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# FOOD HABITS AND PHYSICAL ACTIVITY OF STUDENTS AT THE UNIVERSITY OF SARAJEVO 

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#### Abstract

Starting to study at the University and getting new responsibilities changes the way of lifestyle. The change is mostly maintained in the way of eating and (non) existence of physical activity. The aim of the research was to determine the food habits and physical activity of the students at the University of Sarajevo. The study covered 1038 ( 694 female and 344 male) students from $1^{\text {st }}$ to $5^{\text {th }}$ year of the faculty, 18 to 43 years of age. Used method was a questionnaire designed for this research, and based on previously used questionnaire and it was conducted online. Results show that the largest number of students ( $48.0 \%$ ) consume 2 meals a day, $81.9 \%$ of students thinks that the breakfast is the most important meal but only half of them ( $53.7 \%$ ) always have breakfast. $37.2 \%$ of students usually have eggs for the breakfast, $30.8 \%$ sandwich, $19.9 \%$ slice of bread with toppings and $12.1 \%$ eat cereals. $11.4 \%$ of students carry a meal from home: $11.1 \%$ take fruits and $35.4 \%$ take the sandwich. $89.2 \%$ of students buy snacks in fast food and bakery: hamburger ( $60.0 \%$ ), sandwich $(33.0 \%$ ), hotdog ( $6.7 \%$ ), croissant $(38.1 \%$ ), dough with cottage cheese $(27.0 \%)$, pie ( $17.5 \%$ ), dough with the hotdog ( $11.1 \%$ ). Most of the students ( $62.5 \%$ ) consume water, $5.8 \%$ drink juice, while $31.7 \%$ consume both. $65.2 \%$ are involved in physical activity $1-2$ times weekly for 30 minutes, $34.3 \%$ are involved $2-3$ times a week for 60 minutes and $66.1 \%$ of student are physically active every day for 90 minutes. Those who are not active „blame „insufficient leisure time (48.1\%), obligations at the faculty $(39.6 \%)$, lack of money ( $12.3 \%$ ). Most of the students ( $33.7 \%$ ) sleep for $8 \mathrm{~h}, 32.3 \%$ sleep for $7 \mathrm{~h}, 24.5 \%$ sleep for 6 h . Conclusion: Inadequate eating habits, insufficient time and too much obligations, but also a high percentage of students involved in physical activity and enough sleep, points the need to open students' canteens based on the principles of proper nutrition and tailored to students' income.


Key words: students, food habits, physical activity, sleeping, University of Sarajevo.

## Introduction

Choosing to study at the University has big impact to persons' lifestyle: leaving parents' home (in some cases), new environment, new obligations, new friends, changing food habits, for many gaining incomes and making money, introduction into professionalization. Food habits differ upon lectures' and exams' schedules. Many students which did have good food habits make them worst during the study. Most of the students are led by: the shorter the preparation the better (Taljić, 2018; Deliens et al., 2014).

When it comes to eating, quantity is not important as how to distribute calories equally and consumption time. There are three main meals and two snacks.

Breakfast is the meal most often skipped by students (Colić Barić et al., 2003; Pincan et al., 2015) and this meal has a great influence on cognitive abilities and the flow of information in learning memory (Pollitt and Mathews, 1998). The reason for skipping breakfast can be found in the absence of breakfast eating habits, lack of time or because they are not supervised by parents as children and adolescents who often consume this meal (Colić-Barić and Šatalić, 2002). Obesity is considered a major problem of today, but due to the time students spend on social networks that impose attitudes about a beautiful, socially acceptable, and therefore ideal physical appearance, students may have a wrong
perception of their own body mass (SampasaKanying et al., 2016; Hazzard et al., 2017). Students' nutrition includes eating in a home-school restaurant, college canteens, shops, bakeries and fast foods. A small number of students are adequately educated about proper nutrition. The unhealthy diet that students mostly practice is the one that looks attractive, simple, fast-stored and inexpensive. In addition to food, unhealthy products, drinks, sweets, snacks and various foods are used.
All habits are formed during adolescence, and dietary habits are also of great importance (Taljić and Toroman, 2016; Lošić, 2014). By adopting proper nutrition habits, it is possible to effectively prevent the occurrence of chronic non-communicable diseases, especially obesity, cardiovascular diseases and type 2 diabetes, which are continually increasing globally (Rossiter et al., 2012). Water is neither energy nor building material, but it belongs to the most important nutrient without which there wouldn't be life. The human body needs regular water intake, so it can function normally (Malacko and Rađo, 2004). By analyzing professional and scientific publications dealing with the student's health behavior research, a group of local authors emphasizes that students represent a population with a special risk of causing the consequences of physical inactivity and inadequate nutrition. According to their faculty commitments, students spend most of their days outside the home, which leads to unreasonable nutrition and choices easily accessible to the socalled fast food (Đurić et al., 2013). Food choices can also be influenced by the desire to regulate body mass or religious beliefs that restrict the choice of foods (Lee and Loke, 2005). Proper nutrition ensures a sufficient quantity and optimal relationship between the proteins, the carbohydrates, the fats, the vitamins, the minerals and the liquids, meeting the needs of the body for energy, building and protecting materials (Mandić, 2007). As well as allowing normal functioning of the organism, food contain a wide range of nutrients and other substances, and may also have beneficial effects on health preservation (Šatalić and Alebić, 2008).
Seated life style and poor dietary habits are factors that contribute to some of the most common types of cancer: breast cancer, uterine cancer, cancer of the esophagus and kidney cancer. Many diseases and conditions can be prevented or at least diminished by the timely change in dietary and life habits. In addition, it is very important to address the causes of poor nutrition and physical inactivity (Academy of Nutrition and Dietetics, 2013; Prentice et al., 2007).

The aim of the research was to determine the food habits habits and physical activity of the students at the University of Sarajevo.

## Methods

The study was conducted on a student population (I and II cycle of studies) at the University of Sarajevo. The analysis was based on $N=1038$ students who completed a questionnaire, of which 694 female (69\%) and 344 male (33\%) respondents. The minimum age of students was 18 years and maximum 43 years, while the average age of students was $22.14 \pm 2.494$. In order to obtain reliable data, a sample of respondents was taken from the 26 faculties of the University of Sarajevo. The research was in accordance with the Helsinki Convention and the respondents participated voluntarily.
Used method was a questionnaire designed for this research, based on previously used questionnaires (Taljić and Toroman, 2016). For the purpose it was conducted as an online questionnaire. The first part consisted of socio - demographic characteristics of participants: gender, year of study and the age. In the second part students were questioned about their eating habits and physical activity. The questionnaire was anonymous, combined type and contained 19 questions. The questions were closed and open type. The data obtained was processed with the statistical program package SPSS 20.00 and Microsoft Excell 2010. Before data processing, all data has been reviewed. Questionnaires not properly filled out were excluded from the database entry and further processing. The data was then processed by basic descriptive statistics for the display of central and dispersion parameters: arithmetic mean (AS); Standard deviation (SD); minimum and maximum score (min, max), frequencies and percentages (\%).

## Results

Results were summarized and only relevant are being presented due to the recommendations for the manuscript. Based on the results presented in table 1 it can be concluded that the largest number of students (48.0\%) consume 2 meals a day, 32.0\% consume 3 meals a day with one snack, 19.0\% consume 3 meals with two snacks 8. Results presented in Table 2 state that for the majority of students (81.9\%) breakfast is the most important meal, lunch for $16.6 \%$ and dinner for $1.5 \%$ of students.

Table 1 Number of meals and snacks

|  | Variable | Frequency | Percent |
| :--- | :--- | ---: | ---: |
| Valid | 1 meal | 12 | 1.0 |
|  | 2 melas | 498 | 48.0 |
|  | 3 meals, 1 snack | 334 | 32.0 |
|  | 3 meals, 2 | 194 | 19.0 |
|  | snacks |  |  |
|  | Total | 1038 | 100.0 |

Table 2 The most important meal

| Variable |  | Frequency | Percent |
| :--- | :--- | ---: | ---: |
| Valid | Breakfast | 850 | 81.9 |
|  | Lunch | 172 | 16.6 |
|  | Dinner | 16 | 1.5 |
|  | Total | 1038 | 100.0 |

Table 3 Consuming breakfast

| Variable |  | Frequency | Percent |
| :---: | :--- | ---: | ---: |
| Valid | Never | 49 | 4.7 |
|  | Sometimes | 432 | 41.6 |
|  | Always | 557 | 53.7 |
|  | Total | 1038 | 100.0 |

Table 4 Breakfast options

|  | Variable | Frequency | Percent |
| :--- | :--- | ---: | ---: |
| Valid | Eggs | 386 | 37.2 |
|  | Slice with a | 207 | 19.9 |
|  | topping |  |  |
|  | Cereals | 125 | 12.1 |
|  | Sandwich | 320 | 30.8 |
|  | Total | 1038 | 100.0 |

Table 5 Carrying meal from home

| Variable |  | Frequency | Percent |
| :--- | :--- | ---: | ---: |
| Valid | No | 570 | 54.9 |
|  | Sometimes | 350 | 33.7 |
|  | Always | 118 | 11.4 |
|  | Total | 1038 | 100.0 |

Table 3 shows although for the majority of students the most important meal is breakfast, they do not 60
minutes and $66.1 \%$ of student are physically active every day for 90 minutes.

Based on the results presented in Table 5. and 6., it can be concluded that 11.4 \% of students carry a meal from home. The highest percentage of students (11.1 \%) always take fruits. Most of them take sandwich ( 35.4 \%) and fruits ( 34.1 \%) sometimes.
Results presented in tables 7 and 8 it can be concluded that $89.2 \%$ of students buy snacks in fast food and bakery. The most commonly eaten snack from the fast food is the hamburger (60.0\%), sandwich ( $33.0 \%$ ) and hotdog ( $6.7 \%$ ). The most commonly eaten snack from the bakery is the croissant ( $38.1 \%$ ), dough with cottage cheese (27.0 $\%)$, pie ( $17.5 \%$ ), dough with the hotdog ( $11.1 \%$ ).
Table 9. „I eat snacks while being at the "University". Results shown in Table 9 state that $63.2 \%$ of students sometimes eat sweets and snacks, 26.3\% of students never and $10.5 \%$ of students each day.
Most of the students ( $62.5 \%$ ) consume water 62.5\%, 5.8\% drink juice, while 31.7\% consume both (Table 10). Water is an integral part of our body, making about 70-75\% of total body mass. The proportion of water in the body varies with regard to sex and age, so it decreases with aging and is higher in men than in women. Furthermore, in order for the body to function normally, the water content in the body must be constant, ie, there must be a balance between the injected fluid and the losing fluid (Kladić, 2018.).

Based on the results presented in Table 11 it can be concluded that most of participants (65.2 \%) are involved in physical activity 1-2 times weekly for 30 minutes, $34.3 \%$ are involved 2-3 times a week for insufficient leisure time (48.1\%), too many obligations at faculty (39.6\%) and the lack of money (12.3\%).

Most of the students sleep for 8 hours (33.7\%), $32.3 \%$ of students sleep for 7 hours, $24.5 \%$ of students sleep for 6 hours (Table 13).

Table 6 Meal brought from home

| Valid | Variable | Always |  | Sometimes |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Frequency | Percent | Frequency | Percent | Frequency | Percent |
|  | Eggs | 0 | 0.0 | 4 | 0.9 | 4 | 0.9 |
|  | Chicken | 7 | 1.4 | 4 | 0.9 | 11 | 2,4 |
|  | Pie | 12 | 2.5 | 16 | 3.4 | 28 | 5,9 |
|  | Vegetables | 3 | 0.6 | 0 | 0.0 | 3 | 0.6 |
|  | Sandwich | 44 | 9.4 | 166 | 35.4 | 210 | 44.9 |
|  | Fruits | 52 | 11.1 | 160 | 34.1 | 212 | 45.3 |
| Total |  | 118 | 25.4 | 350 | 75.1 | 468 | 100.0 |

Table 7 Buying snack at fast food or bakery

| Variable |  | Frequency | Percent |
| :--- | ---: | ---: | ---: |
| Valid | Yes | 926 | 89.2 |
|  | No | 34 | 3.3 |
|  | Sometimes | 78 | 7.5 |
|  | Total | 1038 | 100.0 |

Table 8 Snack bought from fast food or bakery

| Variable | Frequency | Percent | Frequency | Percent | Frequency | Percent |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Fast food |  | Fast food and bakery | Bakery | Total |  |  |
|  | 9 | 60.0 | 0 | 0.0 | 0 | 0.0 | 9 |
| Hamburger-croissant | 0 | 0.0 | 83 | 9,0 | 0 | 0.0 | 83 |
| Hamburger-dough with hotdog | 0 | 0.0 | 110 | 11.9 | 0 | 0.0 | 110 |
| Hamburger-dough with cottage cheese | 0 | 0.0 | 39 | 4.2 | 0 | 0.0 | 39 |
| Hamburger-pie | 0 | 0.0 | 93 | 10.0 | 0 | 0.0 | 93 |
| Hamburger-sandwich | 0 | 0.0 | 30 | 3.2 | 0 | 0.0 | 30 |
| Hot dog | 1 | 6.7 | 0 | 0.0 | 0 | 0.0 | 1 |
| Hot dog-croissant | 0 | 0.0 | 12 | 1.3 | 0 | 0.0 | 12 |
| Hot dog-dough with hotdog | 0 | 0.0 | 34 | 3.7 | 0 | 0.0 | 34 |
| Hot dog-dough with cottage cheese | 0 | 0.0 | 9 | 0.9 | 0 | 0.0 | 9 |
| Hot dog-pie | 0 | 0.0 | 11 | 1.2 | 0 | 0.0 | 11 |
| Hot dog-sandwich | 0 | 0.0 | 10 | 1.1 | 0 | 0.0 | 10 |
| Croissant | 0 | 0.0 | 0 | 0.0 | 24 | 38.1 | 24 |
| Dough with hotdog | 0 | 0.0 | 0 | 0.0 | 7 | 11.1 | 7 |
| Dough with cottage cheese | 0 | 0.0 | 0 | 0.0 | 17 | 27.0 | 17 |
| Pie | 0 | 0.0 | 0 | 0.0 | 11 | 17.5 | 11 |
| Sandwich | 5 | 33.3 | 50 | 5.4 | 4 | 6.3 | 59 |
| Sandwich- dough with cottage cheese | 0 | 0.0 | 99 | 10.7 | 0 | 0.0 | 99 |
| Sandwich-pie | 0 | 0.0 | 86 | 9.3 | 0 | 0.0 | 86 |
| Sandwich-dough with hotdog | 0 | 0.0 | 159 | 17.2 | 0 | 0.0 | 159 |
| Sandwich-croissant | 0 | 0.0 | 101 | 10.9 | 0 | 0.0 | 101 |
| Total | 15 | 100.0 | 926 | 100.0 | 63 | 100.0 | 1004 |

## Discussion

The results of some studies show that 62.68\% of students take 3 or more meals a day (Prišlin et al., 2017). Studying the dietary habits of students at the Higher Medical School of Vocational Studies in Belgrade has shown that $81.7 \%$ of students eat breakfast daily, over half of the students have Table 9 „I eat snacks while being at the "University"

| Variable |  | Frequency | Percent |
| :--- | :--- | ---: | ---: |
| Valid | Never | 273 | 26.3 |
|  | Sometimes | 656 | 63.2 |
|  | Every day | 109 | 10,5 |
|  | Total | 1038 | 100.0 |

breakfast, and half of the students dine; almost half of the respondents never take a morning snack, and one-quarter of the respondents have never had any afternoon snack (Stojanović et al., 2009). It is recommended that adolescents have 5-6 servings per day (3 main meals and 2-3 snacks) to ensure the
required amount of glucose necessary for the functioning of the brain and nervous system (Vranešić and Alebić, 2006). Due to the daily number of meals of 146 respondents, they eat at least once a day and this is $2.05 \%$ of students. Two to three times a day most often eat $43.84 \%$ of students. The most common responses are in the category of three to five times a day (48.63\%). More than five times a day eat $5.48 \%$ (Banožić et al., 2015). The results of the Spanish adolescent study show that $80.4 \%$ of young men and $75.9 \%$ of girls consume four or more daily meals, which is significantly better than the results of this paper (Gomez-Martinez et al., 2012). Regular meals or more frequent intake of food is positively reflected on health and on working capacity (Mandić, 2007). Students who live with their families are more likely to skip breakfast than students who live in a student home or in a private accommodation. Contrary to this, students living within their families are more likely to have lunch at home, as opposed to students living in a student
home and private accommodation, and often having lunch at a student restaurant. Students who are in private accommodation or live with their family consume most of the meals at home (Knežević, 2018). Breakfast has to be the healthiest meal in the day to provide the body with the proper energy that we need during the day. In other survey results show that most students have breakfast, which is commendable, but they also confirmed the theory that a lot of students skip breakfast. The vast majority of students eat lunch, and only $2 \%$ do not consume lunch.

Table 10 Type of drink

|  | Variable | Frequency | Percent |
| :---: | ---: | ---: | ---: |
| Valid | Soda drinks | 60 | 5.8 |
|  | Water | 649 | 62.5 |
|  | Both | 329 | 31.7 |
|  | Total | 1038 | 100.0 |

of students $12 \%$ do not dine, $82 \%$ dine at home / apartment, and $4 \%$ in student cafeteria. instead of roasted and fried. Out of the total number Also, the results showed that $2 \%$ of respondents dined at fast food restaurants.

Table 11 Frequency of physical activity at the weekly basis

|  |  | 30 min.$$ |  | 60 min.$$ |  | 90 min.$$ |  | 0 min.$$ |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Freq. | $\%$ | Freq. | $\%$ | Freq. | $\%$ | Freq. | $\%$ | Freq. | $\%$ |
| Valid | $1-2$ times | 333 | 65.2 | 132 | 25.8 | 46 | 9.0 | 0 | 0.0 | 511 | 49.2 |
|  | $2-3$ times | 51 | 21.3 | 82 | 34.3 | 106 | 44.4 | 0 | 0.0 | 239 | 23.0 |
|  | Every day | 19 | 10.2 | 44 | 23.7 | 123 | 66.1 | 0 | 0.0 | 186 | 17.9 |
|  | Never | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 102 | 100 | 102 | 9.9 |

Table 12 Reasons for not being active

|  | Variable | Frequency | Percent |
| :--- | :--- | ---: | ---: |
| Valid | Lack of money | 98 | 12.3 |
|  | Lack of leisure | 383 | 48.1 |
|  | time |  |  |
|  | Too many <br> obligations at the <br> faculty | 316 | 39.6 |
|  | Total | 797 | 100.0 |

Table 13 Sleeping hours

| Variable | Frequency | Percent |
| :---: | :---: | :---: |
| 2 | 1 | 0.1 |
| 3 | 4 | 0.4 |
| 4 | 19 | 1.8 |
| 5 | 31 | 3.0 |
| 6 | 255 | 24.5 |
| 7 | 335 | 32.3 |
| 8 | 350 | 33.7 |
| 9 | 8 | 0.8 |
| 10 | 21 | 2.0 |
| 11 | 1 | 0.1 |
| 12 | 8 | 0.8 |
| 14 | 3 | 0.3 |
| 15 | 2 | 0.2 |
| Total | 1038 | 100.0 |

Since dinner is the last meal in the day, highly digestible proteins and a wide variety of vegetables
are recommended (Kujadin, 2016).Since lunch is the central meal of the day, it is desirable to eat something cooked or fresh for lunch Nutritionists often emphasize that breakfast is the most important meal that should not be skipped. Despite warnings, many people, due to the accelerated rhythm of life, do not have a healthy morning breakfast, and some eat something fast on the go (Kang and Park, 2016). When it comes to regular breakfast consumption, students are divided. Namely, $51.1 \%$ of students do not have regular breakfast, while $48.9 \%$ do eat breakfast (Knežević, 2018). The research at the Athens Institute of Technology showed better results and showed that even 69.0\% of nursing students have breakfast regularly (Evagelou, 2014). 10.96\% stated that they did not have this habit, $16.44 \%$ of male students and $5.48 \%$ of femalestudents. Nevertheless, the majority of respondents (50.69 \%) daily breakfast, of which there are more female students ( 54.79 \%) than male students $46.58 \%$ (Banožić et al., 2015). In Turkey, young people (67.9 \%) have regular breakfasts (Ayrancy et al., 2010). The regularity of breakfast is a necessity for the development of children and young people and their learning abilities (Koprivnjak, 2008). According to literature, breakfast needs to provide $20 \%$ of daily energy intake, so regular breakfast consumption is recommended (Alibabić and Mujić, 2016). Breakfast is not consumed by more than half the $50 \%$ of respondents (Prišlin et al., 2017).

Breakfast is the most often skipped meal by the students (Driskell et al., 2005; Colić Barić et al., 2003; Pincan et al., 2015), and this meal has a great influence on cognitive abilities and the flow of information in learning memory (Pollitt and Mathews, 1998). The reason for skipping breakfast can be found in the absence of breakfast consumption, lack of time, or because they are not supervised by parents (Colić-Barić and Šatalić, 2002).
A large number of "Fast Food" catering establishments offer burgers, pizza, chicken, sandwiches, kebabs. Today, there are 16 famous fast food restaurants serving more than 20000 guests daily in Croatia (Kovačić et al., 2010). The main reasons for eating fast and unhealthy foods are lack of time, enjoyment of the food, socialization, location, price, lack of cooking skills, numerous tempting advertisements (Driskell et al., 2006). In the student population there is frequent eating in the student canteens within faculties or student homes. Canteen prices are lower than in restaurants or health food stores (Guagliardo, 2011). For breakfast it is recommended to eat: oatmeal/cereals, eggs, fruits. Oat flakes are rich in proteins, they contain good water solvents whose role is to maintain the balance of blood sugar, and generally oats are full of minerals, vitamins and amino acids (Taljić, 2018).
As far as fresh fruit consumption is concerned, the results show that $13 \%$ of students eat fruits every day, $6 \%$ never consume fruits, $46 \%$ consume fruits $1-3$ times a week, $30 \%$ consume fruits $1-2$ times a month, $5 \%$ more times a day. Fruit portion for both men and women should be two cups a day. One cup is eg a small apple, medium pear, large orange, eight large strawberries or one cup of $100 \%$ fruit juice (Kujadin, 2016). As far as fruits are concerned, the largest number of respondents, $38.6 \%$ of them eat fruit a few times a week, while the smallest number never eat 7\% (Majeed, 2015). In another study conducted among the student population, it was found that the average fruit and vegetable consumption among students is $1-3$ times a week (Downes, 2015) as evidenced by this research. Fruit is usually eaten two to four times a week ( $35.86 \%$ ) as well as vegetables ( $33.79 \%$ ), which is too low to compare it with recommended guidelines for healthy eating (Banožić et al., 2015). The frequency of fruit and vegetable representation in the studied students was at a relatively acceptable level, but the amount of daily intake was not adequate. Vegetables compared to fruits students eat more daily, and the recommended amount of fruits and vegetables (according to DASH diet) is less than 2\% (Zeković et al., 2015). Students of the Faculty of Medicine of the

University of Kragujevac in relation to their colleagues from other faculties of the same university are more likely to consume fruit (Gordić and Anđelković, 2014).
Students like to eat sweets and snacks, and there are $12 \%$ of students who never eat snacks or sweets (Kujadin, 2016). Food and drink rich in sugar often provide calories ("empty calories") but few essential ingredients. Food rich in sugar causes caries. Sugar sources include honey, cakes, chocolate, sweets and similar products. During the preparation of food, it is recommended to use less sugar as well as reducing the amount of sugar added to hot drinks (Ministry of Health of the Republic of Croatia, 2013). Students usually eat snacks once or twice a day, including $64.38 \%$ of female students and $57.53 \%$ of male students. The most popular snack students consume is chips. The second place was chocolate (Banozzić et al., 2015). This study found that over $80 \%$ of respondents consumed salty snacks, and during the test period, these percentages are increasing. Regular consumption of sweets was noted for most students ( $93.2 \%$ ) and during the exam $74.7 \%$ consumed sweets three times a week or more (Zeković et al., 2015).
Intake of fluids is covered with fruits, vegetables, soups, different drinks (eg juices, teas, milk) and drinking water. Fruits and vegetables have a high percentage of water, especially watermelons and cucumbers (Ministarstvo zdravlja R Hrvatske, 2013). $46 \%$ of students consume carbonated beverages 1 2 times a month, $20 \%$ of students drink carbonated drinks 1-3 times a week, $31 \%$ of students never and $3 \%$ consume daily carbonated beverages (Kujadin, 2016). The most commonly consumed water is $82.39 \%$, followed by juice consumption $8.17 \%$, where students are $9.88 \%$ versus students $6.41 \%$, while soda beverages are drinking by more than students $3.7 \%$ (Banožić et al, 2015). Consumption of small amounts of fluid can lead to cognitive impairment (Pross, 2017). Water is very important for the life and proper functioning of the organism. People could not survive without water for more than a few days, depending on body supplies, weather conditions, activities and other things while without the other nutrients it can take few months. According to the daily intake of water, the body is usually related to less important things than to other nutrients and their intake.
Young adults spend more than two hours a day on the computer and in front of the television, of which $91.2 \%$ women and $84 \%$ men. Almost $75 \%$ of women and $50 \%$ of men have no recommended physical activity per day (Al-Hazaa and Musaiger, 2011).

Insufficient physical activity is a major public health problem in a technologically advanced world. In most cases, passion is spent passively sitting in front of a television, computer or in a cafe. $50 \%$ of the population in European countries have regular exercise, in Croatia this number is under 10\% (WHO, 2003). Out of the total number of surveyed students, the results showed that $12 \%$ of students had regular exercise, 64\% students had occasional exercise, $24 \%$ did not exercise at all. So, the largest percentage of students occasionally exercise and are moderately physically active, which is commendable. However, the percentage of students who do not exercise at all is higher than those who practice regularly, which is not good (Kujadin, 2016). The results of a study conducted in USA showed that 37.6\% of American students had extremely hard physical activity more than three times a week, 29.9\% of students had stretching exercises, swings, abdomen more than three times a week, and 19.5\% had moderate body activity that included walking for travel or recreation for 30 minutes more than three times a week (Lowry et al., 2000). Thus, research done among student population of the Faculty of Agriculture in Zagreb shows that $74 \%$ of students do not have any physical activity, $20 \%$ are recreative (2-3 times a week), and only $0.6 \%$ are regularly engaged in physical activity (Caput - Jogunica et al., 2007). According to a study conducted aiming students at the Faculty of Medicine in Zagreb (Kovačević et al., 2008), 65\% of students are recreationally engaged in physical activity (2 times a week), while $27 \%$ are active in sports (at least 5 times a week) only $7 \%$ do not deal with any physical activity. Curković (2009), states that 66\% of the students of the University of Zagreb do not participate in physical activities, and 2\% are actively engaged in sports.
Over the last few years, the World Health Organization has been making recommendations for a healthy life and generally recommending the maintenance of world population health. Specifically, it is recommended 30 minutes of moderate physical activity per day as the minimum amount needed to preserve the health and prevent the disease. If heavier physical activity is performed, it's 20 minutes at least 3 times a week. The activity can be performed once or several times during the day, for example 2 times for 15 minutes or 3 times for 10 minutes, even 6 times for 5 minutes acting positive for the health. Scientists point out that many diseases are more common in people who rarely or do not deal with physical activity than regularly physically active persons. Doing sports and the one by our personal choice, adapted to our age, abilities and health,
should be an integral part of our daily life (WHO, 2003). The second study included 410 students in the first, second, third and fourth year of faculty. Physical activity is performed by $77.7 \%$ of students. Most respondents (55.5\%) have physical activity two to three times a week, of which $24.3 \%$ are active for only 30 minutes (Macanović et al., 2013.). The study found that $28.73 \%$ of respondents are engaged in sporting activities 2 to 3 times a week, which is more than the average in Croatia (Delaš, 2016). 100 students participated in the research. There are 17\% of students engaged in physical activity. Most of the respondents, $7 \%$ of them are physically active recreative, one to two times a week for 60 minutes, $3 \%$ are active only 30 minutes, 2-3 times per week, while $7 \%$ of students are actively engage in physical activity 3 times a week even more (Nikšić, 2018).
Namely, most respondents estimate that the obligations during their studies affect their physical health, with a significantly higher number of students finding physical health impaired by $84.86 \%$ or 73.68\% (Pross, 2017). The degree of physical activity decreases in adolescence compared to the younger population (Stone et al., 1998). Also, about $50 \%$ of respondents do not deal with sports that can affect their fitness and physical health. After a hard day at the faculty, they do not have the will to start, so they prefer to relax with a cell phone, computer or TV. All respondents $(\mathrm{N}=100)$ spend $4-5$ hours a day sitting at the faculty and even more, 27 of the 100 respondents sat in front of the television 1-3 hours, and all respondents are sitting daily in front of a computer or mobile phone at a minimum 1-2 an hour, and $50 \%$ of them are sitting outside the school and home (Nikšić, 2018).
Most respondents spend 6 to 7 hours a day sleeping (68.86\%). No significant gender differences were found in the duration of sleep. A lack of sleep affects the learning outcomes and disrupts physical and mental health (Abraham and Scaria, 2015).

## Conclusion

Starting to study at the University carries responsibility and the change of lifestyle. It has big impact to food habits and physical activity. Results of this study showed that students do have physical activity and those who don't "blame" too many obligations at the faculty, lack of leisure time and lack of the money. The same reasons are for skipping breakfast, having inadequate eating habits, buying food with high energy level. Proper nutrition follwed by adequate physical activity improves memory and cognitive abilities. All of this points the need for
educating students in this field and the need to open students' canteens based on the principles of proper nutrition and tailored to students' income.

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