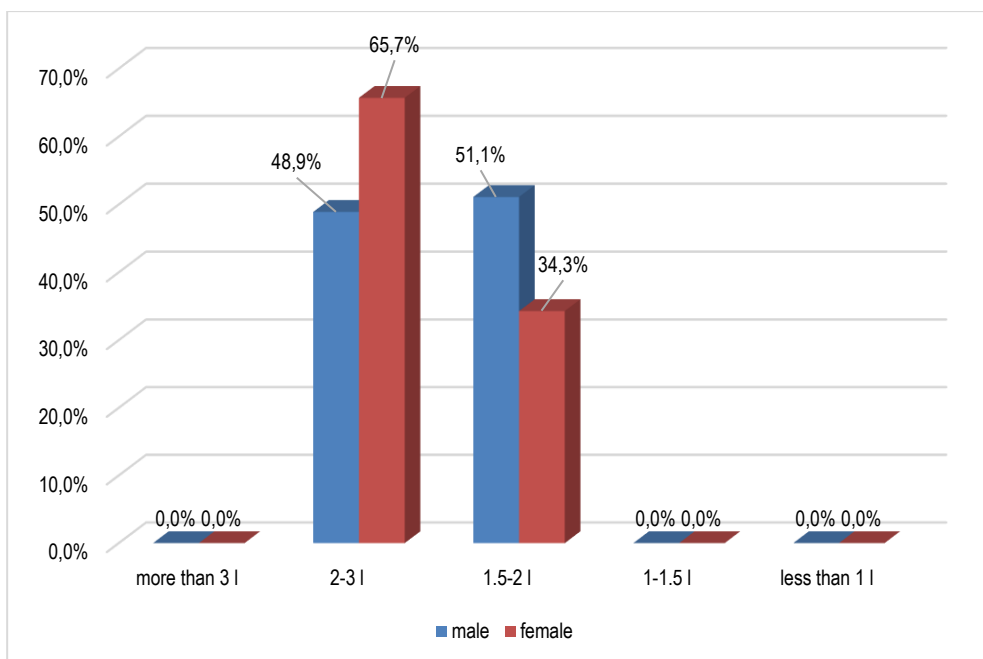


Fig. 5. Daily fluid intake in respondents

Source: Study of the author

As obvious from table 7 and graph 5, drinking regimen of students is good. Majority of women (65.7%) drink 2–3 l of fluids daily. Men drink 1.5–2 l (51.1%) or 2–3 l of fluids daily (48.9% of male respondents), which depends on physical load of performed sport activity.

Last question concerns type of fluid which students drink the most. Answers are given in table 8.

Table 8. Type of fluid which students drink the most

Fluid type	Students	
	Men	Women
Bottled water	8	23
Non-sweetened mineral water	15	12
Sweetened mineral water	7	0
Tea	0	0
Milk	0	0
Coffee	0	0
Juices	0	0
Sweet beverages	0	0
Water with syrup	15	0

Source: Study of the author

We can see from table 8 that most popular drink for female students are non-sweetened drinks, such as bottled water (most frequent answer by women - 65.7%), or non-sweetened mineral water (most frequent answer by men - 33.3%). This is probably connected with general popularity of water among students, which is visible even in demand for drinks in school canteen of Masaryk university which is also used by FSpS students and where water is preferred choice within the offer of various sweetened beverages. Students are educated in the nutrition issue, so they did not consider coffee as a suitable drink to keep drinking regimen, since coffee rather dehydrate the body than supply hydration. Even though this question instructed to select only the most frequent type of fluid, two students AF reported other drinks too. One student reported besides bottled water also non-sweetened mineral waters and the second student chose four options: bottled water, non-sweetened mineral water, milk and sweetened mineral water. Concerning preferences and intake of fluids in university students, Forejt and Hrstková (2005) found out that students prefer tea and juice, however the most common drink is tea and mineral water. Provazníková et al. (2002a) found serious insufficiencies in quantity of fluid intake in university students. Relax and healthy lifestyle are important prerequisites to keep performance and concentration for studies and help to suppress fatigue from learning process. Physical activity is desired change after demanding mental work, it enhances longer studying and concentration by lowering physical anxiety, improves blood supply to brain and digestion and support healthy sleep. Not all students respect principles of relax and proper nutrition. Further deficiencies in nutrition and eating regimen are, according to Provazníková, in irregular eating during the day, postponing the main dish of the day to evening time, nutritionally rich meals while low energy workout, insufficient amount of dairy products, fruit and vegetable, fish, increased consumption of sausages and fatty food, eating in fast food restaurants and also extreme dietary trends (Provazníková et al., 2002b; Juříková, 2009; Juříková, 2010).

4. Conclusions

The study found out that respondents of the Faculty of Sport Studies are aware of proper nutritional principles and they mostly keep them. It is given both by their field of study -

Regeneration and nutrition in sport which directly prepares the students not only for active sport carrier, but also for the role of sport masseur or nutritional therapist.

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