ENGLISH DEPARTMENT, FU JEN CATHOLIC UNIVERSITY

GRADUATION PROJECT 2016

Beware of How Much Caffeine You Consume: A Study of the Consumption Patterns of Caffeinated Drinks by Students from the English Department at Fu Jen Catholic University

Research Paper, English Composition III

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Beware of How Much Caffeine You Consume:

A Study of the Consumption Patterns of Caffeinated Drinks by Students from the English Department at Fu Jen Catholic University

Final Draft

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CCIII – Section E

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26 June 2015

Abstract

Caffeine is a commonly used stimulant worldwide. However, overconsumption of the drug may cause people to suffer from symptoms of caffeine intoxication or caffeine withdrawal. Moreover, doubts about the actual effects of caffeine have also been raised by scientists in the past. Therefore, this paper intends to examine both the possible positive and negative effects of caffeine consumption and the actual effectiveness of caffeine on consumers by studying the consumption patterns of caffeinated drinks (i.e. coffee, energy drinks, and tea) by students in the English department at Fu Jen Catholic University. Results show that caffeine does act as an effective stimulant despite people's different levels of dependency. However, people also suffer from certain side effects after caffeine consumption, especially low consumers of caffeine, whereas high consumers of caffeine are more likely to suffer from caffeine withdrawal. Thus, though caffeine is an effective stimulant, consumption should still be limited due to health concerns.

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Students should limit their consumption of caffeine because they may suffer from symptoms of caffeine withdrawal and caffeine intoxication when too much caffeine is consumed.

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1. Definition
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C. High consumers of caffeine are very likely to suffer from caffeine withdrawal.

D. Students should not be too dependent on caffeine.

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Caffeine is a drug used worldwide for its stimulating effects. One of the most common ways of consuming caffeine is to drink caffeinated drinks, such as coffee, energy drinks, and tea. In fact, many people have the habit of starting their days with a cup of coffee or tea to refresh themselves after a long night's sleep. Caffeine's stimulating effect allows consumers to reduce their sleepiness and fatigue. Thus, many people consume caffeine when they want to stay awake and focused. The age range of caffeine consumers is very wide, from workers to students. According to Gary E. McIlvain and his colleagues, the consumption of caffeine among young adults has increased dramatically since 2011 by consuming coffee and energy drinks (235). However, there are risks to caffeine consumption. Consumers are capable of suffering from symptoms of caffeine intoxication or caffeine withdrawal, which will damage their health, if they consume too much caffeine. Some scientists also raise doubts about the actual effectiveness of caffeine, claiming that its stimulating effect is merely a phenomenon known as withdrawal reversal (Childs and Wit 514). Therefore, to examine the actual effectiveness of caffeine as well as the possible risks of consuming the drug, this paper studies the consumption patterns of coffee, energy drinks, and tea by students from the English Department at Fu Jen Catholic University, who are believed to consume caffeine frequently due to their heavy academic workloads. Results show that student consumers of caffeine do benefit from the stimulating effects of caffeine, despite their different levels of dependence on caffeine. However, student consumers of caffeine also suffer from side effects of over consumption and caffeine withdrawal. Therefore, students should limit their consumption of caffeine because they may suffer from symptoms of caffeine withdrawal and caffeine intoxication when too much caffeine is consumed.

This research paper is divided into the following sections: the Literature Review, the Methodology, the Data Analysis, and the Conclusion. The Literature Review section presents summaries of the important claims and arguments from the secondary sources consulted by the author. The summaries allow readers to have a better understanding of the background

information of the topic. The Methodology section includes explanations for the online survey conducted by the author. The Data Analysis section discusses the survey results and the analysis of the results. Lastly, the conclusion includes an overall summary of the findings of this research paper, as well as a discussion of possible improvements and areas for further research.

Caffeine is a drug well known for its stimulating effects, which consumers may benefit from by consuming more than 32mg (IFIC 3). Although consumers of caffeine may benefit from its stimulating effect, overconsumption of the drug still leads to serious side effects. According to the International Food Information Council Foundation (IFIC), a "moderate intake of 300mg/day (about three cups of coffee per day) of caffeine does not cause adverse health effects in healthy adults" (1). The IFIC also suggests that the average amount of caffeine consumption per day is around 120mg or 1.73mg/kg (weight) (2). Members of the IFIC also point out that as long as less than 500mg of caffeine (around five cups of coffee) is consumed each day, caffeine is unlikely to cause cancer or increase the risk of getting diseases, like coronary heart disease (5). However, the IFIC warns that if people who are more sensitive to caffeine (e.g. the elderly) consume more than 250mg of caffeine per day, they may suffer from the negative consequences of caffeine intoxication, like insomnia, feeling restless, and feeling nervous (4).

Caffeine intoxication and caffeine withdrawal are two possible negative effects of caffeine consumption. According to the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*), caffeine intoxication can be experienced when over 250mg of caffeine is consumed. 12 symptoms of caffeine intoxication are given, including: increased or irregular heartbeat, insomnia, restlessness, and nervousness. Another possible risk of caffeine consumption is caffeine withdrawal. According to Laura Juliano and Roland R. Griffiths, caffeine consumers suffer from caffeine withdrawal when there is "[an] abrupt cessation of caffeine use or reduction in the amount of caffeine used" (qtd. in

Ozsungur, Brenner, and El-Sohemy 542). Ozsungur and his colleagues divided the symptoms of caffeine withdrawal into three groups: fatigue and headache, dysphoric mood, and flu-like somatic (545). Possible symptoms of caffeine withdrawal include headaches, fatigue, a decrease in energy, a decrease in alertness, a decrease in contentedness, drowsiness, depressed moods, difficulties in concentrating, becoming irritable, foggy headedness, flu-like symptoms, nausea, and muscle pains (542).

Due to the phenomenon of caffeine withdrawal, doubts about caffeine's actual effectiveness are raised. Emma Childs and Harriet de Wit have described a situation known as withdrawal reversal, which is when people who are suffering from caffeine withdrawal regained their energy after consuming caffeine (514). There are doubts about caffeine's actual effectiveness for some scientists claim that under this condition caffeine only brings the consumer's state back to normal and does not further enhance consumers' performances. Therefore, Peter J. Rogers and his colleagues conducted an experiment to determine whether or not caffeine's stimulating effect is caffeine's own beneficial effect or merely an enhancement due to withdrawal reversal (743). According to the results, only overnight caffeine deprived participants' (i.e. people suffering from caffeine withdrawal) performances were enhanced after caffeine consumption, though just merely preventing their already poor performance from worsening. In contrast, the cognitive performance of long-term caffeine withdrawn participants (i.e. people who are not suffering from caffeine withdrawal) were not enhanced, even if their overall conditions are weakened due to sleep deprivation. Therefore, Rogers and his colleagues conclude that caffeine merely prevents the performance of those who are suffering from caffeine withdrawal from worsening, and that "there is little benefit to be gained from caffeine consumption" (751).

Since every consumer's level of dependency on caffeine differs, scientists are curious about how this difference may influence the drug's effects and side effects on its consumers. A. S. Attwood and her colleagues compare caffeine's effects on both high caffeine consumers

(more than 200mg/day) and moderate caffeine consumers (less than 200mg/day), concluding that “high-caffeine consumers are more likely than moderate-caffeine consumers to respond to caffeine” (475). They observe that high consumers’ reactions and alertness are enhanced significantly after consuming caffeine. In addition, the sleepiness of high consumers is successfully eliminated by caffeine. Moreover, high consumers tend to be more tolerable to the side effects of caffeine. In contrast, moderate consumers of caffeine are less responsive to caffeine, for a number of them reported not experiencing any particular effect. Though not significant, moderate consumers tend to experience more of caffeine’s negative effects (476). Therefore, the team asserts that the more frequent one consumes caffeine, the more one benefits from it.

Emma Childs and Harriet de Wit are another pair of scientists who are interested in how the different levels of dependency on caffeine may influence consumers’ responsiveness to the drug. They focus on light and nondependent caffeine consumers and conclude that “caffeine is effective in situations where stimulant-like effects are desirable, even in individuals who are not regular users of the drug” (522). Yet they also confirm that caffeine’s effects on consumers differ depending on the amount consumed, and that consumers of caffeine do suffer from side effects after consumption, such as an increase in anxiety, blood pressure, and a decrease in memorizing skills.

Caffeinated drinks are one of the main sources of caffeine consumption, and their popularity is still growing. Nowadays, more and more students start to consume caffeinated drinks to benefit from their stimulating effects. Based on the findings of their questionnaire distributed to freshmen at Marshall University, Gary E. McIlvain, Melody P. Noland, and Robert Bickel state that students’ main reasons for consuming caffeine is to stay awake, since the results show that 76% of the students believe that caffeine will keep them awake, while 60.7% use caffeine to wake up in the mornings. The team also observes that students who participated in college activities consume more caffeine, which is because they need to stay

focused for longer periods of time. Interestingly, while 80% of the students believe caffeine may damage their health, most students still consume caffeine more than necessary. Therefore, the team concludes that "[students consider their] desire to use caffeine to stay awake or to wake up in the morning was more important than health concerns" (241).

Other than coffee, tea is also a common caffeinated drink. In their study, Peter J. Rogers and his colleagues intend to find out the reason why tea is usually considered to be less stimulating than coffee. Results show that other than the lower concentration of caffeine in tea, theanine, a substance with a relaxing effect found in tea, could be another reason why tea is less stimulating than coffee. While the team discovers that the seriousness of some of the negative symptoms of caffeine, such as hypertension, might not be that significant, the rise of blood pressure can lead to serious consequences, like cardiovascular diseases and strokes (574). However, according to their results, some of theanine's effects are opposite to that of caffeine's, thus diminishing some of caffeine's negative effects. For instance, while caffeine increases consumer's alertness and blood pressure, theanine lowers them. Nevertheless, although theanine does weaken caffeine's effect on blood pressure, it does not decrease alertness that is notably caused by caffeine. Moreover, according to the team's results, "theanine reduces [its consumers' blood pressures] only when [they are] raised by caffeine" (575). Last but not least, theanine only increases calmness when it is consumed alone, and instead decreases calmness when consumed with caffeine (Haskell et al. qtd. in Rogers et al. 575).

Energy drinks are caffeinated drinks that gain popularity recently. As stated by Zenith International Food and Drink Consultancy, the consumption of energy drinks worldwide has risen by 14% in 2011 (Gallimberti et al. 1336). According to the Committee on Nutrition and the Council on Sports Medicine and Fitness, the definition of energy drinks is "beverages containing substances that act as non-nutritive stimulants with purported ergogenic or performance-enhancing effects" (Gallimberti et al. 1336). The high level of caffeine

contained in energy drinks, which can reach up to 250mg per can, has caused concerns. Moreover, some professionals claim that the ingredients of some of the other stimulating substances found in the drink are similar to that of club drugs' (Smith, White, and Sapiro 33). In fact, there are cases of people dying after consuming energy drinks, for the mixture of stimulating substances in the drinks can increase consumers' blood pressures, even causing irregular heartbeats and strokes (Smith, White, and Sapiro 34).

Luigi Gallimberti and his team examine children's dependency on energy drinks, concerned about the side effects of energy drinks on children, adolescents, and young adults, which include sleep disorder and rising blood pressures. According to their findings, "the consumption of energy drinks is common among 11-to-13-year olds" (1340). They also observe that as consumers of caffeine get older, the amount of energy drinks consumed also increases. In addition, young adults have the tendency to try out other more intense stimulants after drinking energy drinks. Gillimberti suggests that a good strategy to prevent excessive consumption of energy drinks among students is to inform them of the negative effects of energy drinks, since their data shows that young adolescents who are more aware of energy drinks' negative effects are less likely to become regular consumers of such drinks (1339).

The Research methodology used in this paper includes an online questionnaire distributed to students in the English Department at Fu Jen Catholic University. The questionnaire is designed to understand the consuming patterns and reliance on caffeinated drinks of the respondents. To have a thorough understanding of the students' opinions about different types of caffeinated drinks, the questionnaire is divided into the following sections: coffee, energy drinks, and tea related questions. In addition, to determine the possible positive and negative effects of caffeinated drinks on the respondents, the questionnaire also includes a section on the effects and side effects of caffeine consumption. Questions that help to determine whether or not the respondents are suffering from caffeine withdrawal and over consumption of the drug are also included. The online questionnaire is designed by using

Google Survey. In the end, 50 responses were received.

Research results show that a majority of the respondents are caffeine consumers, and 41 of the 50 respondents (82%) reported drinking caffeinated drinks. There are various reasons why the other nine respondents do not drink caffeinated drinks. One of the main reasons is that they do not have the need to consume caffeinated drinks (e.g. no need to stay up late), which received four votes (44.4%). Another main reason why these nine respondents do not drink caffeinated drinks is that they anticipate that they will suffer from side effects after its consumption, which may damage their health (33.3%). One respondent even answered that the last time he or she drank coffee it made him or her suffer from palpitations.

Both coffee (80.5%) and tea (87.8%) are frequently consumed by the students of the English department at FJU, with tea being the most frequently consumed caffeinated drink (48.8%). Compared to coffee and tea, energy drinks are less frequently consumed, with only 19.5% of the FJU students reporting drinking energy drinks. Though the students' reasons for drinking each type of caffeinated drink differ, most of them drink caffeinated drinks for reasons such as "I want to stay up late at nights," "I want to stay awake in the mornings," and "I want to stay energetic." From this result one may conclude that students drink caffeinated drinks mostly because they want to benefit from caffeine's stimulating effects, and they also believe that caffeine is an effective stimulant, which corresponds to the observation made in McIlvain's, Noland's, and Bickel's study.

Tea is the most frequently consumed caffeinated drink by the students in FJU's English department, with only 2 out of 41 student respondents reporting that they do not drink tea. Although tea is most frequently consumed, the stimulating effect of caffeine is not the students' main reason for drinking tea. Only 10 students in FJU's English department (24.4%) drink tea to stay up late at nights, 8 (19.5%) to stay awake in the mornings, and a mere 7 (17.1%) drink tea because they want to enhance their physical performances or learning efficiency. Most of the students drink tea simply because they like the taste of it (80.5%), and

that it is a habit of theirs (46.3%). In addition, most of the respondents (73.2%) do not consider that the frequent consumption of tea will affect their health negatively, which explains why it is the most frequently consumed caffeinated drink.

Coffee is the second most frequently consumed caffeinated drink by the students in FJU's English department. Only 9 students reported that they do not drink coffee. Unlike tea, coffee is consumed mostly for caffeine's stimulating effects. 53.7% of the respondents drink coffee because they want to stay awake in the mornings, and 41.5% report that they drink coffee to stay up late at nights. Students also drink coffee because they want to become more energetic (41.5%) and stay focused during classes or while studying (46.3%). Over half of the students also drink coffee because they like the taste of it. Unlike their views about drinking tea, over half of the respondents (58.5%) consider that their health will be negatively affected if they consume too much coffee. This can be one reason why most of the students only drink coffee 1~2 times a week, and usually only one cup per day. Therefore, one may conclude that although students believe that overconsumption of coffee may damage their health, they still drink it because they want to benefit from caffeine's stimulating effects, which corresponds to McIlvain's, Noland's, and Bickel's observation that "[students consider their] desire to use caffeine to stay awake or to wake up in the morning was more important that health concerns" (241).

Energy drinks are the least frequently consumed caffeinated drinks by students at FJU's English department. Only 8 out of the 41 students drink energy drinks. According to the results, these students drink energy drinks mainly because they want to stay up late at nights (75%) and to enhance their physical performances (i.e. stay energetic and focused) (62.5%). Unlike tea and coffee, most of the respondents do not drink energy drinks on a regular basis and only drink energy drinks before exams. Results also show that students consider energy drinks to be the most harmful of caffeinated drinks, with 90.2% of them agreeing that frequent consumption of the drink will damage their health. This result reflects why energy

drinks are the least frequently consumed caffeinated drinks by the respondents.

To investigate whether or not people's different levels of dependency on caffeine influences caffeine's effectiveness and negative effects on them, the students at FJU's English department are classified into the following three groups: high consumers (at least one cup of caffeinated drink every day), moderate consumers (4~6 cups a week), and low consumers (1~3 cups a week or less). Results of the questionnaire show that out of 41 caffeine consumers, 12 are high consumers, 11 are moderate consumers, and 18 are low consumers. Though the frequency of caffeine consumption varies, 74% of the students surveyed consume less than 250mg of caffeine per day on average, making them either low or moderate consumers according to Attwood's team's classification. According to IFIC, most of the students are also free from suffering from serious symptoms of overconsumption of caffeine, for consumption of less than 300mg per day is safe (1).

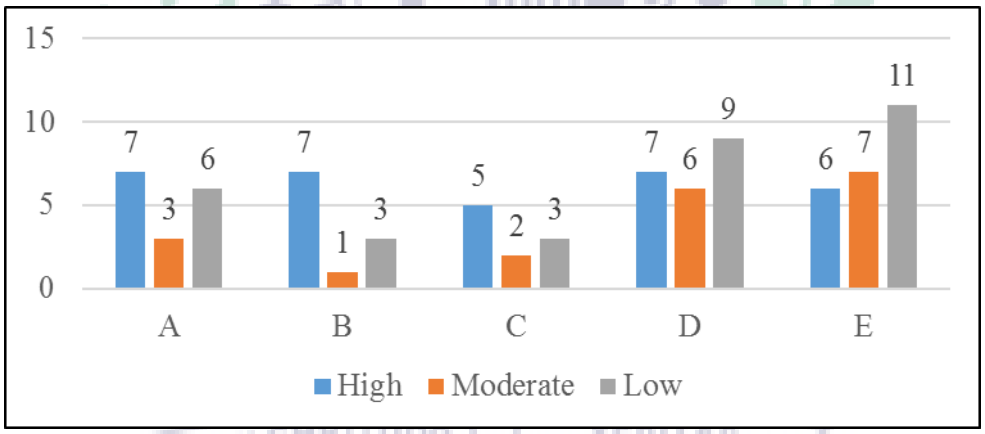

Fig. 1. Caffeine's positive effect on consumers of different levels of dependency.

The survey results show that the effects and side effects of caffeine on consumers of different dependency levels differ. The possible positive effects of caffeine include: A) Enhancement in alertness, B) Enhancement in learning efficiency, C) Increase in positive mood, D) A reduction in fatigue, E) A reduction in sleepiness. The top two most experienced positive effects of caffeine among the students' responses are reduction in fatigue (53.7%) and reduction in sleepiness (58.5%). The results show that students who consume high levels of caffeine are more likely to experience positive effects, since high consumers ranked first in

three of the five effects. This corresponds to Attwood's claim that high consumers are more responsive to caffeine's beneficial effects. Interestingly, low student consumers rank first in the top two most experienced effects. This is probably because high consumers are used to consuming caffeine so that certain effects of caffeine become less evident to them. Conversely, low consumers, who do not consume caffeine as often, are more capable of being influenced by caffeine's certain effects.

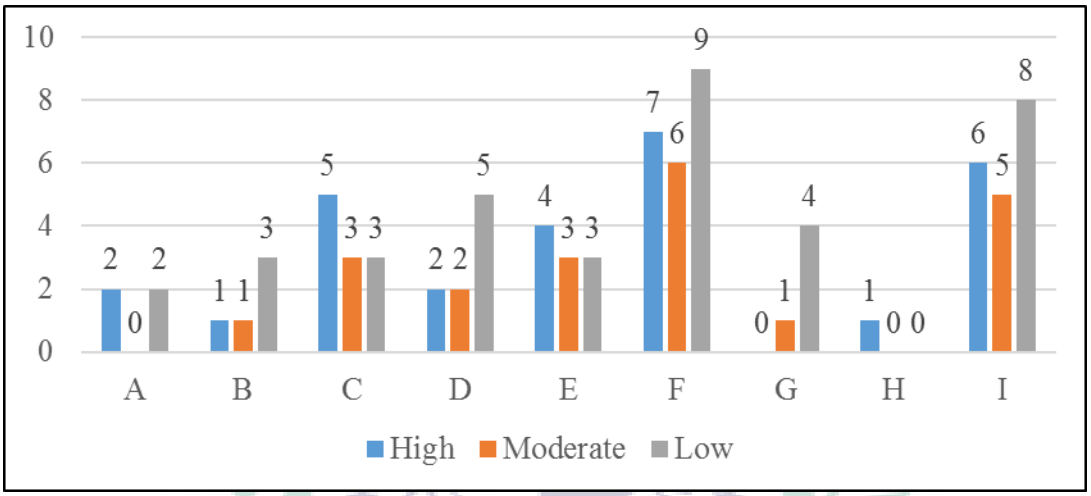

Fig. 2. Caffeine's side effects on consumers of different levels of dependency.

Nine negative side effects of caffeine were listed in the questionnaire, including: A) Difficulty in performing complicated task, B) Finding it hard to remember things, C) Hyperactivity, D) Headaches, E) Increase in anxiety or nervousness, F) Increase in heartbeat, G) Increase in negative mood, H) Poorer academic performance, I) Sleep disorder or insomnia. The top two repeatedly experienced negative side effects are increase in heartbeat and insomnia. Over half of the students of the three groups reported suffering from increases in heartbeats. Although each group are capable of suffering from the side effects of caffeine, low consumers of caffeine tend to be more vulnerable to the drug, for six out of the nine symptoms are mostly experienced by them. However, according to the survey results, four of the symptoms are mostly experienced by students who are high consumers of caffeine. This result slightly differs from Attwood's team's claim that high consumers of caffeine tend to be

more tolerable to the side effects of caffeine. This probably occurs because high student consumers of caffeine have consumed too much caffeine so that they are suffering from caffeine intoxication. In fact, the top two most frequently experienced side effects of the high consumers of caffeine, increased heartbeat and insomnia, are both possible symptoms of caffeine intoxication.

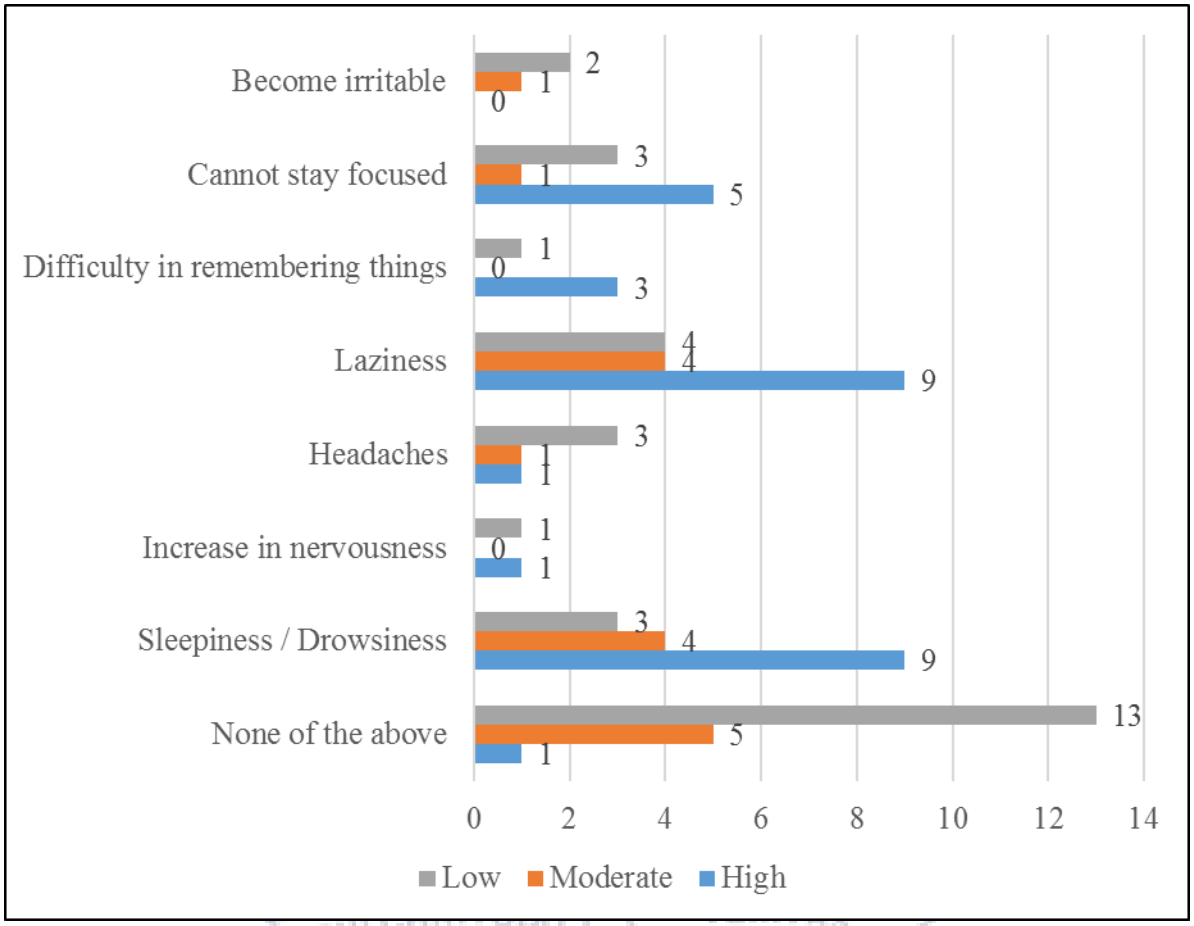

Fig. 3. How symptoms of caffeine withdrawal are experienced by student consumers of different dependency levels.

Although it is surprising that students who are high consumers are not very capable of withstanding caffeine's negative effects, it is not surprising that they tend to suffer more from caffeine withdrawal. When asked whether or not they have experienced the symptoms of overnight caffeine withdrawal before, only one student who is a high consumer replied "none of the above," while the other 11 high consumers have all suffered from at least one of the

symptoms, with the most commonly experienced symptoms of caffeine withdrawal being laziness and sleepiness. In contrast, although there are also moderate and low student consumers of caffeine who have suffered from caffeine withdrawal, 45.5% of the moderate consumers and 72.2% of the low consumers have not experienced any of the symptoms before. Therefore, one may infer that the more regularly one consumes caffeine, the more possible it is for one to suffer from caffeine withdrawal.

The survey results also show that withdrawal reversal, a situation when people who are suffering from caffeine withdrawal regain energy after caffeine consumption, does exist (Childs and Wit 514). Out of the 11 students who are high consumers who have suffered from caffeine withdrawal in the past, 81.8% of them agree that the symptoms are relieved after consuming caffeinated drinks. On the other hand, only 50% of the moderate student consumers and 20% of the low student consumers who have suffered from caffeine withdrawal agree that the symptoms are relieved after caffeine consumption. This shows that high student consumers are more likely to benefit from caffeine when they are caffeine deprived. Yet when they are not caffeine deprived, high student consumers do not seem to benefit from caffeine significantly when compared to moderate and low student consumers. Therefore, it is true that at times caffeine only enhances a person's performance when the person's condition is weakened due to a lack of caffeine.

According to this project's results, although the student consumers' levels of dependency on caffeine does affect the drug's effectiveness and side effects on them, student consumers of all dependency levels are capable of benefiting from the drug in general, which is confirmed by Childs' and Wit's study. However, the results of this project show that high student consumers of caffeine tend to suffer from various side effects of caffeine, which contradicts with Attwood's team's findings: high consumers of caffeine are more capable of tolerating the side effects of caffeine. Therefore, one improvement that can be made to this research project is the method used to classify the respondents into high, moderate, and low

consumers of caffeine. This is because scientists who have done similar experiments all classify the participants into groups according to the amount of caffeine consumed, instead of the frequency of consumption, which is the standard used for this research project. This difference may be the cause of contradicting results. Frequency of consumption is chosen as the standard for this project because usually the amount of caffeine contained in a product is often not clearly labeled. Thus it is difficult to ask the student respondents how much caffeine they consume per day on average without conducting a controlled experiment, where the amount of caffeine consumed by the participants is controlled.

There are also possible future research projects that could be conducted on this topic. This research project focuses on the consumption of caffeine through caffeinated drinks. However, caffeine is not the only substance in these drinks. There might be other substances in these caffeinated drinks that can interfere with caffeine's positive and negative effects on consumers. For instance, according to Peter J. Rogers and his colleagues' study, the effect of theanine, a substance in tea, actually lessens some of caffeine's effects. There are many other different substances in these caffeinated drinks that might either enhance or lessen the effects of caffeine on its consumers. Thus this topic is worth investigating when people want to have a more substantial understanding of caffeine's effects on consumers.

Caffeine is indeed an effective stimulant that reduces consumers' fatigue and sleepiness regardless of consumers' different levels of dependency on the drug. However, it is also true that consumers may suffer from certain side effects after caffeine consumption, which is influenced by the consumers' different levels of dependency on the drug. Most of the students from the English Department at FJU are light or moderate consumers of caffeine, and thus unlikely to suffer due to overconsumption of the drug. Yet, low consumers are more capable of suffering from the side effects of caffeine. On the other hand, other than experiencing the side effects of caffeine, high consumers are also very likely to suffer from caffeine withdrawal. Therefore, it is best not to become too dependent on caffeine. Instead of drinking

caffeinated drinks so that one can stay energized in the mornings or to stay up late at nights, it is best to adjust one's lifestyle so that one does not have to rely on caffeine to become energetic.

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Appendix A: Questionnaire

Questionnaire on the Consumption Patterns of Caffeinated Drinks by Students in the English Department at Fu Jen Catholic University

This questionnaire is conducted for the purpose of a student research paper on the drinking patterns and the reliance on caffeine of students in the English Department at Fu Jen Catholic University. Please be honest with your answers because ALL RESPONSES will be used for academic purposes ONLY, and regarded as completely confidential. Only overall results and summaries will be presented in the final paper. Thank you for your time.

Description of the survey sample:

This questionnaire will be distributed to all of the students in the English Department at Fu Jen Catholic University.

General Information Questions

1. What grade are you in?

   ___ Freshman ___ Sophomore ___ Junior ___ Senior

2. How many credits do you have right now?

   ___ 9~15 ___ 16~20 ___ 21~25 ___ above 25

3. Are you currently a member of the student association, any club, or other associations (e.g. basketball / volleyball team & sapling)?

   ___ Yes, only one ___ Yes, two ___ Yes, more than two ___ No

4. Do you drink caffeinated drinks (e.g. coffee, energy drinks, tea)?

   ___ Yes (please skip to question 6) ___ No

5. Why don't you drink caffeinated drinks? **(multiple choice)**

   ___ Because it is bad for my health

___ Because I do not have the need to do so

(I do not have to stay up late, I am always energetic… etc.)

___ Because I do not like the taste of coffee

___ Because I do not like the taste of energy drinks

___ Because I do not like the taste of tea

___ Because there are side effects after I consume them

___ Others: _____

(This is the end of the questionnaire. Thank you for spending the time to complete it)

6. What kinds of caffeinated drinks do you drink? **(multiple choice)**

___ Coffee ___ Energy Drinks ___ Tea ___ Others (please specify) _____

7. What kinds of caffeinated drinks do you most often drink? **(single choice)**

___ Coffee ___ Energy Drinks ___ Tea ___ Others (please specify) _____

8. How much caffeine do you consume per day on average?

Please refer to the following chart for calculations. _____ mg/day.

Name of Drink	Amount of Caffeine Contained (mg) (per bag/bottle/can/cup)
7-11 City Café	Please refer to the provided link
Bernachon Coffee – Classic Latte (經典拿鐵)	100
Bernachon Coffee – Classic Mandeling (貝納頌-曼特寧)	130
Bernachon Coffee – Dark Roast Latte (貝納頌-經典義式深焙拿鐵)	175
Drip Coffee	100
Instant Coffee (Nescafé)	60
Starbucks	Please refer to the provided link

Monster (energy drink)	160
Pai Ma Explosive Energy Drink (白馬馬力夯)	45
Paolyta Bull (保力達蠻牛)	30
Red Bull	80
Black Tea (240c.c.)	42
Green Tea (240c.c.)	25
Oolong Tea (240c.c.)	35

*7-11 City Cafe:

http://archive.pixnet.net/blog/post/225602330-7-11-city-cafe%E5%92%96%E5%95%A1-%E5%83%B9%E7%9B%AE%E8%A1%A8-%E5%92%96%E5%95%A1%E5%9B%A0%E7%86%B1%E9%87%8F%E5%AE%B9%E9%87%8F

*Starbucks: http://www.starbucks.com.tw/products/beverages/products_beverages.jspx?cat=beverages

Coffee Related Questions

9. What are your reasons for drinking coffee? **(multiple choice)**

___ I do not drink coffee (please skip to question 12)

___ I believe caffeine is good for my health

___ I like the taste of it

___ I want to enhance my physical performance (i.e. become more energetic)

___ I want to increase my learning efficiency (i.e. to stay focused in class/while studying)

___ I want to stay awake in the mornings

___ I want to stay up late at nights

___ It is simply a habit without specific reasons

___ Others: _____

10. How often do you drink coffee?

___ Every day ___ 5~6 times a week

___ 3~4 times a week ___ 1~2 times a week

___ Others (e.g. once per month): _____

11. How many cups of coffee do you usually drink per day?

___ One cup per day

___ Two cups per day

___ Over two cups per day, please clarify the number of cups: _____ cups

12. Do you think frequent consumption of coffee may damage your health?

___ Yes ___No

Energy Drinks Related Questions

13. What are your reasons for drinking energy drinks? **(multiple choice)**

___ I don't drink energy drinks (please skip to question 16)

___ I believe caffeine is good for my health

___ I like the taste of it

___ I want to enhance my physical performance (i.e. become more energetic)

___ I want to increase my learning efficiency (i.e. to stay focused in class/while studying)

___ I want to stay awake in the mornings

___ I want to stay up late at nights

___ It is simply a habit without specific reasons

___ Others: _____

14. How often do you drink energy drinks?

___ Every day ___ 5~6 times a week

___ 3~4 times a week ___ 1~2 times a week

___ Others (e.g. once per month): _____

15. How many cans of energy drinks do you usually drink per day?

___ One can per day

___ Two cans per day

___ Over two cans per day, please clarify the number of cans: _____ cans

16. Do you think frequent consumption of energy drinks may damage your health?

___ Yes ___No

Tea Related Questions

17. What are your reasons for drinking tea? **(multiple choice)**

___ I don't drink tea (please skip to question 20)

___ I believe caffeine is good for my health

___ I like the taste of it

___ I want to enhance my physical performance (i.e. become more energetic)

___ I want to increase my learning efficiency (i.e. to stay focused in class/while studying)

___ I want to stay awake in the mornings

___ I want to stay up late at nights

___ It is simply a habit without specific reasons

___ Others: _____

18. How often do you drink tea?

___ Every day ___ 5~6 times a week

___ 3~4 times a week ___ 1~2 times a week

___ Others (e.g. once per month): _____

19. How many cups of tea do you usually drink per day?

___ One cup per day

___ Two cups per day

___ Over two cups per day, please clarify the number of cups: _____ cups

20. Do you think frequent consumption of tea may damage your health?

___ Yes ___No

Effects and Side Effects Related Questions

21. Have you ever experienced the following situations after consuming caffeinated drinks?

What kind (s) of caffeinated drink did you consume at the time? **(multiple choice)**

___ Difficulty in performing complicated tasks ○coffee ○energy drinks ○tea

___ Enhancement in alertness and reaction ○coffee ○energy drinks ○tea

___ Enhancement in learning efficiency ○coffee ○energy drinks ○tea

___ Find it hard to remember things ○coffee ○energy drinks ○tea

___ Hyperactivity (cannot sit still) ○coffee ○energy drinks ○tea

___ Headaches ○coffee ○energy drinks ○tea

___ Increase in anxiety/nervousness ○coffee ○energy drinks ○tea

___ Increase in heartbeat ○coffee ○energy drinks ○tea

___ Increase in negative mood ○coffee ○energy drinks ○tea

___ Increase in positive mood ○coffee ○energy drinks ○tea

___ Poorer academic performance (i.e. drinking a caffeinated drink while completing an assignment resulting in a low grade) ○coffee ○energy drinks ○tea

___ Reduce feelings of fatigue (i.e. become energetic) ○coffee ○energy drinks ○tea

___ Reduce sleepiness ○coffee ○energy drinks ○tea

___ Sleep disorder/insomnia ○coffee ○energy drinks ○tea

22. The following question includes three parts:

1) Are you a high consumer (at least one cup every day), a moderate consumer (4~6 cups a week), or a low consumer (1~3 cups a week or less) of caffeinated drinks?

___ High consumer ___ Moderate consumer ___ Low consumer

2) Have you ever experienced the following symptoms in the morning when you did not

drink caffeinated drinks the previous night? **(multiple choice)**

___ Become irritable

___ Cannot stay focused

___ Difficulty in remembering/learning things

___ Laziness

___ Headaches

___ Increase in nervousness

___ Sleepiness/Drowsiness

___ None of the above

3) Were the symptoms relieved after you consume caffeinated drinks? Please circle the number that best describe your opinion (1: Strongly Disagree, 5: Strongly Agree).

1 2 3 4 5

This is the end of the questionnaire. Your time and participation is deeply appreciated~

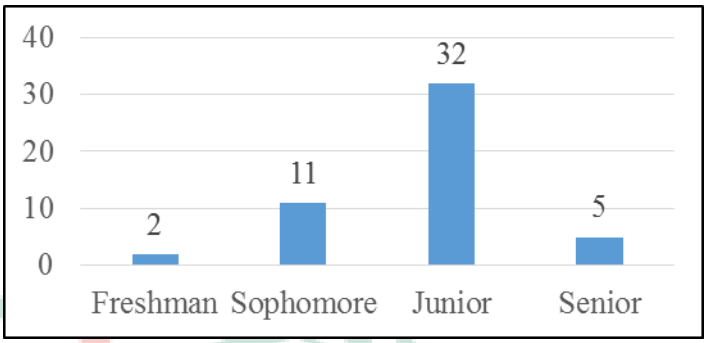
Thank you!

Appendix B: Diagrams

I. General Information Questions

1. What grade are you in?

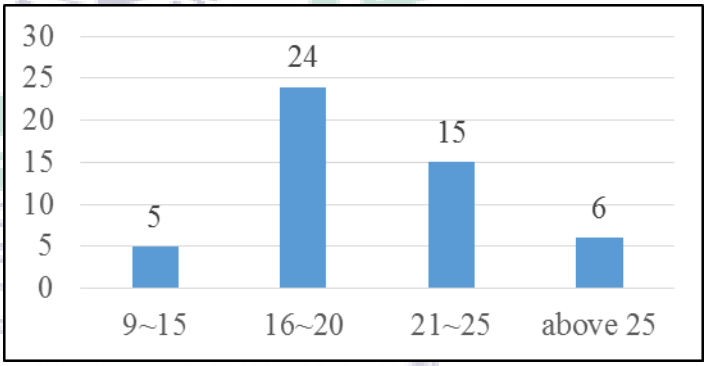
Freshman	2	4%
Sophomore	11	22%
Junior	32	64%
Senior	5	10%



50 responses were received from students in the English Department at Fu Jen Catholic University, with the majority of the students being juniors (64%).

2. How many credits do you have right now?

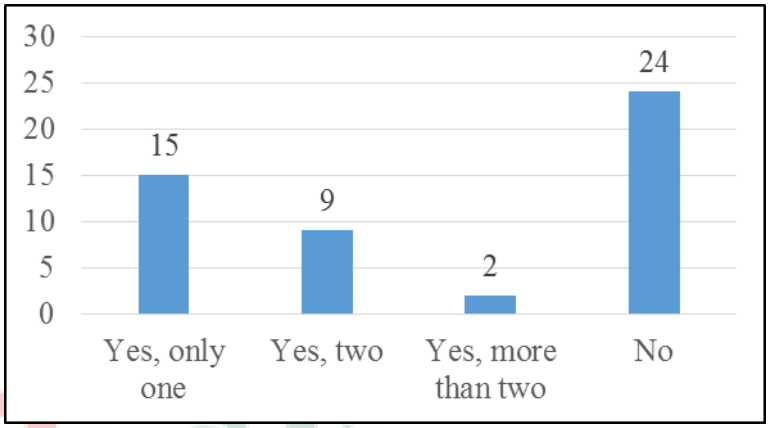
9~15	5	10%
16~20	24	48%
21~25	15	30%
Above 25	6	12%



Most of the respondents have 16~25 university course credits (78%), with a majority of the students having 16~20 course credits (48%)

3. Are you currently a member of the student association, any club, or other associations (e.g. basketball / volleyball team & sapling)?

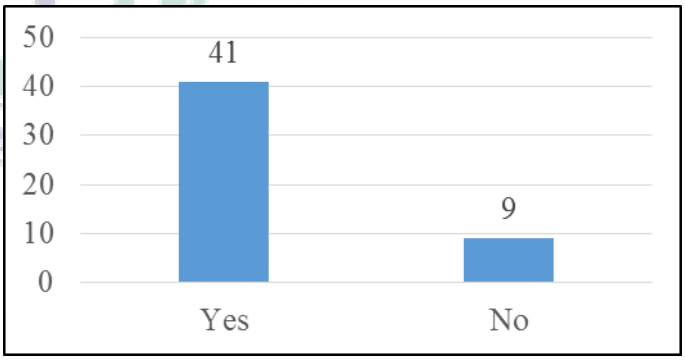
Yes, only one	15	30%
Yes, two	9	18%
Yes, more than two	2	4%
No	24	48%



Nearly half of the students have not become members of the student association, a club, or other association. Though there are quite a few respondents who attend one of the mentioned associations (30%).

4. Do you drink caffeinated drinks (e.g. coffee, energy drinks, tea)?

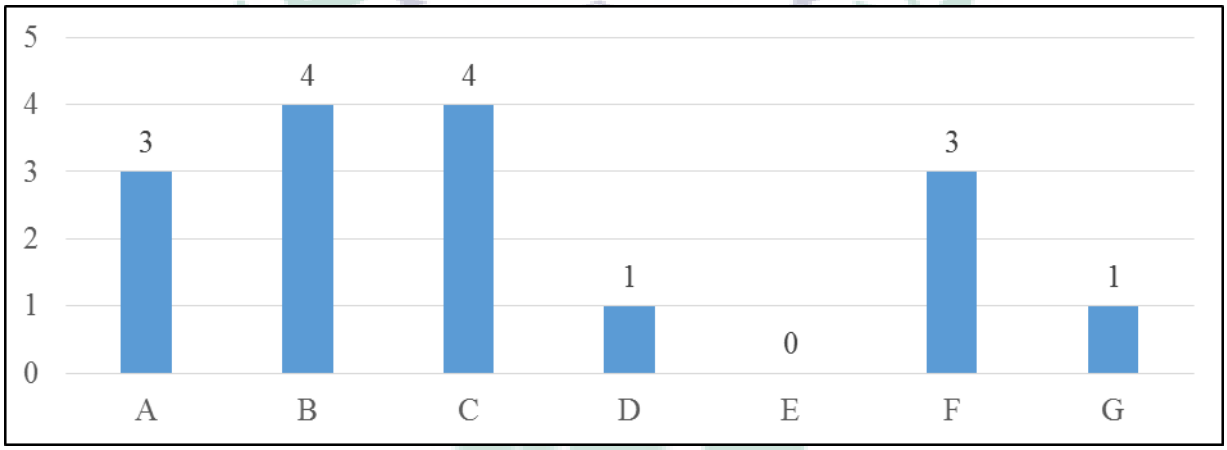
Yes	41	82%
No	9	18%



Out of 50 student respondents, only 9 do not drink caffeinated drinks. As predicted, students may be busy from school work or extracurricular activities so that they need to benefit from caffeine's stimulating effects.

5. Why don't you drink caffeinated drinks? **(multiple choice)**

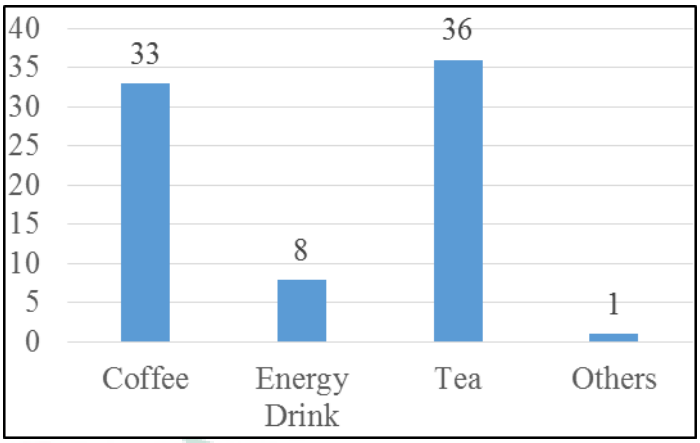
A) Because it is bad for my health	3	33.3%
B) Because I do not have the need to do so (I do not have to stay up late, I am always energetic… etc.)	4	44.4%
C) Because I do not like the taste of coffee	4	44.4%
D) Because I do not like the taste of energy drinks	1	11.1%
E) Because I do not like the taste of tea	0	0
F) Because there are side effects after I consume them	3	33.3%
G) Others	1	11.1%



The main reasons why the 9 student respondents do not drink caffeinated drinks are: 1) they do not have the need to do so (probably have good time management skills); 2) they do not like the taste of coffee (probably too bitter); 3) they think it is bad for their health; 4) they experience side effects when they consume caffeinated drinks. One student respondent even mentions that the last time he or she drank a caffeinated drink, it made him or her extremely sick.

6. What kinds of caffeinated drinks do you drink? **(multiple choice)**

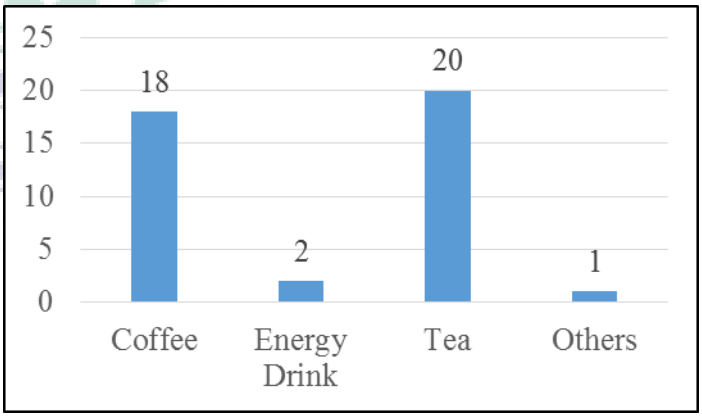
Coffee	33	80.5%
Energy Drink	8	19.5%
Tea	36	87.8%
Others	1	2.4%



The most common caffeinated drinks consumed by the students are tea (87.8%) and coffee (80.5%). The caffeinated drink consumed by the student who chooses “others” is milk tea. The reason why tea is the most commonly consumed drink is probably because of the students’ cultural background (Taiwan used to export tea and tea-drinking is part of Taiwanese culture). As for coffee, the students surveyed probably think coffee contains the most caffeine, so they drink it when they need to benefit from caffeine.

7. What kinds of caffeinated drinks do you most often drink? **(single choice)**

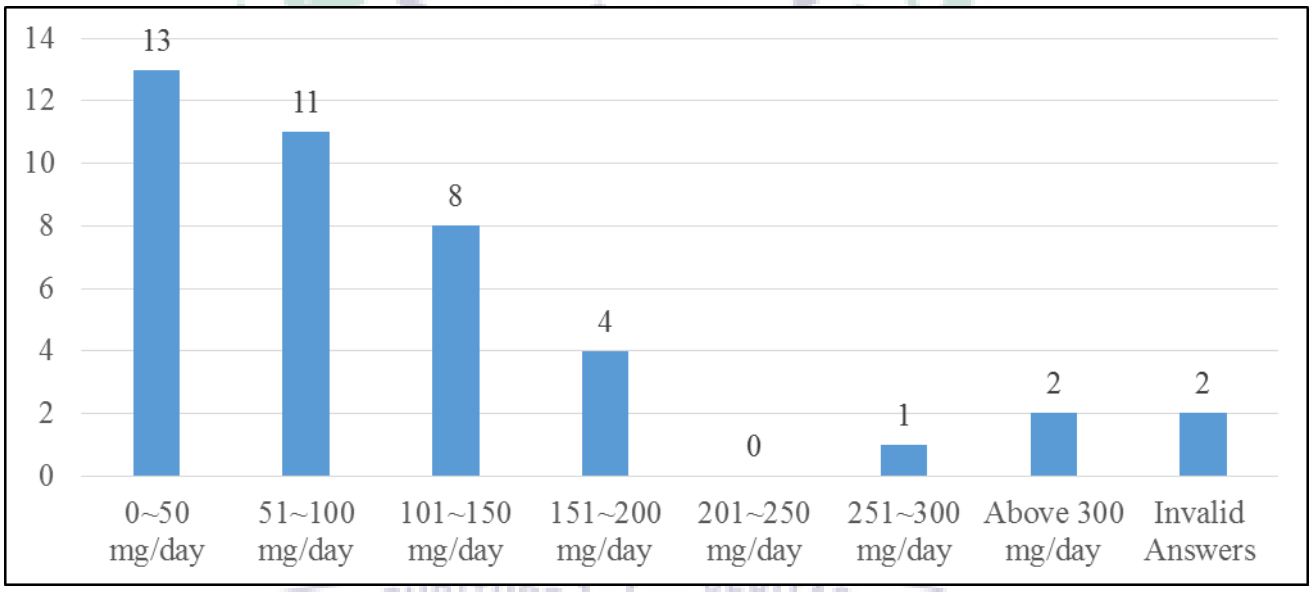
Coffee	18	43.9%
Energy Drink	2	4.9%
Tea	20	48.8%
Others	1	2.4%



The most common caffeinated drink consumed by the 41 student respondents is tea (48.8%), which is probably due to the students’ cultural background, as mentioned in the previous question.

8. How much caffeine do you consume per day on average?

0~50 mg/day	13	26%
51~100 mg/day	11	22%
101~150 mg/day	8	16%
151~200 mg/day	4	10%
201~250 mg/day	0	0
251~300 mg/day	1	2%
Above 300 mg/day	2	4%
Invalid Answers	2	4%

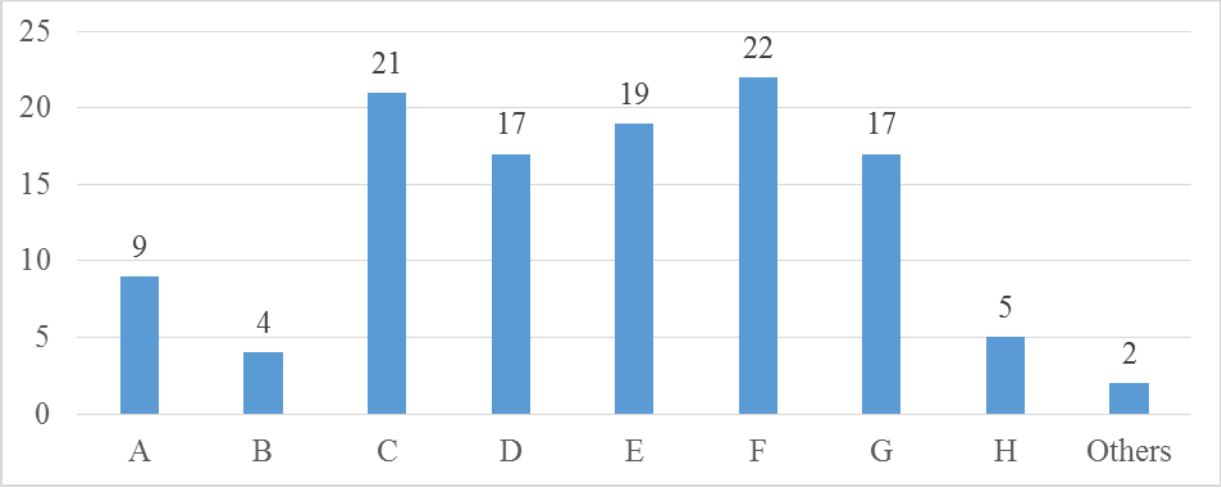


A majority of the student respondents consume less than 100mg of caffeine per day (48%). This is probably because just a small amount of the drug is effective enough for the students to experience the desired effects. There are two invalid answers: one student mistakes “the amount of caffeine consumed” for “the price of the drink,” and the other student only put down which brand of coffee he or she drinks.

II. Coffee Related Questions

9. What are your reasons for drinking coffee? **(multiple choice)**

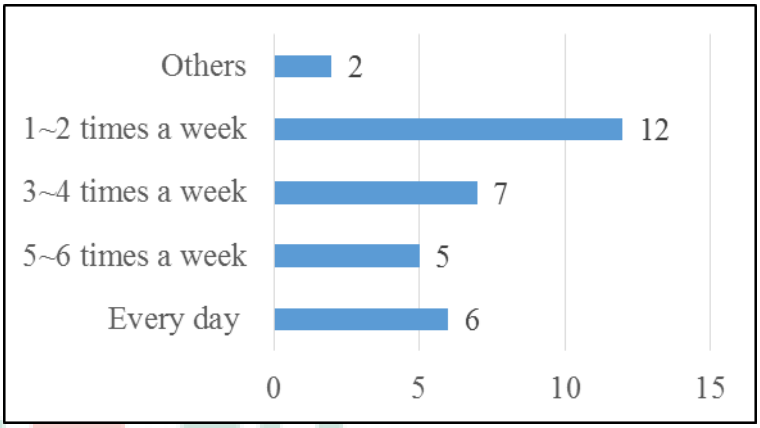
A) I do not drink coffee	9	22%
B) I believe caffeine is good for my health	4	9.8%
C) I like the taste of it	21	51.2%
D) I want to enhance my physical performance (i.e. become more energetic)	17	41.5%
E) I want to increase my learning efficiency (i.e. to stay focused in class/while studying)	19	46.3%
F) I want to stay awake in the mornings	22	53.7%
G) I want to stay up late at nights	17	41.5%
H) It is simply a habit without specific reasons	5	12.2%
Others	2	4.9%



The top three reasons why the students drink coffee are: 1) I want to stay awake in the mornings; 2) I like the taste of it; 3) I want to increase my learning efficiency. However, 9 out of the 41 respondents do not drink coffee, probably because of its bitter taste.

10. How often do you drink coffee?

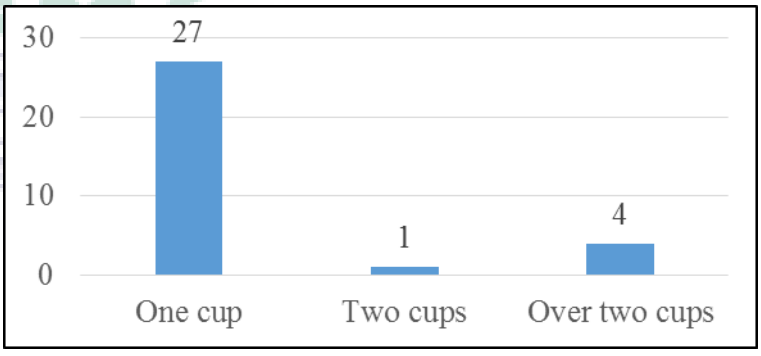
Every day	6	18.8%
5~6 times a week	5	15.6%
3~4 times a week	7	21.9%
1~2 times a week	12	37.5%
Others	2	6.3%



Most of the student respondents only drink coffee 1~2 times a week (37.5%). This might be because there are only a few days in the week when they are tired enough to want to benefit from caffeine's stimulating effects. On the other hand, there are only 6 out of 31 student respondents who drink coffee every day.

11. How many cups do you usually drink per day?

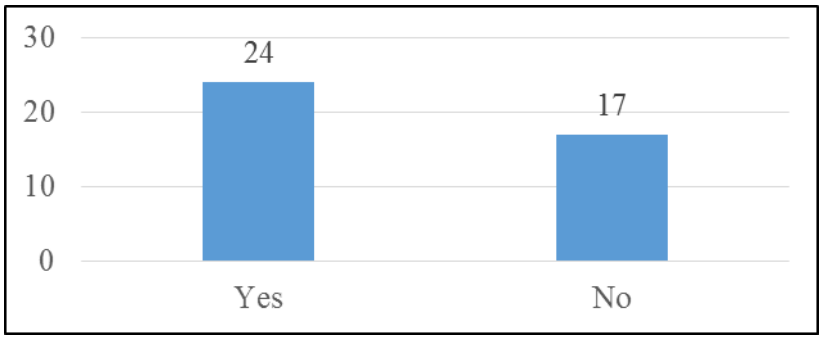
One cup	27	84.4%
Two cups	1	3.1%
Over two cups	4	12.5%



Most student respondents (84.4%) only drink one cup of coffee per day, probably because the amount of caffeine contained in a cup is effective enough.

12. Do you think frequent consumption of coffee may damage your health?

Yes	24	58.5%
No	17	41.5%

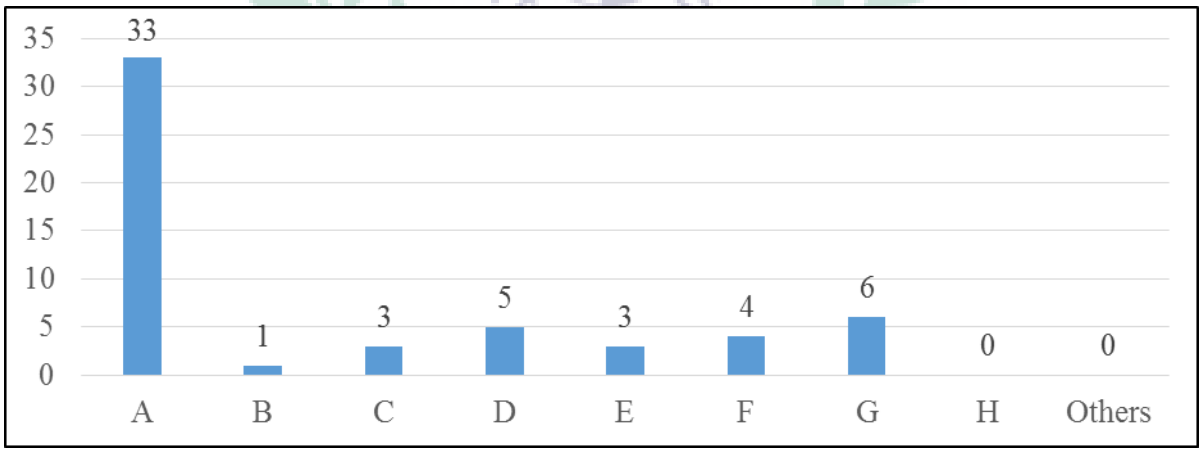


Out of the 32 student respondents who drink coffee, 24 students think frequent consumption of coffee may damage their health, while the other 17 do not think so. This is probably because most of them have heard about caffeine intoxication before, thus believing that overconsumption of the drug may damage their health.

III. Energy Drinks Related Questions

13. What are your reasons for drinking energy drinks? **(multiple choice)**

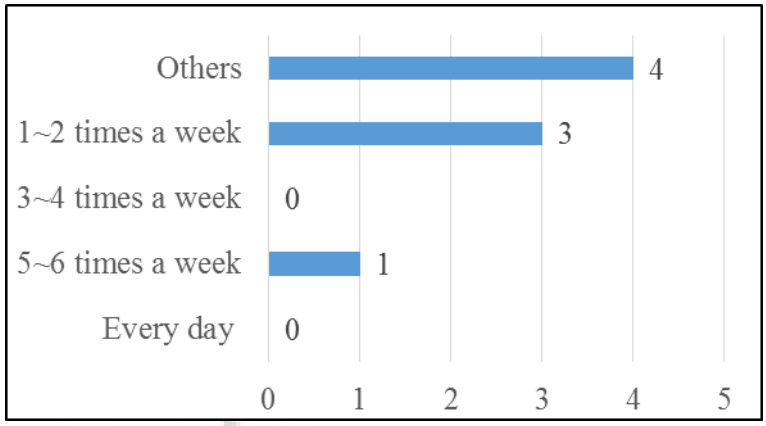
A) I do not drink energy drinks	33	80.5%
B) I believe caffeine is good for my health	1	2.4%
C) I like the taste of it	3	7.3%
D) I want to enhance my physical performance (i.e. become more energetic)	5	12.2%
E) I want to increase my learning efficiency (i.e. to stay focused in class/while studying)	3	7.3%
F) I want to stay awake in the mornings	4	9.8%
G) I want to stay up late at nights	6	14.6%
H) It is simply a habit without specific reasons	0	0
Others	0	0



Out of the 41 student respondents who drink caffeinated drinks, 33 of them do not drink energy drinks. For those who drink energy drinks, they drink them mostly because they want to stay up late at nights (14.6%), believing that energy drinks are effective stimulants.

14. How often do you drink energy drinks?

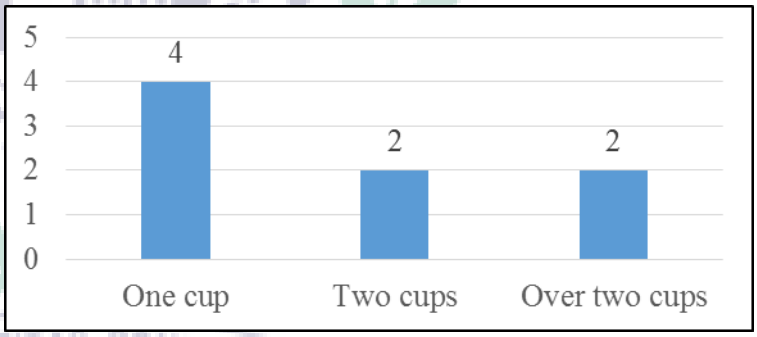
Every day	0	0
5~6 times a week	1	12.5%
3~4 times a week	0	0
1~2 times a week	3	37.5%
Others	4	50%



None of the student respondents drink energy drinks every day. 50% of the respondents only dink energy drinks when they need to stay up late, especially before exams. This is probably because they believe overconsumption of the drink is bad for their health.

15. How many cans do you usually drink per day?

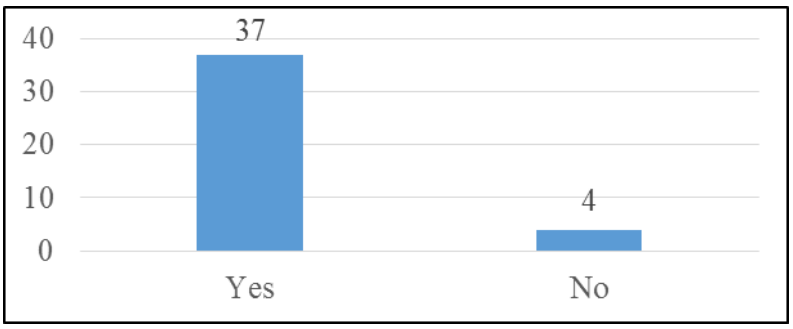
One cup	4	50%
Two cups	2	25%
Over two cups	2	25%



Most of the student respondents only drink one can of energy drinks per day, probably because they believe drinking too much of the drink may damage their health.

16. Do you think frequent consumption of energy drinks may damage your health?

Yes	37	90.2%
No	4	9.8%

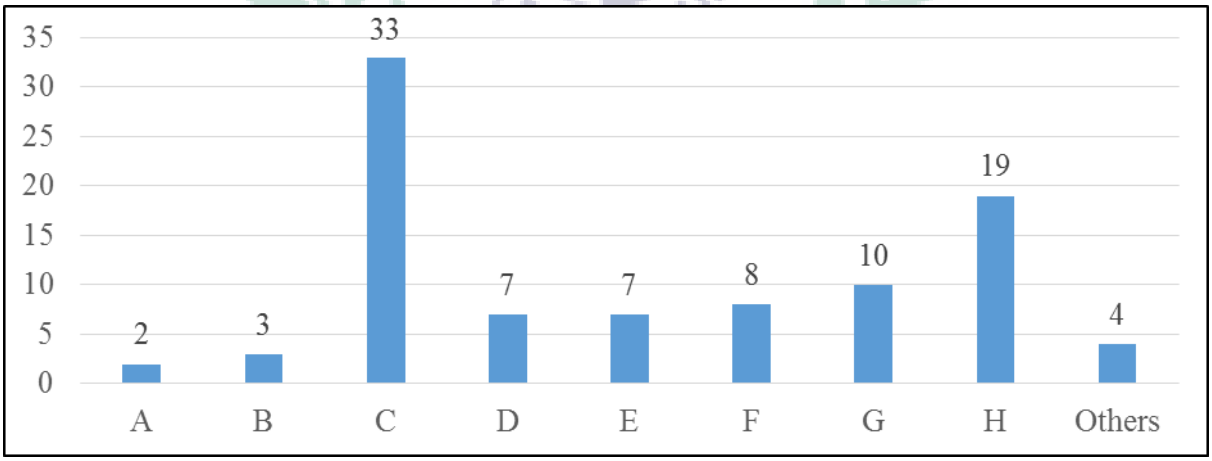


Over 90% of the student respondents believe that frequent consumption of energy drinks will damage their health. This is probably because they believe that there are many unknown substances added to the drink to make it such an effective stimulant, and they assume that those unknown substances are bad for their health.

IV. Tea Related Questions

17. What are your reasons for drinking tea? **(multiple choice)**

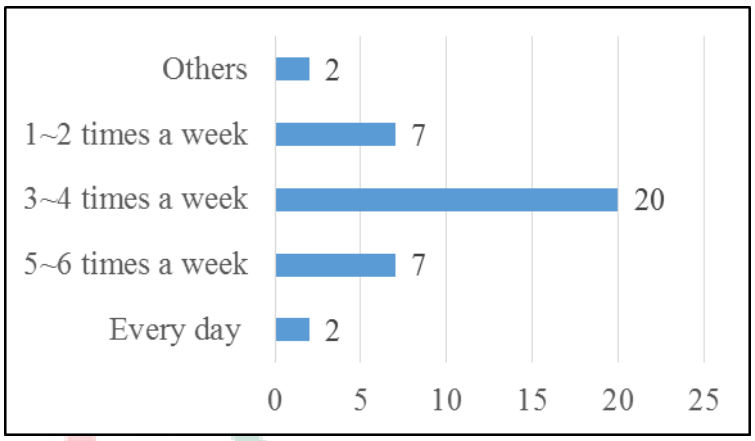
A) I do not drink tea	2	4.9%
B) I believe caffeine is good for my health	3	7.3%
C) I like the taste of it	33	80.5%
D) I want to enhance my physical performance (i.e. become more energetic)	7	17.1%
E) I want to increase my learning efficiency (i.e. to stay focused in class/while studying)	7	17.1%
F) I want to stay awake in the mornings	8	19.5%
G) I want to stay up late at nights	10	24.4%
H) It is simply a habit without specific reasons	19	46.3%
Others	4	9.8%



Only 2 out of 41 student respondents do not drink tea. The main reason why the other 39 respondents drink tea is that they like the taste of it (80.5%). In addition, for 46.3% of the student respondents drinking tea is simply a habit without specific reasons. This is probably because tea-drinking is part of Taiwanese culture so the students are used to drinking tea from a young age.

18. How often do you drink tea?

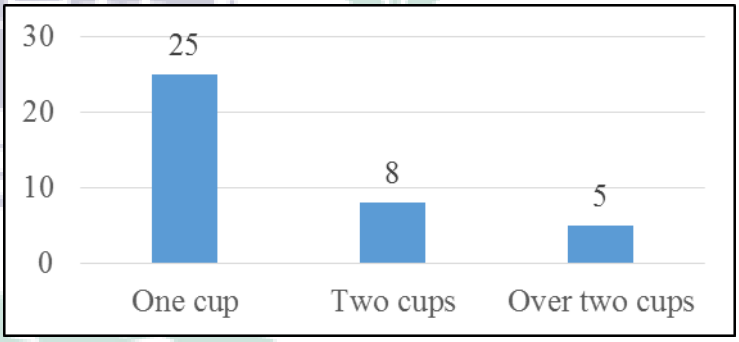
Every day	2	5.3%
5~6 times a week	7	18.4%
3~4 times a week	20	52.6%
1~2 times a week	7	18.4%
Others	2	5.3%



Most of the students drink tea 3~4 times a week for this is probably a habit of theirs (one respondent missed the question).

19. How many cups do you usually drink per day?

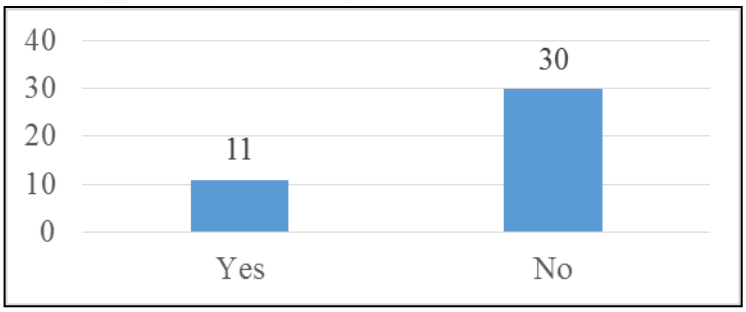
One cup	25	50%
Two cups	8	25%
Over two cups	5	25%



Most of the students only drink a cup of tea per day (one respondent missed the question).

20. Do you think frequent consumption of tea may damage your health?

Yes	11	26.8%
No	30	73.2%

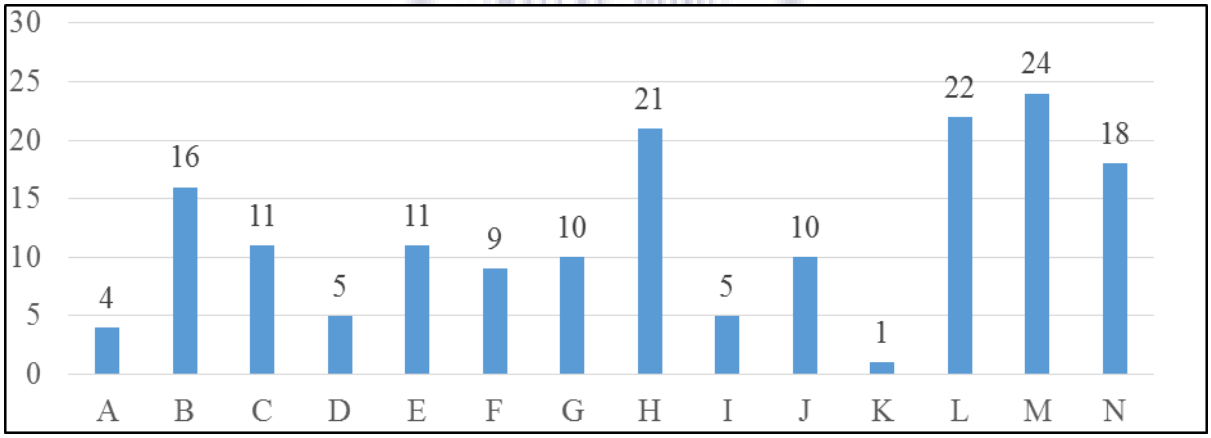


73.2% of the students do not think frequent consumption of tea will damage their health, probably because they are used to seeing people drinking tea without having side effects.

Effects and Side Effects Related Questions

21. Have you ever experienced the following situations after consuming caffeinated drinks?

A) Difficulty in performing complicated tasks	4	9.8%
B) Enhancement in alertness and reaction	16	39%
C) Enhancement in learning efficiency	11	26.8%
D) Find it hard to remember things	5	12.2%
E) Hyperactivity (cannot sit still)	11	26.8%
F) Headaches	21	51.2%
G) Increase in anxiety/nervousness	10	24.4%
H) Increase in heartbeat	4	9.8%
I) Increase in negative mood	5	12.2%
J) Increase in positive mood	10	24.4%
K) Poorer academic performance	1	2.4%
L) Reduce feelings of fatigue	22	53.7%
M) Reduce sleepiness	24	58.5%
N) Sleep disorder/insomnia	18	43.9%

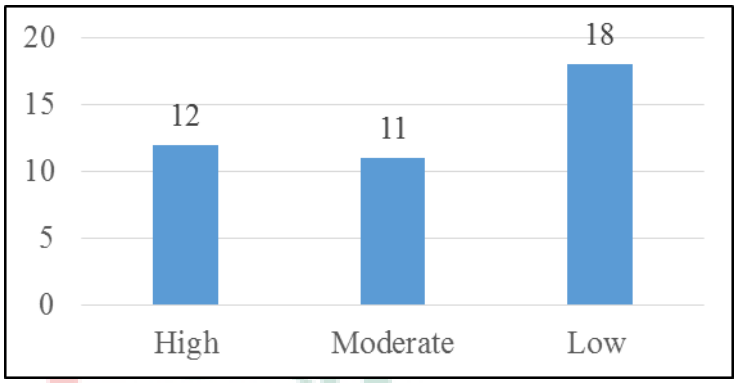


The most significant beneficial effects of caffeine are that it reduces sleepiness and feelings of fatigue, whereas the most significant negative effects are sleep disorders and increases in heartbeat.

22. The following question includes three parts:

1) Are you a high consumer (at least one cup every day), a moderate consumer (4~6 cups a week), or a low consumer (1~3 cups a week or less) of caffeinated drinks?

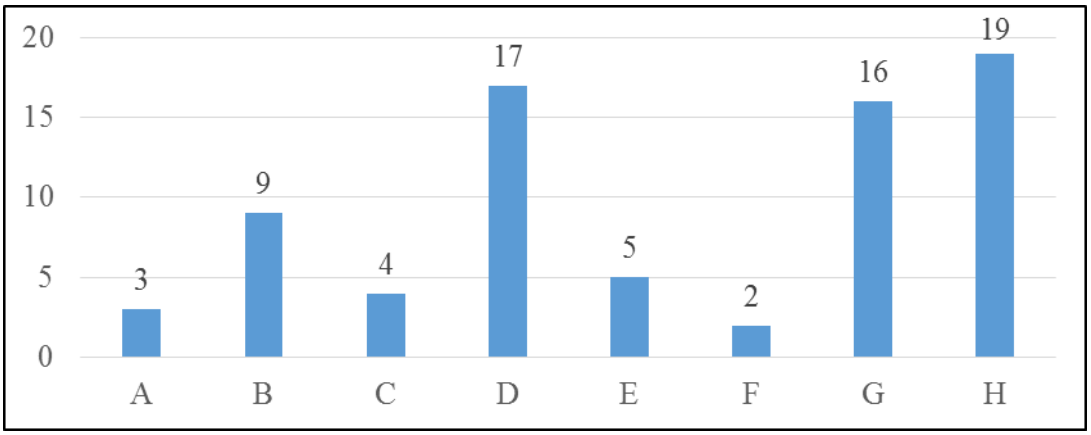
High consumer	12	29.3%
Moderate consumer	11	26.8%
Low consumer	18	43.9%



Most of the student respondents are low consumers of caffeinated drinks. This is probably because to most students, just a small amount of caffeine is effective enough to allow them to experience whatever beneficial effects they want to gain from the drug.

2) Have you ever experienced the following symptoms in the morning when you did not drink caffeinated drinks in the previous night? **(multiple choice)**

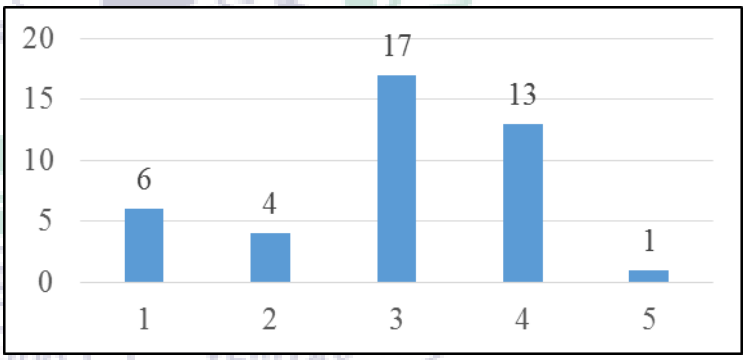
A) Become irritable	3	7.3%
B) Cannot stay focused	9	22%
C) Difficulty in remembering/learning things	4	9.8%
D) Laziness	17	41.5%
E) Headaches	5	12.2%
F) Increase in nervousness	2	4.9%
G) Sleepiness/Drowsiness	16	39%
H) None of the above	19	46.3%



When experiencing overnight caffeine withdrawal, 46.3% of the student respondents (mostly low consumers of caffeine) do not suffer from any symptoms. Thus high consumers are more likely to become ill when not enough caffeine is consumed, since they are more dependent on the drug. The most commonly experienced symptoms are laziness and sleepiness.

3) Were the symptoms relieved after you consume caffeinated drinks? Please circle the number that best describe your opinion (1: Strongly Disagree, 5: Strongly Agree).

1	6	14.6%
2	4	9.8%
3	17	41.5%
4	13	31.7%
5	1	2.4%



When suffering from caffeine withdrawal, almost half of the student respondents' symptoms are not relieved after drinking caffeinated drinks. (Problems with this question, should limit it to those who experienced symptoms)