ORIGINAL ARTICLE

To Study the Quality and Patterns of Sleep in Relation to Consumption of Energy Drinks among medical students ofAllamaIqbal Medical College, Lahore

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ABSTRACT

Background: Energy Drinks is a type of beverage which contains stimulant drugs and marketed as mental and physical stimulator.
Aim: To evaluate the impact of energy drinks on quality and patterns of sleep among medical student.
Methods: Cross sectional study was conducted over 2 months. Method of sampling was Non probability / purposive sampling. An inclusion criterion was medical students for all the years of MBBS at AIMC. Data was collected to see the effects of energy drink on sleep patterns among college students who were using energy drinks and then analyzed on SPSS version 21.
Results: Among the students 150 selected for study, 32.7% were using energy drinks in which 43.12% had no difficulty in falling asleep and 56.88% had difficulty in sleeping. 32.65% have decrease duration, 34.68% have increased sleep latency, 18.36% have intermittent wakeups and 14.28% show multiple symptoms.
Conclusion: It is concluded that consumption of energy drinks is high (32.7%) among medical students of students but there isno significant sleep disturbances and sleep disorders were observed.
Keywords: Energy Drinks; Sleep Habits; Stimulant; Sleep Pattern.

INTRODUCTION

Sleep is very important component of a person's life, and its potential effects should not be overlooked.[1,2]College students are well known for sleep deprivation and consequent use of brain stimulator i.e. energy drinks. Energy drink, a widely used stimulant, can promote general wakefulness[3].Caffeine and Taurine were found to be the primary constituent responsible for these effects.[3] Although there is no human requirement for caffeine, even low doses of caffeine improve cognitive performance and mood. However, caffeine has been found to have detrimental health consequences too[4].

In an article to determine whether energy drink provide the consumer and extra burst of energy it was found that energy drinks, as compared to placebo, had energizing effects among 18 to 55 year old participants, with effects being strongest 30 to 60 minutes after consumption and sustained at least 90 minutes.[5] It was found that caffeine but not taurine in energy drinks promote diuresis and natriurisis. Further, acute consumption reduces insulin sensitivity and increases mean arterial blood pressure.[3-6]

The purpose of this study is to estimate the prevalence of sleepiness and circadian preferences. And to examine the extent to which Energy Drink consumption is associated with sleepiness among college students and which sleep disturbances appear in the energy drink consumers.[7] Moderate dose of taurine and caffeine in energy drinks at bed time, 3 hours prior to bed time or 6 hours prior to bed time each have significant effect on sleep disturbance.[8] Insufficient sleep and irregular sleep-wake patterns have been observed at high rates on college campuses, sleep problems have been associated with lower academic performance, impaired social relationship.[9] Available evidence suggests that, when consumed in high amounts or mixed with energy drinks may contribute to increased risks of arrhythmia, elevated BP and psychological symptoms.[4] There exists a long standing belief among students that all-nighters and mega-taurine consumption before tests gives them an edge when compared with students that sleep 8 hours.[2] Energy drink has its negative side effects like restlessness, anxiety, difficulty in sleeping, irregular heartbeats and excess amounts of acids in stomach lead to abdominal pain and nausea.

METHODOLOGY

The cross sectional study was conducted in the AllamaIqbal Medical College during a period two months on MBBS students. The sampling technique used was Non probability / purposive sampling. All MBBS students of AllamaIqbal Medical College were included in the study.

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Data collection and analysis: .Data was collected to see the effects of energy drinks on sleep patterns among college students who were using energy drinks and then analyzed on SPSS version 21.

RESULTS

In our study, 150 students were included, Demographic data is shown in table, I, It shows that among 150 students, mean age + standard deviation was 21.4+ 1.68 years and 22% were male and 78% were female students. Mean sleep duration per day duration per day during week days is 7.45 hours and at weekends was 10.68 hours. 32.7% students have been taking energy drinks and 67.3% were not using them.

Table I: Demographic Variables of the sampled Population

Mean + S.D.	21.40±1.68
Gender	
Male	33(22%)
Female	117(78%)
Class	
First year	26 (17.3%)-
Second year	31(20.7%)
Third year	9(6%)
Fourth year	69(46%)
Final year	15(10%)
Sleep duration	
Weekdays (Mean + S.D.	7.45 ± 2.025
Weekends (Mean + S.D.)	10.68 ± 2.417
Intake	
Yes	49(32.7%)
No	101(67.3%)

Table II: Cross Tabulation between effect modifiers and Energy drink Intake

Energy Drink Intake			
	Yes	**No**	**Chi-Square**
First Year	19.2%	80.8%	
Second Year	54.86%	45.14%	
Third Year	33.3%	66.7%	0.00
Fourth Year	15.94%	84.06%	
Fifth Year	86.6%	13.4%	
Difficulty	55.11%	44.89%	0.844
Disturbance			
Decrease duration	32.65%	-	
Sleep Latency	34.69%	-	
Wakeups	18.36%	-	
Multiple	14.30%	-	
Gender			
Male	66.67%	33.33%	0.00
Female	23.07%	76.93%	0.00

The sleep pattern was cross tabulated in Table II. It shows the usage of energy drink among different classes. Final year has highest percentage of energy drink consumer i.e., 86.6% among users, 44.89% has no difficulty in falling asleep and 55.11% had difficulty in sleeping. The disturbance in sleep pattern related to intake 32.65% have decrease duration, 34.69% have increased sleep latency, 18.36% have intermittent wakeups and 14.30% show multiple symptoms. Among users 66.67% of males take energy drink while 23.07% of females take energy drinks.

DISCUSSION

In our study, 32.7% students were drinking energy and 67.3% were not using them. In the reference study,19.4% students were not using energy drink and 80.6% where using. Among users in our study 44.89% had no difficulty in falling asleep and 55.11% had difficulty in sleeping while in the reference study 52.7% students were classified as having poor sleep quality and 47.3% were having no sleep problems. In our study, 32.65% have decrease duration of sleep, 34.69% have increased sleep latency, 18.36% have intermittent wakeups and 14.30% show multiple symptoms.

The difference may be secondary to demographic difference. In our study, 22% were males and 78% female. In the same study conducted in Ethiopia, males were 77.6% and female were 22.4%. In our study, mean age was 21.4 years but in the above mentioned article mean age was 21.6 years in a sample consisting of 2410 students[10].

To the best of our knowledge, this is the first study to determine sleep quality and energy drink consumption among AIMC Pakistan medical college students. There are certain limitations of our study. First, is the cross-sectional design of our study, second, utilizing a self-administered questionnaire that may have imparted certain errors in reporting,third, heterogeneous nature of sample of medical students,fourth, lack of information on frequency and dose of energy drink consumption in the present study and finally, a well-established nonmedicaltherapy for sleep difficulties is regular exercise[11-20].This may mask actual study results.

This is an important contribution to research focused on medical student's health. Medical College students in Pakistan, and possibly other parts of Asia, should be made aware of the impact of energy drink consumption on sleep quality and patterns. Improved sleep quality is advantageous for medical students in their daily activities, academic performance, and also improves their health status[21-25]. A technology-filled and advanced society may be the reason many medical students overlook the significance of adequate sleep.

CONCLUSION

It is concluded that consumption of energy drinks is high (32.7%) among medical students of AllamaIqbalMedical College but there is no significant sleep disturbances and sleep disorders were observed.

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Conflict of Interest: We have not conflict of interest that I should disclose.

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