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Caffeine awareness among college going students: An insight from Pilot study

Narender Suhag[1]*, Dr. Priyanka Singh[2]

[1] Research Scholar FMS, Manav Rachna International University, Faridabad, Haryana, India
[2] Associate Professor FMS, Manav Rachna International University, Faridabad, Haryana, India

Abstract
Consumption of caffeinated drinks is increasing among adults especially in the form of carbonated and energy drinks. However adults lack the knowledge of caffeine content in the commonly consumed beverages. If true, it is difficult to collect the information on caffeinated drinks consumed among adults and its health implications. This preliminary study is an attempt to investigate the caffeine awareness and its intake among college going students in Faridabad. College going students at Under graduate, Post graduate and above were survyed using the Caffeine Literacy Questionnaire. A structured questionnaire was designed to extract the information on level of awareness and consumption of caffeinated drinks among the college going students. An online survey was conducted to collect the data. Sixty five students participated in the study. Sample was collected from students enrolled in different programs like under graduate, post graduate and above post graduate. Out of 65 participants, females were 46.9% and males participated were 53.1%. Majority of the students were caffeine drink consumers in some form or the other and rest were neither the users nor were sure about the caffeine content in their drinks. This study shows that the students were able to identify the beverages containing caffeine or its content in the commonly consumed beverages. The results of the study ask for further intervention and knowledge inputs among adults in regard to the health implications of caffeinated drinks intake.

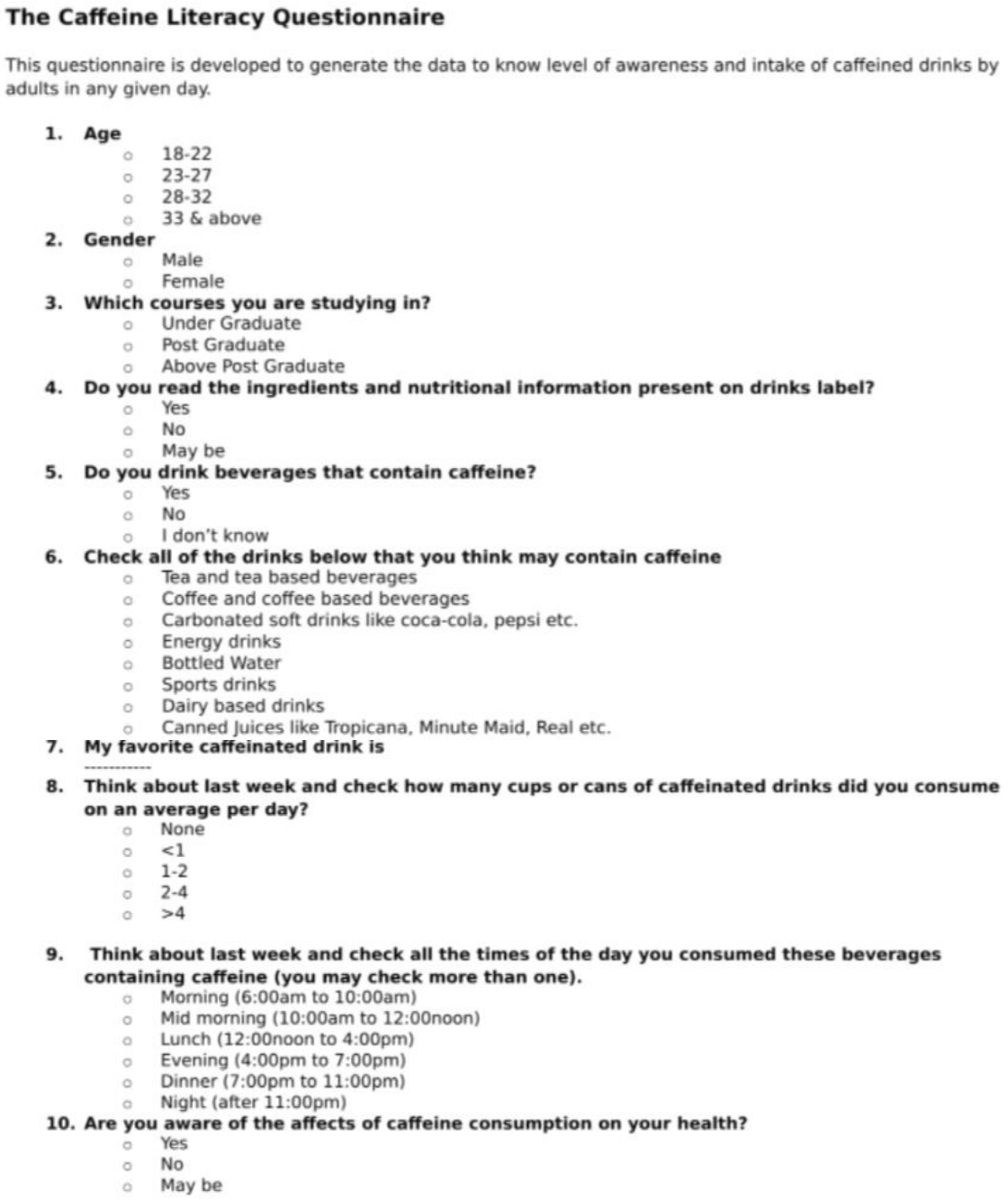
Keywords: caffeine, beverages, students, consumption

Introduction
Caffeine is one of the most commonly consumed ingredients and it has multiple uses in food and drinks [8]. Naturally caffeine is present in tea, coffee and cocoa but now it has become a common ingredient in array of commercial beverages available in the market. These caffeinated drinks are consumed in all age groups and its usage is increasing among adolescents and adults. The pattern of intake may be different in different age groups with adults preferring carbonated soft drinks, energy drinks and coffee flavored drinks as their choice of beverages [6]. High intake of caffeine also leads to its addiction and at times considered as a drug of abuse. Generally human body nervous system has tolerance to low or moderate levels of caffeine intake but its high intake does not show complete tolerance [1]. The primary source of caffeine is coffee, which accounts for 54% of all caffeine use, tea accounts for 43% and rest is cocoa consumption. Geographically its consumption varies from country to country. The per capita rate of caffeine intake in US and Canada is approximately 3 times of the world as a whole but half of the heavy tea consuming countries like UK [2]. Asian countries are also among heavy tea intakes for their caffeine consumption. Caffeine is generally consumed by youngsters for purposes like studying, partying, driving, for instant energy etc. Though natural sources of caffeine are tea, coffee and cocoa beverages but soft drinks and energy drinks are more popular among adults. Knowledge of beverages containing caffeine or its amount present in the drink is fair among adults. There is also an evidence that very few of them who are aware of the health hazards related to over dose of caffeinated beverages. Usage of energy drinks or other beverages with high level of caffeine content leads to the addiction of these drinks. Many adults do not know the proper definition of caffeinated or non-caffeinated drinks. This lack of information may lead to serious health issues from disturbing the nervous system to cardiovascular problems [3]. Despite lack of knowledge about caffeinated drinks they are gaining popularity and their volume is increasing every year in the market. They are readily available in the institute and supermarkets. Companies are promoting the intake of caffeinated drinks and its related benefits but shown little concern on its health implications. Therefore it is high time to become aware of the caffeinated beverages readily available in stores and equally important to understand their functioning in the human body [7].

Methods
Data Collection
Both exploratory as well as descriptive research technique were used to gain the background information and recent trends on consumption of caffeinated beverages. Both secondary as well as primary data was used to conduct the exploratory research. For primary data collection, a structured questionnaire was designed to collect the information on adult's literacy regarding caffeinated beverages. On-line survey research was used to collect the data for cross sectional analysis at a faster rate. Stratified random sampling technique was used to collect the data. Students of Manav Rachna International University studying in under graduate, post graduate and above post graduate programs were part the sample unit. Study was limited to management students and all the other qualifications and programs were excluded from this study.

Questionnaire

Based on our objectives, questionnaire of 10 questions was framed to assess the awareness level among college going students in regard to caffeinated beverages. Q1-Q3 assessed the demographic information and Q4-Q10 assessed the awareness among users and non-users of caffeinated drinks (Figure 1). Each participant was informed regarding the study and those who were willing to participate filled the questionnaire.



The Caffeine Literacy Questionnaire

This questionnaire is developed to generate the data to know level of awareness and intake of caffeined drinks by adults in any given day.

1. **Age**
   - 18-22
   - 23-27
   - 28-32
   - 33 & above
2. **Gender**
   - Male
   - Female
3. **Which courses you are studying in?**
   - Under Graduate
   - Post Graduate
   - Above Post Graduate
4. **Do you read the ingredients and nutritional information present on drinks label?**
   - Yes
   - No
   - May be
5. **Do you drink beverages that contain caffeine?**
   - Yes
   - No
   - I don't know
6. **Check all of the drinks below that you think may contain caffeine**
   - Tea and tea based beverages
   - Coffee and coffee based beverages
   - Carbonated soft drinks like coca-cola, pepsi etc.
   - Energy drinks
   - Bottled Water
   - Sports drinks
   - Dairy based drinks
   - Canned Juices like Tropicana, Minute Maid, Real etc.
7. **My favorite caffeinated drink is**
   ---
8. **Think about last week and check how many cups or cans of caffeinated drinks did you consume on an average per day?**
   - None
   - <1
   - 1-2
   - 2-4
   - >4
9. **Think about last week and check all the times of the day you consumed these beverages containing caffeine (you may check more than one).**
   - Morning (6:00am to 10:00am)
   - Mid morning (10:00am to 12:00noon)
   - Lunch (12:00noon to 4:00pm)
   - Evening (4:00pm to 7:00pm)
   - Dinner (7:00pm to 11:00pm)
   - Night (after 11:00pm)
10. **Are you aware of the affects of caffeine consumption on your health?**
    - Yes
    - No
    - May be

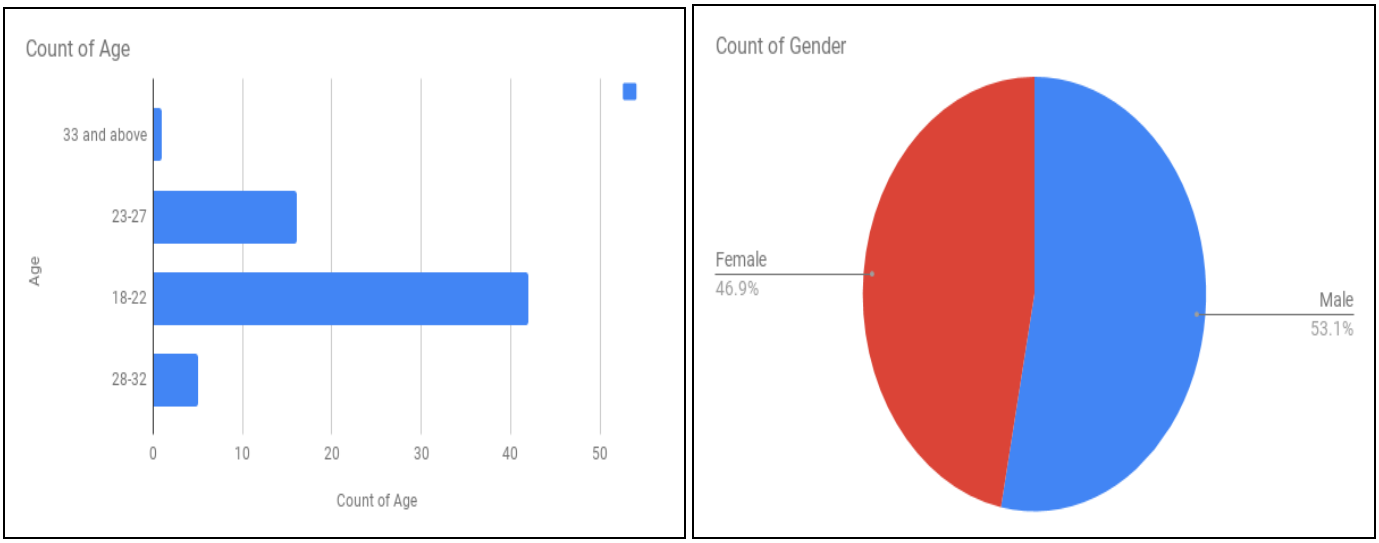
Fig 1: comprises of questions on caffeine literacy in the college going students

Data Analysis

Data collected through Google forms online survey technique was recorded and presented in the form of graphs for easy understanding of the readers. Data collected from Google forms was saved into a spreadsheet and the list of responses was converted into charts for better visualization.

Results

In total 65 students participated in the study. Sample was collected from students enrolled in different programs like under graduate, post graduate and above post graduate. Out of 65 participants, females were 46.9% and males participated were 53.1% with a mean of the age 21.92 years (Figure 2). Majority of the students were caffeine drink consumers in some form or the other and rest were neither the users nor were sure about the caffeine content in their drinks.



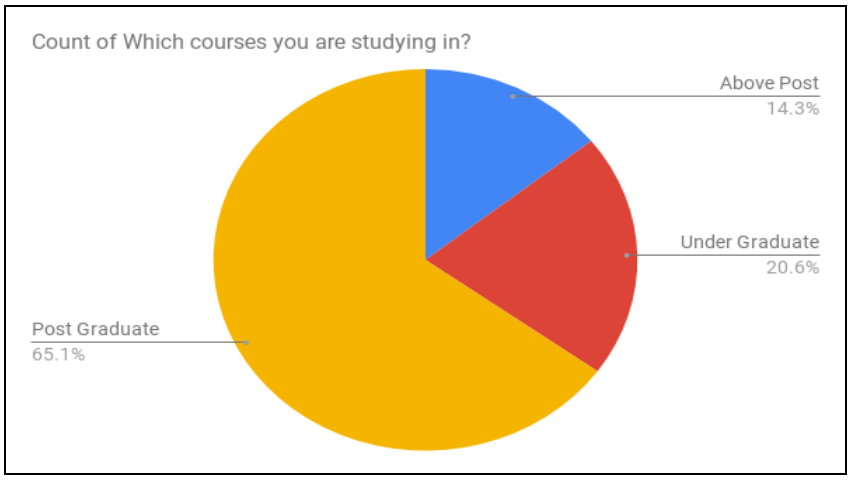


Fig 2: shows the demographic charateristics of the college going students.

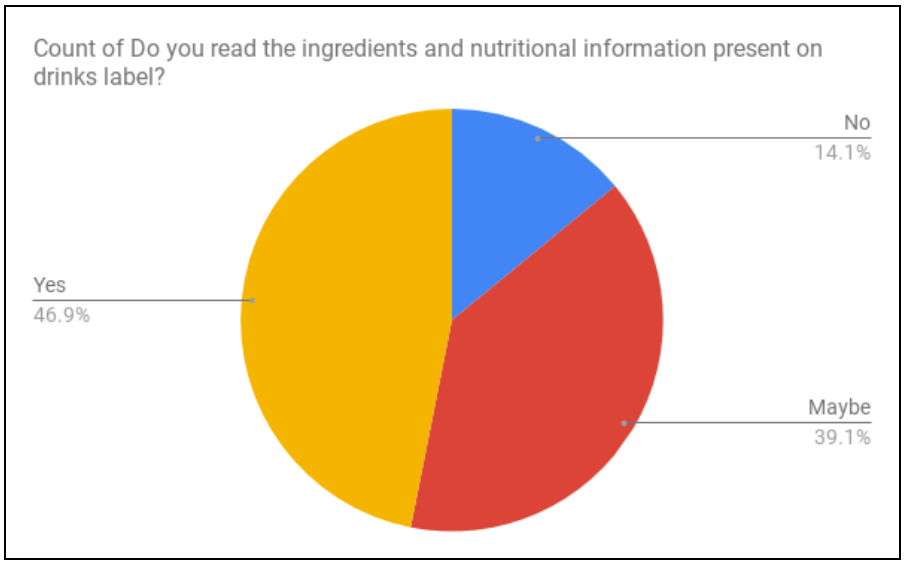


Fig 3: shows that whether the participants read the information present on the label or not.

To gain knowledge about the ingredients and nutritional information mentioned on the label of the beverage, it was observed that only 46.9% users read the label and 39.1% users are not sure if they read the label before consuming any caffeinated drink. 14.1% users do not read at all while purchasing or consuming the caffeinated drinks (Figure 3).

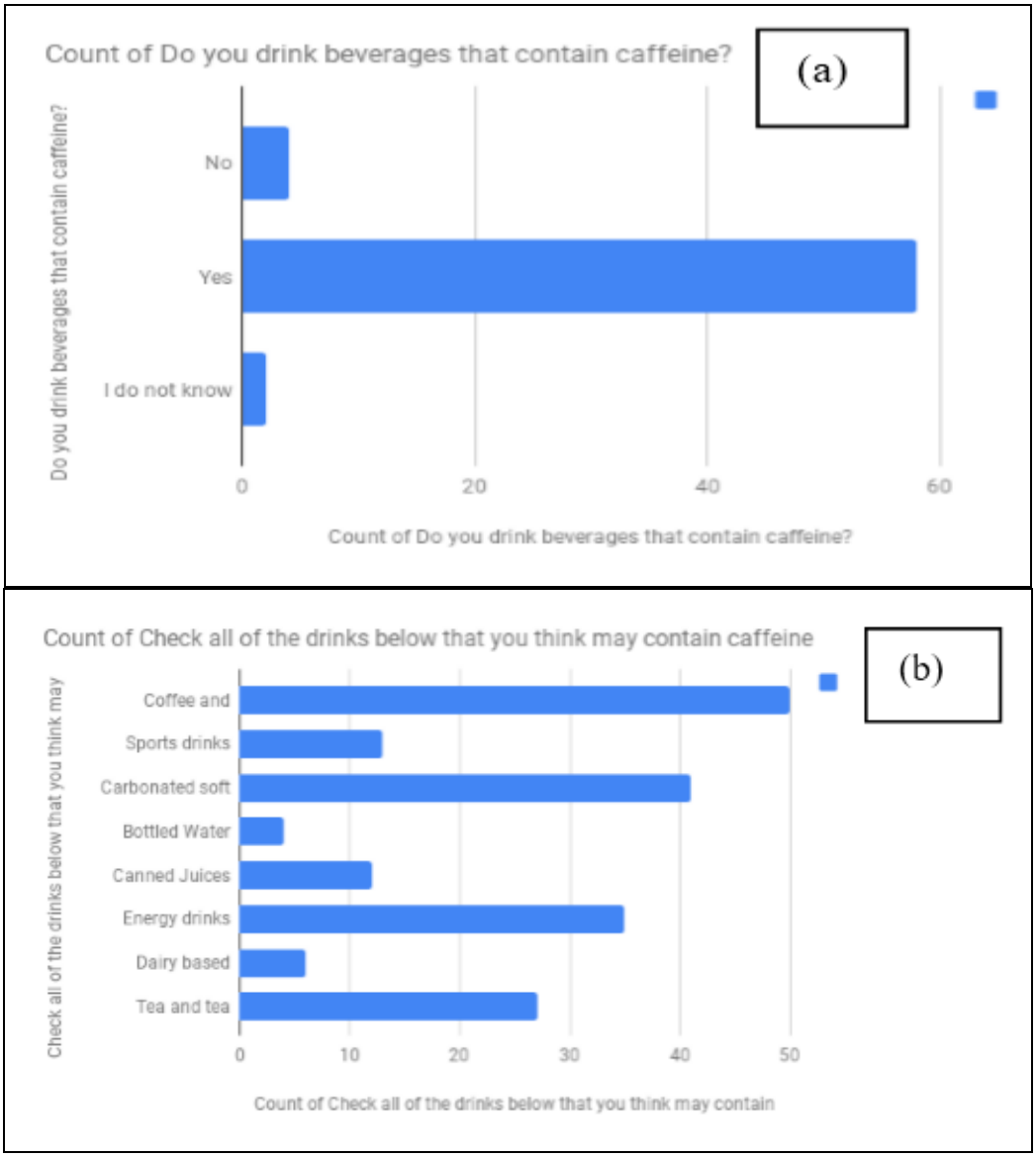
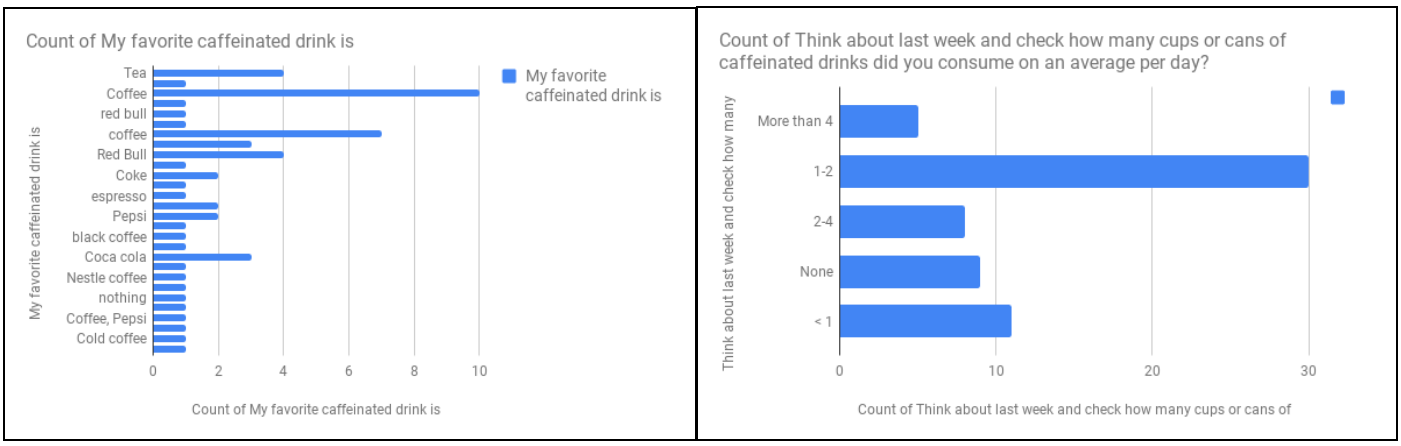


Fig 4: shows the caffeinated drink users (a) and the awareness of beverages that contain caffeine (b).

Most participants were reported in-takers of caffeinated drinks. Only a few of them were not sure of the caffeine content in the beverages they consume. It showed a high level of consumption of caffeine in the college going students (Figure 4a). Possible reasons could be their easy availability in the campus and supermarkets and popularity among adults.

When the participants were asked about the drinks containing caffeine, there were only few who answered incorrect marking canned juices as category of caffeinated drinks. This report shows that all the users are well aware of the beverages contain caffeine (Figure 4b).



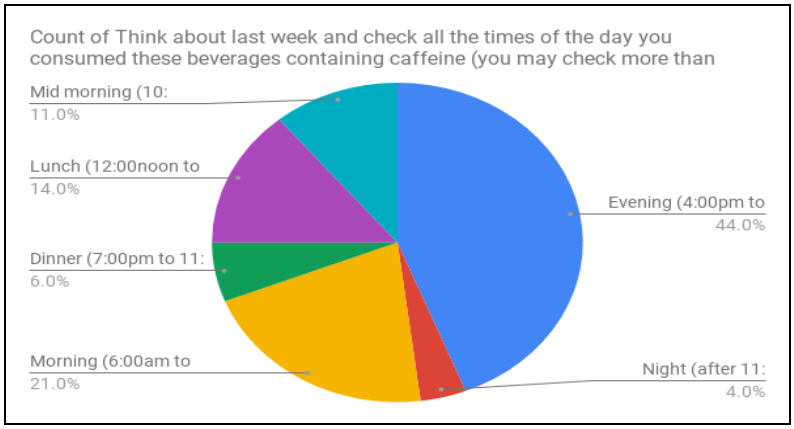


Fig 5: Shows the preferred choice of caffeinated drink, average consumption per day and the time period in which they consume.

In the preferred choice of favorite caffeinated drinks, most of the students named coffee and coffee based drinks as their most liked beverage followed by tea and soft drinks. Some participants also named energy drink in their preference of caffeinated drinks. When asked about the average consumption per day, it reported a moderate level of consumption with one to two cups or cans of caffeinated drinks were consumed by majority of the participants and trend of consumption was high in the morning and evening time period (Figure 5).

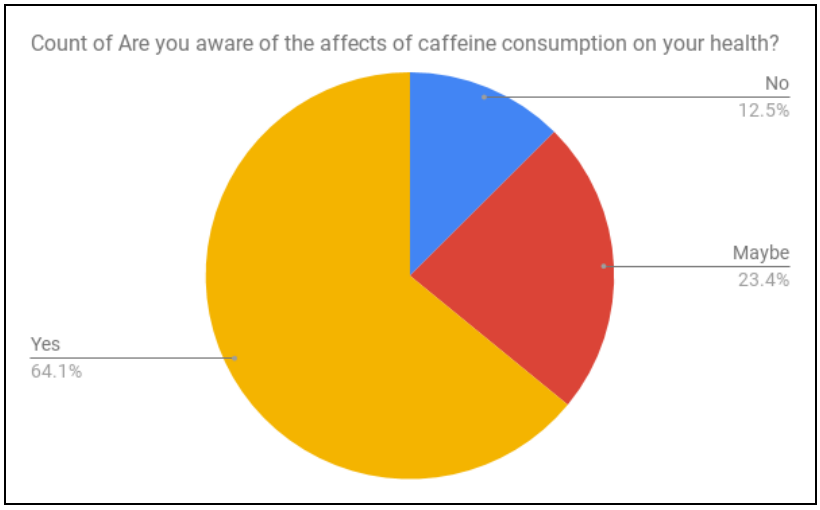


Fig 6: Shows the awareness regarding health implications of caffeine consumption

It was interesting to notice that maximum participants (64.1%) were aware of the effects of caffeine intake and its possible side effects in the human body. Rest (35.9%) users were either not aware or in doubt of the health implications of the caffeine intake (Figure 6).

Discussion

Results from the current study explicitly portray a picture of a growing culture of caffeinated drinks intake in the college going students. Possible reasons could be the marketing of these drinks targeting younger generation, preferred taste of coffee flavor among adults and their easy availability in the campus and favorite hot spots of the students. These caffeinated drinks are equally popular among male and female students. It was interesting to observe that there is a high level of consumption despite knowing the possible health implications of its consumption [5]. This shows that the popularity of these caffeinated drinks is continuously increasing in this age group [4].

Limitations

1. There is a shortage of secondary data in regard to the awareness of caffeinated beverages among adults.
2. Lack of knowledge of the ingredients and nutritional information present on the drinks label.
3. This study was confined to the management students of MRIU.

Conclusion

Despite the awareness and possible health implications of caffeinated drinks, the practice of consuming caffeinated drinks is high among college going students and it may stated that their consumption will keep on increasing in the coming years from the above findings. Therefore it becomes important to impart knowledge among students on benefits, side-effects and correction of wrong perception about caffeinated beverages.

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