

Awareness on the effects of caffeine among students -A survey

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ABSTRACT

Introduction: Caffeine acts as a natural stimulant by activating central nervous system mainly in concentration, memory enhancement, and physical performance improvement. Chronic caffeine consumption lowers the risk rate of developing neurodegenerative diseases. The main aim of this study is to create awareness on the effects of caffeine among students. **Materials and Methods:** The questionnaire-based study was carried out online through a SurveyPlanet link about 350 participants. The participants who undertook the survey were undergraduate students of various medical and dental colleges. A total of 30 questions were given and it was based on to detect the awareness of the effects of caffeine on the body, addiction of caffeine intake, and its withdrawal symptoms. Based on the responses from the subjects, statistical analysis was performed and the results were tabulated systematically. **Results:** Around 78.9% were found to admit that they consume caffeine, among which around 69.8% preferred to consume in the form of coffee/tea, 27.1% in the form of Coke/Pepsi, etc., and 3.1% as energy drinks such as Redbull and Monster Energy. 44.3% of the subjects believed that it was habitual and only 9% believed they are addicted to caffeine and 15.4% don't know the reason why they are taking caffeine. 65.4% of the subjects stated that they will limit their caffeine consumption after going through this questionnaire and participating in this survey. **Conclusion:** Caffeine has been demonstrated to increment sharpness as well as alertness level of the individual and has preference among the students. Uncontrolled admission of caffeine may cause unfavorable impacts, for which there is a need to keep a check on the admission of caffeine. More research might be required to edify the general public on the consumption of caffeine and its antagonistic impacts for the well-being of the society.

KEY WORDS: Addiction, Caffeine, Withdrawal symptoms

INTRODUCTION

Caffeine is a central nervous system stimulant of the methylxanthine category. It is the world's most generally consumed consciousness-altering drug. It is not like several different psychoactive substances, it is legal and unregulated in nearly all components of the globe. There are various notable mechanisms of action to clarify the effects of caffeine. Caffeine is also said to have positive and negative health effects.^[1] Caffeine's properties as associate analgesic adjuvant with nonsteroidal anti-inflammatory drugs or acetaminophen are very well observed and documented for research purposes.^[2]

Caffeine use is increasing worldwide. The underlying motivations are mostly on improving concentration

and memory power and improvement of physical performance. Caffeine-containing items influence the vascular system, with their positive inotropic and chronotropic impacts, with their locomotive activity stimulation and anxiogenic-like effects. Thus, it is of interest to look at whether or not these effects may be harmful for health.

Moreover, caffeine-related abuse and dependence have become a lot of and a lot of common and may result in intoxication due to caffeine, which puts people in danger for premature and unnatural death.^[3] Caffeine is one among the foremost wide consumed beverages, and a few studies have advised it is to be associated with cardiovascular disease, the leading reason behind poor health around the world.^[4]

Energy drinks contain a range of ingredients; however, several of the top-selling brands embrace high doses of alkaloid (caffeine) and also the organic compound

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taurine. Energy drink consumption by youngsters has raised issues, because of potential alkaloid (caffeine) toxicity. A further risk has been noted among college-aged customers who consume energy drinks seem to be at higher risk of overconsumption of alcohol when the two drinks are consumed altogether. There is a differential and combinatorial effect of alkaloid (caffeine) and taurine on the developing brain.^[5]

Hence, this survey study aims to know about the awareness of side effects due to caffeine intake among students.

MATERIALS AND METHODS

The questionnaire-based study was carried out online through a SurveyPlanet link. Individuality was ensured when the subjects filled up the survey. The participants who undertook the survey are undergraduate students of various medical and dental colleges. A total of 30 questions were asked to detect if the subjects were aware of the effects of caffeine on the body. We received the responses from 350 participants.

The questions were mainly targeted on the usage, dependency, and awareness of the side effects of caffeine and its products. In light of the reactions and answers from the subjects, factual examination was performed and the outcomes were arranged methodically and analysis was performed and the results were tabulated systematically.

RESULTS AND DISCUSSION

Among undergraduates of various medical and dental colleges, around 78.9% were found to admit that they consume caffeine, among which around 69.8% preferred to consume in the form of coffee or tea, 27.1% in the form of Coke or Pepsi, etc., and 3.1% as energy drinks such as Redbull and Monster Energy.

In the survey conducted, 91.7% were aware of the presence of caffeine in coffee or tea and 8.3% were not aware of it [Figure 2]. Similarly, 20.9% of the participants were not aware of the presence of caffeine in energy/cool drinks while the majority 79.1% did. Majority of the students, i.e. 46.6% preferred to consume caffeine in the evening after a tiring day while 37.4% preferred to consume it in the morning might be helpful for a jumpstart and few people 10.9% wanted to consume it in the afternoon, and very few 5.1% wanted to consume in the night [Figure 7].

Caffeine may advance the utilization of the caffeine-containing refreshments by the improvement of flavor inclinations where people relate unwittingly a flavor, prompting its high consumption.^[6] This is in accordance with the results of the survey cause the majority of the students 45.1% admitted to have 3+ drinks in a week while 21.4% admitted to drink one

kind of a drink per week and 22% admitted to drink two drinks a week and the only 11.4% admitted that they do not have caffeine drinks in a week [Figure 5].

There have been various reports that caffeine is an ergogenic help; ingestion of the caffeine and caffeine-containing products has been appeared to increment perseverance and the concentration and alert levels of the individual.^[7] This is also corresponding in relation to the survey because 56.9% of the subjects have admitted that caffeine helps them to concentrate and 64.2% have felt that they feel more energetic after consuming caffeine and surprisingly 50% have accounted that caffeine makes them more productive and 50% have admitted it does not [Figure 6].

Caffeine addiction also comes into play cause at the point when a man ingests caffeine or chocolate

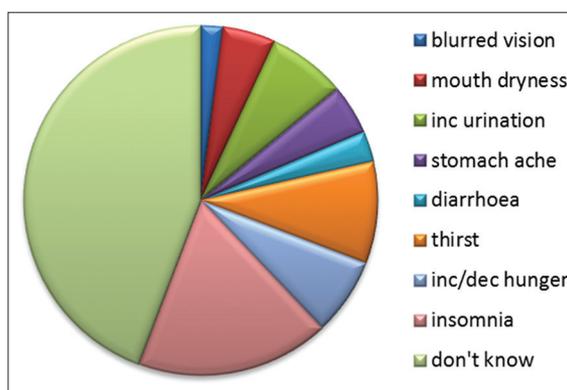


Figure 1: Side effects of consuming caffeine choose the ones you think/know so



Figure 2: Average scale on caffeinated beverage

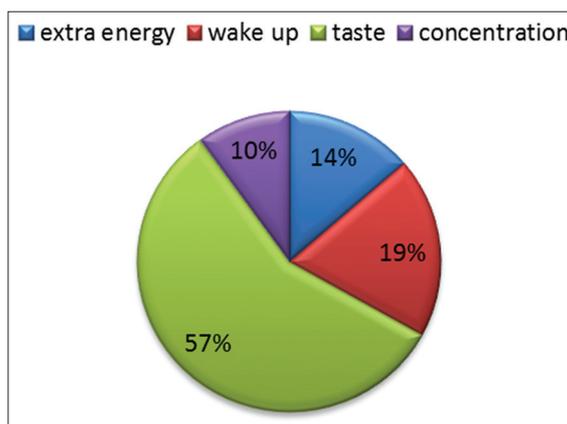


Figure 3: Why do you consume caffeinated products?

they contain a few hints of tryptophan and it goes about as an antecedent to serotonin. Serotonin is a neurotransmitter known for the temperament improving property and high serotonin levels are known for the euphoria impacts.^[8,9] However, 44.3% of the undergraduates think that their caffeine intake is a habitual one and only 9% believe they are addicted to caffeine and 15.4% don't know the reason why they are taking caffeine.

The main objective of the survey was to create awareness on the side effects of caffeine intake. Unnecessary and excess caffeine admissions have been related with tension, cerebral pains, sickness, and fretfulness.^[10,11] A few yet not all examinations have demonstrated an expanded danger of hypertension and cardiovascular disease. Moderate caffeine admission (under 400 mg/day for sound grown-ups) does not unfavorably influence cardiovascular well-being. Logical information does not bolster unfriendly

impacts of direct caffeine utilization beneath 300 mg/day on regenerative well-being or pregnancy results.^[12-16] The awareness and the unknowingness were almost the same 50.7% were aware of the side effects of caffeine consumption and 49.3% were not aware of the side effects of caffeine consumption. Of which 71.4% have not experienced any side effects due to intake or over intake of caffeine and 28% of the students have experienced the side effects.

The objective also included the caffeine dependency of the individual and the aware of addiction of caffeine and its withdrawal symptoms. 31.7% were not aware of the withdrawal symptoms and 68.3% were aware of the withdrawal symptoms. Side effects (i.e. headache, fatigue, and drowsiness) may be experienced when caffeine intake is stopped suddenly; however, symptoms are generally mild and temporary.^[11] Of these subjects, only 17.1% experienced withdrawal symptom, whereas 83.9% majority of the subjects did not experience any withdrawal symptoms [Figure 1].

However, the main motive of the students to drink caffeine is for the taste, 56.9% stated that they consume caffeinated products for the taste followed by 19.4% stated that they need caffeine to wake up, while 13.7%

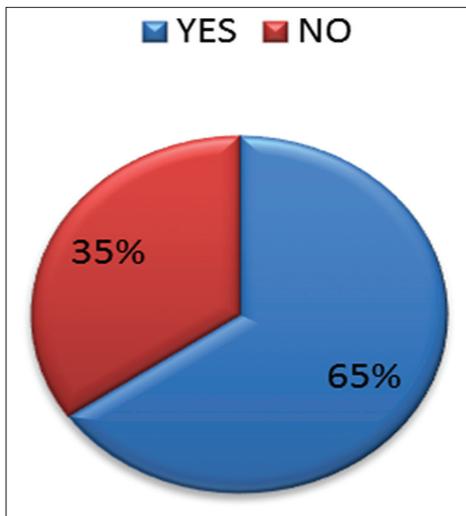


Figure 4: Will you limit your caffeine consumption after going through this questionnaire?

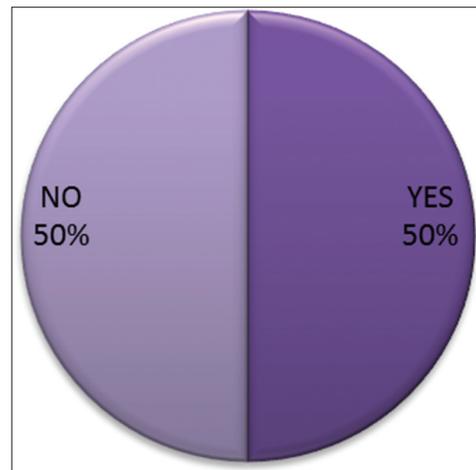


Figure 6: Do you feel caffeine makes you more productive?

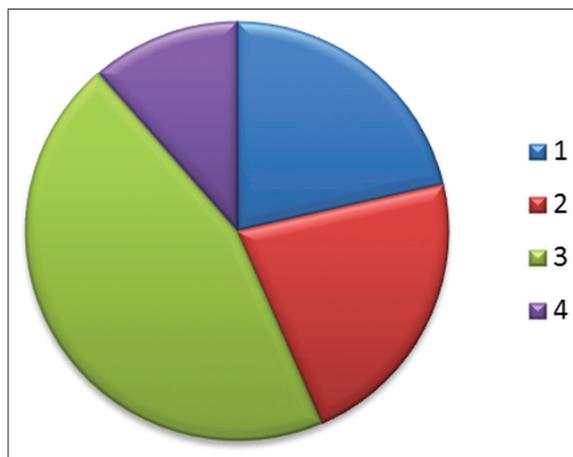


Figure 5: How many caffeinated drinks you drink in a week?

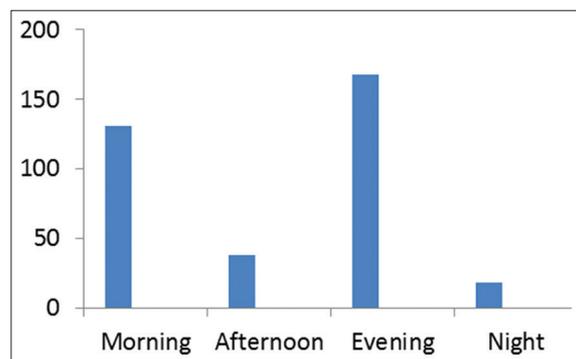


Figure 7: When do you generally consume caffeine?

stated that they consume caffeinated products for the extra energy and only 10% stated that they consume caffeine for concentration improvement [Figure 3].

One of the significant points is that majority of the people take caffeine in the morning 73.7% only when they need a jumpstart while 26.3% take caffeine every morning. This could prove that majority of the people take caffeine only when they badly need it and are not entirely depended on it. Furthermore, in the last question of the survey, 65.4% of the subjects stated that they will limit their caffeine consumption after going through this questionnaire and participating in this survey. Some of the subjects stated that they look at their caffeine consumption as an addiction; we do not know on what basis they consider themselves as an addict. However, a professional and personal diagnosis could only determine their level of addiction [Figure 4].

Caffeine being sold internationally, it is not been controlled and regulated through its addiction and the various disorders such as sleeplessness are prevalent, and hence, proper preventive measures are a prerequisite.^[17-20]

CONCLUSION

In the light of the results of the survey, it is evident that students consume caffeine only when they need it and only minority of the people are dependent on it. Caffeine has been demonstrated to increment sharpness as well as alertness level of the individual and has preference among the students. In the meantime, uncontrolled admission of caffeine may cause unfavorable impacts, for which there is a need to keep a check on the admission of caffeine. More research might be required to edify the general public on the consumption of caffeine and its antagonistic impacts for the well-being of the society.

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