

A Cross-Sectional Study on Prevalance of Caffeinated Energy Drinks Consumption among College Students in Chennai

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Abstract

Background: The consumption of energy drinks is on the rise amongst college-going students, mainly due to academic stress, lifestyle factors, and peer pressure. But high levels of consumption can be linked to health issues. To ascertain the frequency, patterns, benefits, and health consequences of energy drink usage amongst college students in Chennai.

Objective: To ascertain the frequency, patterns, benefits, and health consequences of energy drink usage amongst college students in Chennai.

Methods: The study was done using cross-sectional study design among 300 students at college level using semi-structured questionnaire. The analysis was carried out using Statistical Package for Social Sciences version 26. Data of categorical type were presented using frequency and percentages.

Results: Among the total 300 participants, 74.7% claimed to use energy drinks. Of these participants, about 53.3% felt that consumption of energy drinks increases energy and alertness. A significant association existed between energy drink intake and higher energy and alertness levels ($\chi^2 = 32.83$, $p < 0.001$). Also, there was a significant association between energy drinks intake and better athletic performance ($\chi^2 = 15.80$, $p < 0.001$). However, there was no significant association between energy drink intake and gastrointestinal symptoms ($p = 0.246$).

Conclusion: The use of energy drinks by college students is common. Although most people view the advantages offered by energy drinks, awareness about possible negative impacts is minimal. It is therefore important to educate consumers on proper usage.

Keywords: Energy Drinks, College Students, Caffeine, Prevalence, Cross-Sectional Study, Chennai.

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Introduction

Energy drinks are drinks formulated to increase energy levels, alertness, and mental concentration. Generally, these drinks consist of large amounts of caffeine together with various other substances like sugar, taurine, vitamins, and herbs. They are commonly regarded as supplements for increased body performance and decreased fatigue, therefore gaining popularity among youth, students, and working people.

The last few years have witnessed a significant rise in the use of energy drinks due to the ease of obtaining and heavy promotion of such drinks. Usually, these drinks help to stay active when studying, at work, or performing some other activities which require high mental activity. On the one hand, these drinks provide temporary advantages; on the other hand, they may result in negative impacts on human health such as

problems with sleep and heart rate. Nowadays, energy drinks are quite prevalent products, but at the same time, should be taken moderately. A number of factors contribute to the use of energy drinks by college students. College students often face academic pressures, extended study periods, and a lack of adequate sleep, compelling them to consume such drinks. Research studies indicate that the use of energy drinks is fairly widespread in this population; about 51% of college students are found to use energy drinks on a consistent basis within a given month. Students use energy drinks because they do not get adequate sleep, require more energy to perform tasks, or need increased focus for studying.

Besides academic issues, energy drinks may also be consumed socially or mixed with other drugs, and thus their consumption increases. Nevertheless, although there are some benefits from consuming these energy drinks, too much consumption of such drinks may cause adverse health implications. First, the high amount of caffeine found in these drinks has been linked to sleep problems, anxiety, headache, and fast heart rates. Secondly, there are studies that indicate that even consumption of these drinks occasionally may affect sleep patterns. Within the setting of Chennai, which is an urban metropolis with a considerable number of college-going students, it is possible that the use of energy drinks will be affected by lifestyle modifications within the urban areas, competitive pressure for academic success, and the availability of such drinks. The presence of many colleges and the fast pace of student life might result in higher

consumption of energy drinks. Nevertheless, little work has been done on the issue of energy drinks consumption among college-going students in Chennai.

Materials and Methods

This study involved college students located in Chennai, Tamil Nadu. Unwilling participants, those who refused to give consent for the study that denied permission to carry out the study were excluded from the study. The sample size of 300 participants was based on previous research results and statistical calculations. Simple random sampling was adopted to select the college students as participants. A standardized semi-structured questionnaire was used to establish the reasons for prevalence of energy drinks consumption among college students. The Institutional Ethics Committee of the institution approved the research protocol. Data was input using Excel while analysis was carried out using SPSS software. Statistical analysis methods utilized in this study included chi-square test, multi logistic regression, Pearson correlation, and descriptive statistics. P-value below 0.05 was statistically significant.

Therefore, studying energy drink consumption in this population is important to understand how frequently these beverages are used, the reasons behind their consumption, and their potential health impacts. Such insights can help in creating awareness among students and promoting healthier lifestyle choices.

Results

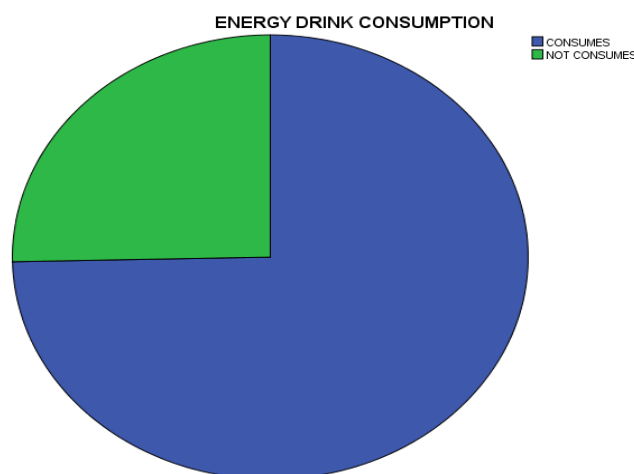


Figure 1:

Table 1: Socio demographic characteristics of the study participants (N=300)

Category	Consumes	Not Consumes	Total
AGE (Mean + SD)	20.6+2.69	22.6+5.55	43.2+8.24

Table 2:

Category	Sub Category	Consumes	Not Consumes	Total	P Value
Increases Alertness And Energy	Yes	141(47%)	19(6.3%)	160(53.3%)	<0.001
	No	83(27.7%)	57(19%)	140(46.7%)	
Enhances Focus And Concentration	Yes	111(37%)	15(5%)	126(42%)	<0.001
	No	113(37%)	61(20.3%)	174(58%)	
Make You Stay Awake At Night During Study Or Work Session	Yes	130(43.3%)	14(4.7%)	144(48%)	<0.001
	No	94(31.3%)	62(20.7%)	156(52%)	
Improve Athletic Performance	Yes	88(29.3%)	11(3.7%)	99(33%)	<0.001
	No	136(45.3%)	65(21.7%)	201(67%)	
Cause Palpitations	Yes	60(20%)	22(7.3%)	82(27.3%)	<0.134
	No	164(54.7%)	54(18%)	218(72.7%)	
Cause Headache	Yes	48(16%)	17(5.7%)	65(21.7%)	<0.30
	No	176(58.7%)	59(19.7%)	235(78.3%)	
Causes Nervousness And Anxiety	Yes	39(13%)	17(5.7%)	56(18.7%)	<0.91
	No	185(61.7%)	59(19.7%)	244(81.3%)	
Causes Gi Issues	Yes	75(25%)	20(6.7%)	95(31.7%)	<1.347
	No	149(49.7%)	56(18.7%)	205(68.3%)	
Causes Chest Pain Or Discomfort	Yes	44(14.7%)	17(5.7%)	61(20.3%)	<0.260
	No	180(60%)	59(19.7%)	239(79.7%)	
Causes Tremors Or Jitters	Yes	35(11.7%)	16(5.3%)	51(17%)	<1.185
	No	189(63%)	60(20%)	249(83%)	
Causes Dizziness Or Lightheadedness	Yes	39(13%)	12(4%)	51(17%)	<0.106
	No	185(61.7%)	64(21.3%)	249(83%)	
Weight Gain	Yes	69(23%)	15(5%)	84(28%)	<1.106
	No	155(51.7%)	61(20.3%)	216(72%)	
Reduced Appetite	Yes	64(21.3%)	20(6.7%)	84(28%)	<0.109
	No	160(53.3%)	56(18.7%)	216(72%)	
Lack Of Social Interest	Yes	46(15.3%)	11(3.7%)	57(19%)	<0.245
	No	178(59.3%)	65(21.7%)	243(81%)	

Discussion

The present cross-sectional study assessed the prevalence and patterns of caffeinated energy drink consumption among college students in Chennai. The findings demonstrate that energy drink consumption is increasingly common among young adults, reflecting changing lifestyle behaviours, academic stress, social influences, and aggressive marketing strategies targeting adolescents and college students.

In this study, a considerable proportion of students reported consuming caffeinated energy drinks either regularly or occasionally. Similar findings have been reported in studies conducted among university students worldwide, where prevalence rates ranged from 30% to 70%. The increasing popularity of energy drinks among college students may be attributed to their perceived benefits such as improved concentration, enhanced physical performance, reduced fatigue, and prolonged wakefulness during academic activities and examinations. Energy drinks are used commonly by most college students in their daily activities. For instance, 74.7% of the participants in this study consume these beverages regularly indicating that they have been widely embraced by students in

colleges. Most students (53.3%) agreed that energy drinks help in increasing their energy and alertness levels.

There is a significant association between the consumption of energy drinks and perceived alertness ($\chi^2 = 32.83$, $p < 0.001$) indicating that energy drinks are mostly used by the students to enhance their mental capabilities. Furthermore, there is a significant association between the consumption of energy drinks and the perceived performance in the athletics activities ($\chi^2 = 15.80$, $p < 0.001$). This highlights the role of energy drinks in the sports field as well as academics. On the other hand, energy drinks and perceived stomach problems were not significantly associated ($\chi^2 = 1.347$, $p = 0.246$) despite the fact that 31.7% of the respondents reported that they had experienced stomach problems from using these beverages. The present study has certain limitations. As the study was cross-sectional in nature, causal relationships between energy drink consumption and associated factors could not be established. The data were self-reported by participants and therefore subject to recall bias and reporting bias. In addition, the study population was limited to selected colleges in Chennai, which may affect the generalizability of the findings to all college students in India.

Despite these limitations, the study provides important baseline information regarding the prevalence and behavioural patterns of caffeinated energy drink consumption among college students. The findings emphasize the need for educational interventions, awareness programs, and health promotion activities within educational institutions. Counselling regarding healthy sleep habits, stress management, and safe caffeine intake should be incorporated into student health programs. Regulatory policies regarding labelling, caffeine content disclosure, and advertising practices may also help reduce excessive consumption among young adults. From the discussion above, it is apparent that most students tend to consume energy drinks due to the numerous benefits associated with them even at the expense of adverse effects on their health.

Conclusion

The present cross-sectional study revealed that the consumption of caffeinated energy drinks is highly prevalent among college students in Chennai. Energy drinks were commonly consumed for purposes such as enhancing alertness, improving concentration, reducing fatigue, and coping with academic stress. Male students and those with unhealthy lifestyle practices demonstrated comparatively higher consumption patterns. Strong association with perceived benefits (alertness & performance), No significant association with GI issues. The findings of this study highlight the need for increased health education and awareness programs targeting college students regarding the safe consumption of caffeinated beverages. Educational institutions should promote healthy lifestyle practices, stress management strategies, and adequate sleep hygiene to reduce dependence on energy drinks.

Recommendations

- Awareness campaigns in colleges

- Education on safe caffeine limits
- Regulation of marketing targeted at youth
- Further longitudinal studies

Limitations

- Cross-sectional design (no causality)
- Self-reported data (bias possible)
- Convenience sampling (limited generalizability)

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