

STUDY REGARDING THE COFFEE CONSUMPTION AMONG YOUNG PEOPLE

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ABSTRACT

The aim of this study was to evaluate the coffee consumption habits and experiences of tertiary students from the University of Craiova, Biology specialization. 54,17% of participants stated that they consume coffee daily and 45,83% only consume occasionally. 69,23% stated that they consume 2 cups of coffee per day, 23,08% consume only one cup and 7,69% consume 3 or more cups per day. 45,83% of the students stated that the effects depend on the dose and adverse effects may occur if caffeine consumption is excessive. 25% considered coffee to be harmful and 12,5% considered it beneficial. 16,67% stated that they do not know how to answer. 29,17% of the students said that they have insomnia and 18,05% of them have frequently tachycardia after coffee consumption.

INTRODUCTION

Coffee is the most popular beverage in the world and it is consumed by most adults. An estimated 80% of people worldwide regularly consume caffeine. Coffee, tea and soft drinks contribute the most to the baseline caffeine intakes of the United States, New Zealand and Korea (Fulgoni et al., 2015; Stachyshyn et al., 2021; Choi, 2020).

The benefits and risks of caffeine consumption are dose dependent.

There are no international guidelines for a “safe limit” of daily caffeine intake, but levels up to 400 mg/day are considered as “safe” for adults. Caffeine is well known for its positive physiological effects on health, such as increasing alertness and combating fatigue (Reyes and Cornelis, 2018).

Consumption of coffee has been shown to benefit health (Tajik et al., 2017).

Coffee is a very rich source of antioxidants and the protective effects of coffee have been proposed in several chronic and degenerative disease, such as cardiovascular disorders, cancer, Parkinson’s disease, diabetes and metabolic disorders (Ludwig et al, 2014; Gökçen and Şanlıer, 2017; Nicolopoulos et al., 2020; Chan and Bai, 2021; Chieng and Kistler, 2021).

It is reported that consumption of coffee in adults up to three cups a day reduces the risk of Type-2 diabetes and metabolic syndrome (Hang et al., 2020).

Excessive caffeine consumption can cause negative symptoms such as anxiety, nausea, palpitations, upset stomach, headaches, insomnia, respiratory problem, liver and heart damage. Caffeine is one of the most widely used mood and behavior altering drugs (Barrea et al., 2021).

Coffee intake beyond 300 ml/day may be associated with increased cardiovascular complications (Godos et al., 2014).

MATERIAL AND METHODS

The aim of this study was to evaluate the coffee consumption habits and experiences of Romanian tertiary students from the University of Craiova, Biology specialization.

The study was conducted online between June 2020 – June 2021.

The investigation used a coffee consumption habits questionnaire from a sample of 102 students.

The questionnaire included the following screening questions:

1. The age and the gender.
2. Do you drink coffee?
3. At what age do you drink coffee?
4. Don't drink coffee because it has given you side effects or you don't like the taste?
5. Do you drink coffee daily or occasionally?
6. How many cups of coffee do you drink daily? (cups/day or ml/day)
7. Do you drink caffeinated or decaffeinated coffee?
8. Do you drink American coffee/espresso/caffeinated beverages type 3 in 1?
9. Do you feel the need to drink coffee every day?
10. Do you add caloric ingredients such as sugar or milk to coffee?
11. Do you think that coffee causes beneficial or adverse effects on health?
12. Do you have palpitations or tachycardia after coffee consumption?
13. Do you have psycho-motor agitation after coffee consumption?
14. Do you feel more active?
15. Did coffee consumption cause you insomnia?
16. Do you know the beneficial or adverse effects of coffee consumption?

RESULTS AND DISCUSSIONS

A total of 102 participants completed the questionnaire. Most of the participants (78) were female (76,47%).

72 subjects (70,58%) of those who completed the questionnaire stated that they consume coffee, 27 of them being smokers (37,5%).

39 subjects (54,17%) stated that they consume coffee daily and the rest (45,83%) only consume occasionally because they do not like the taste or cause them the side effects.

Regarding the amount consumed daily, expressed by the number of cups consumed daily, 69,23% stated that they consume 2 cups of coffee per day, 23,08% consume only one cup and 7,69% consume 3 or more cups per day. One cup contains about 150 ml of coffee (Table 1, Figure 1).

Table 1

The distribution of the cases according to daily coffee consumption

Daily coffee consumption	Number of cases	Percentage
1 cup (≈ 150 ml)	9	23,08%
2 cups (200-300 ml)	27	69,23%
3 cups (300-400 ml)	3	7,69%
Total	39	100%

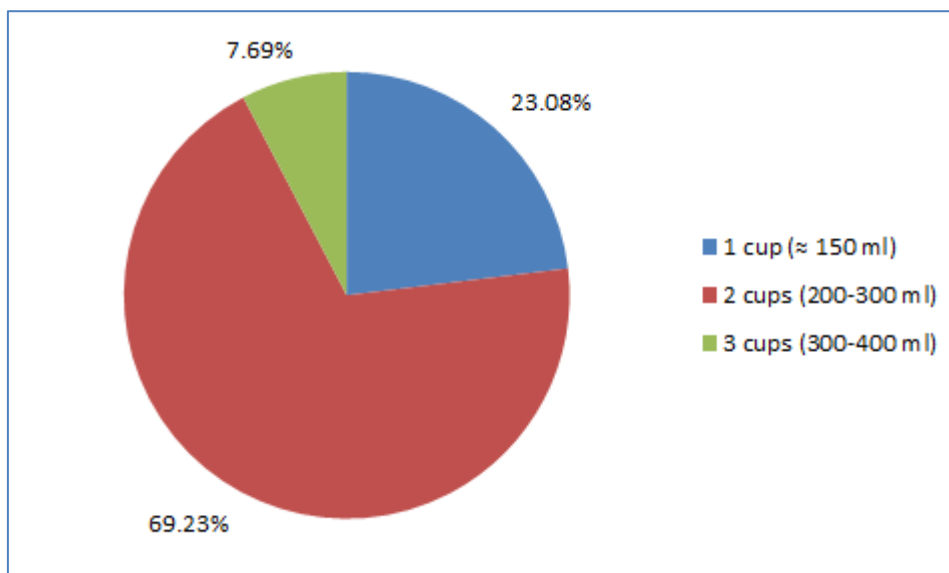


Figure 1. The distribution of the cases according to daily coffee consumption

The evaluation of the coffee variety showed that the majority of the participants (95,84%) preferred caffeinated coffee (American coffee).

The evaluation of the addition of ingredients with the caloric content showed that 70,83% prefer to add sugar and milk, 12,5% consume coffee only with sugar and 16,67% add only milk to coffee (Table 2, Figure 2).

Table 2

The distribution of the cases according to the caloric ingredients added to coffee

Ingredients	Number of cases	Percentage
Sugar	9	12,5%
Milk	12	16,67%
Sugar+Milk	51	70,83%
Total	72	100%

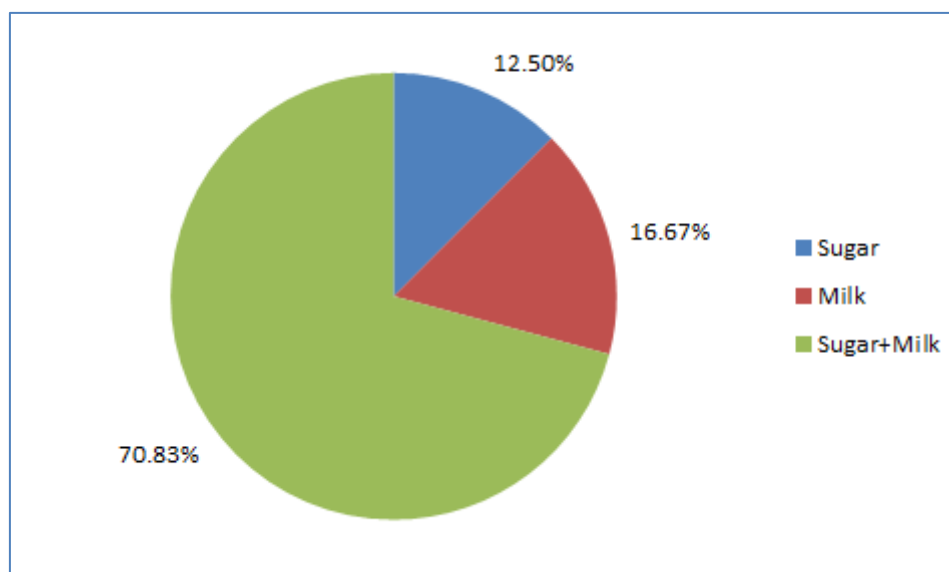


Figure 2. The distribution of the cases according to the caloric ingredients added

The evaluation of student’s knowledge of the beneficial or harmful effects of coffee consumption showed variable results.

45,83% of the students stated that the effects depend on the dose and side effects may occur if caffeine consumption is excessive. They were able to list both the beneficial and the adverse effects of coffee consumption. 25% considered coffee to be harmful and 12,5% considered it beneficial. 16,67% stated that they do not know how to answer and that they believe that coffee consumption has no effect on the human body (Table 3, Figure 3).

Table 3

The distribution of the cases according to the knowledge of the effects of coffee consumption

The answer	Number of cases	Percentage
Coffee has harmful effects	18	25%
Coffee has beneficial effects	9	12,50%
Coffee has beneficial/harmful effects depending on the dose	33	45,83%
I do not know/ I don't think it has any effect	12	16,67%
Total	72	100%

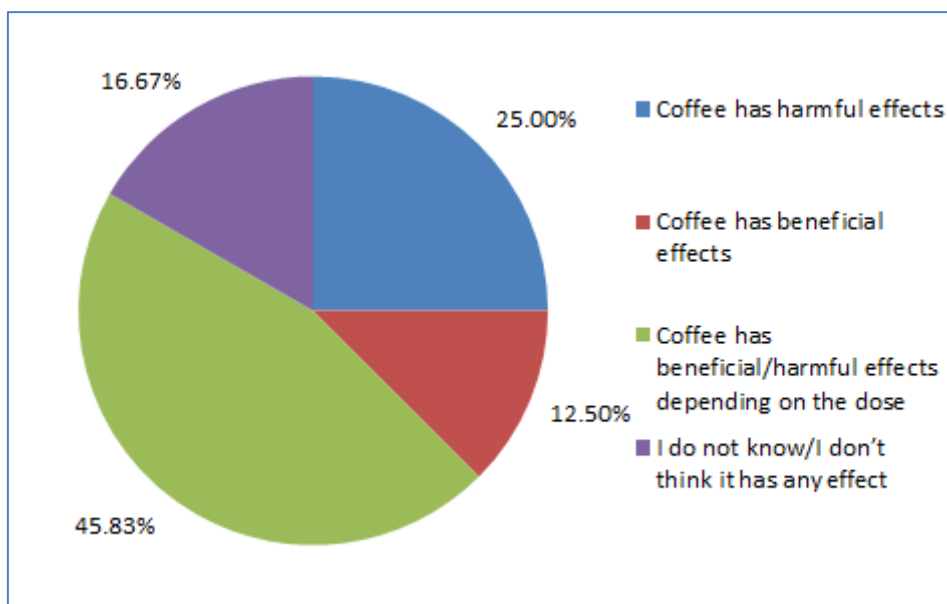


Figure 3. The distribution of the cases according to the knowledge of the effects of coffee consumption

29,17% of the students stated that they have insomnia after consuming coffee, especially if they consume after 4 p.m., so avoid this.

Evaluation of the occurrence of the cardiovascular symptoms after coffee consumption (palpitations, tachycardia) showed that 70,83% of students have no symptoms. 18,05% of them stated that they frequently have tachycardia and 12,5% stated that they have palpitations only in case of consuming too much coffee.

91,67% of participants said they feel more active after drinking coffee, are more alert and have a greater ability to concentrate. 12,5% of students said that coffee consumption causes them a state of mental agitation.

Many studies have shown that caffeinated beverages are frequently consumed by young college students and smoking influences the coffee consumption.

The motivations that drive caffeinated beverage consumption and sleep quality were investigated by using self-reported questionnaires which were distributed on campus to students enrolled at a university in Korea. The results showed the motivations for caffeine consumption were taste, alertness, mood, socialization, habit and health benefits. Coffee consumption was motivated by a desire for alertness and by habit. Smokers had a higher intake of coffee. It was not found a significant relationship with sleep quality, although the general sleep quality of the respondents was poor examined trends in consumption. (Choi J., 2020).

A study was made from 2001-2010 in the US population for adults ≥ 19 years of age. Acute and usual intake of caffeine was estimated from all caffeine-containing foods and beverages. The result showed that eighty-nine (89%) percent of the adult population consumes caffeine, with equal prevalence in men and women. Usual intake was 211 ± 3 mg/d (240 ± 4 mg/d in men and 183 ± 3 mg/d in women).

Consumption was highest in men aged 31-50 years and lowest in women aged 19-30 years. Coffee was in 64% percent age the source of caffeine (Fulgoni and Keast, 2015).

A study made in New Zealand explored caffeine consumption habits of tertiary students (317 participants, ≥ 16 years). Most of students (99,1%) regularly consumed caffeinated products, especially coffee and chocolate. Median estimated caffeine intake was 146,73 mg/day and maximum 1988,14 mg/day. 34,3% of consumers ingested caffeine above the adverse effect level and 14,3% above the safe limit (400 mg/day). Most of consumers (84,7%) reported symptoms but 77% of them did not stop the consumption (Stachyshyn S. et al. 2021). Public health initiatives may be important to reduce potential caffeine-related harm.

CONCLUSIONS

Coffee is consumed by most students. The majority of them consume a moderate amount of coffee, represented by 2 cups a day. They consume responsibly and are aware that a large amount of coffee can cause adverse effects on the cardiovascular or nervous system.

Some students consume coffee even if they do not know what effects it has on the human body or if they consider it to have harmful effects. This shows their lack of interest in the principles of human nutrition and the need to introduce the notions of health education in school curricula.

BIBLIOGRAPHY

1. Barrea L, Pugliese G, Frias-Toral E, El Ghoch M, Castellucci B, Chapela SP, Carignano MLA, Laudisio D, Savastano S, Colao A, Muscogiuri G., 2021 - *Coffee consumption, health benefits and side effects: a narrative review and update for dietitians and nutritionists*. Crit Rev Food Sci Nutr. Aug 28:1-24. doi: 10.1080/10408398.2021.1963207. Online ahead of print. PMID: 34455881
2. Chan L, Hong CT, Bai CH., 2021 - *Coffee consumption and the risk of cerebrovascular disease: a meta-analysis of prospective cohort studies*. BMC Neurol. Oct 2;21(1):380. doi: 10.1186/s12883-021-02411-5. PMID: 34600504.
3. Chieng D, Kistler PM., 2021 - *Coffee and tea on cardiovascular disease (CVD) prevention*. Trends Cardiovasc Med. Aug 9:S1050-1738(21)00088-8. doi: 10.1016/j.tcm.2021.08.004. Online ahead of print. PMID: 34384881.

4. Choi J., 2020 - *Motivations Influencing Caffeine Consumption Behaviors among College Students in Korea: Associations with Sleep Quality*. *Nutrients*. Mar 30;12(4):953. doi: 10.3390/nu12040953. PMID: 32235502.
5. Fulgoni VL 3rd, Keast DR, Lieberman HR., 2015 - *Trends in intake and sources of caffeine in the diets of US adults: 2001-2010*. *Am J Clin Nutr*. May;101(5):1081-7. doi: 10.3945/ajcn.113.080077. Epub 2015 Apr 1. PMID: 25832334
6. Godos J, Pluchinotta FR, Marventano S, Buscemi S, Li Volti G, Galvano F, Grosso G., 2014 - *Coffee components and cardiovascular risk: beneficial and detrimental effects*. *Int J Food Sci Nutr*. Dec;65(8):925-36. doi: 10.3109/09637486.2014.940287. Epub 2014 Jul 21. PMID: 25046596.
7. Gökçen BB, Şanlıer N., 2017 - *Coffee consumption and disease correlations*, *Crit Rev Food Sci Nutr*. 2019;59(2):336-348. doi: 10.1080/10408398.2017.1369391. Epub Sep 29. PMID: 28853910.
8. Hang D, Zeleznik OA, He X, Guasch-Ferre M, Jiang X, Li J, Liang L, Eliassen AH, Clish CB, Chan AT, Hu Z, Shen H, Wilson KM, Mucci LA, Sun Q, Hu FB, Willett WC, Giovannucci EL, Song M., 2020 - *Metabolomic Signatures of Long-term Coffee Consumption and Risk of Type 2 Diabetes in Women*. *Diabetes Care*. Oct;43(10):2588-2596. doi: 10.2337/dc20-0800. Epub 2020 Aug 11. PMID: 32788283.
9. Ludwig IA, Clifford MN, Lean ME, Ashihara H, Crozier A., 2014 - *Coffee: biochemistry and potential impact on health*. *Food Funct*. Aug;5(8):1695-717. doi: 10.1039/c4fo00042k. PMID: 24671262.
10. Nicolopoulos K, Mulugeta A, Zhou A, Hyppönen E., 2020 - *Association between habitual coffee consumption and multiple disease outcomes: A Mendelian randomisation phenome-wide association study in the UK Biobank*. *Clin Nutr*. Nov;39(11):3467-3476. doi: 10.1016/j.clnu.2020.03.009. Epub 2020 Mar 13. PMID: 32284183
11. Reyes CM, Cornelis MC, 2018 - *Caffeine in the Diet: Country-Level Consumption and Guidelines*. *Nutrients*. Nov 15;10(11):1772. doi: 10.3390/nu10111772. PMID: 30445721.
12. Stachyshyn S, Ali A, Wham C, Knightbridge-Eager T, Rutherford-Markwick K., 2021 - *Caffeine Consumption Habits of New Zealand Tertiary Students*. *Nutrients*. Apr 28;13(5):1493. doi: 10.3390/nu13051493. PMID: 33924957
13. Tajik N, Tajik M, Mack I, Enck P., 2017 - *The potential effects of chlorogenic acid, the main phenolic components in coffee, on health: a comprehensive review of the literature*. *Eur J Nutr*. Oct;56(7):2215-2244. doi: 10.1007/s00394-017-1379-1. Epub 2017 Apr 8. PMID: 28391515.