ORIGINAL ARTICLE

PATTERNS OF ENERGY DRINK CONSUMPTION AMONG UNDERGRADUATE MEDICAL STUDENTS

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ABSTRACT

BACKGROUND: The trend of energy drink consumption has grown rapidly in recent years. Prevalence of use of energy drinks among adolescent and young adults has continued to increase and young adults aged 18–34 are a major target group. Objective of this study was to assess the reasons for consumptions of energy drinks by medical students and adverse effects experienced by them.

METHODS: A cross sectional study was conducted among the undergraduate medical students of Rehman Medical College Peshawar, from 1st March to July 2017. A sample size of 200 students was selected by simple random sampling. A structured questionnaire was used to record the information about demographic characteristics of medical students, reasons and patterns of energy drinks consumption in last one month and associated side effects of using energy drinks.

RESULT: Out of 200 participants, 134 (67%) respondents reported 'ever consuming an energy drink', whereas 100 participants (50%) reported consuming energy drink currently. Staying awake was the most common reason to consume energy drinks, as reported by 40% of medical students, followed by energy booster 37%, driving a car for long time 35%, while study 24%, sports 20% and 17% to treat a hangover. Regarding adverse effects of energy drinks, heart palpitation were experienced by 13% medical students, 11% reported insomnia and increased urination, 10% reported ever having headache and 9 % anxiety from consuming energy drinks.

CONCLUSION: Energy drinks consumption was prevalent among undergraduate medical students for a variety of reasons. Moreover adverse effects from consuming energy drinks were somewhat common. Health interventions program regarding the awareness of energy drinks' ingredients and careful use among undergraduate medical students are recommended.

KEYWORDS: Energy drinks, Medical students, Health behavior.

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INTRODUCTION

Trend of energy drink consumption has grown rapidly in recent years [1], with global consumption nearly doubling between 2006 and 2012 [2]. Prevalence of energy drinks use among adolescent and young adults has continued to increase [1,3], and young adults aged 18–34 are a major target group[4]. Energy drinks are consumed by younger population for different reasons particularly for partying; driving and studying for energy boost[5], enhanced mood and alertness. They are popular among the medical students also for enhancing memory, thinking and cognition and to stay awake during the exams. However, there is concern about the potentially harmful effects of energy drink consumption on users' health, especially young population, due to the high content of caffeine and herbal extracts such as ginseng, ginkgo biloba, guarana, and, B vitamins, amino acids (taurine), amino acid derivatives (carnitine), and sugar derivatives, including glucurona lactone and ribose[1,3].

An energy drink is one that contains stimulant drugs, chiefly caffeine, which is marketed as mental and physical stimulator. Energy drinks, including Red Bull, Rock Star, Amp, Rip It, Monster, Full Throttle, and Cocaine, are designed to give the consumer a booster of energy provided by the combination of stimulants and "energy boosters". Prevalence of energy drinks use among adolescent and young adults to be 30-50% [6] Coffee, tea and other naturally caffeinated beverages are usually not considered as energy drinks. Soft drinks such as cola, may contain caffeine, but are not included in energy drinks.

Smit and colleagues has found that energy drinks, as compared to placebo, had energizing effects among 18 to 55 year old respondents, with effects being strongest 30 to 60 minutes after consumption and sustained at least 90 minutes [7],caffeine was found to be the main content

responsible for these effects[8].

High caffeine consumption is also associated with chronic headaches [9]. According to a study, energy drinks have shown its great effect on cardiovascular system, central nervous system and renal system [10].

According to a research in Sokoto University Nigeria, energy drinks have unwanted affects on the body such insomnia, tremors, agitation, nausea, headache, hypertension, decrease in insulin sensitivity, and weight gain. Effects are prominent among the children [11].

In Pakistan limited data is available regarding energy drink consumption. A cross sectional study conducted by Asma Usman, Swaleha Tariq et al. on the consumption of energy drink among the medical students of private sector university of Karachi in September 2015 revealed that 52% were consuming energy drink and Red bull consumption was most common. 15.4 % revealed the main reason for consumption to be the energy replacement, 14.6% for studying in exams 12.

In Pakistan no or very little attention has been given to energy drinks and very little data is available regarding the prevalence, awareness and side effects of energy drinks consumption. Therefore this study was designed to find out the prevalence of energy drinks consumption patterns among the medical students, the potential hazards thereof and reason for consumption.

Objective of this study was to assess the reasons for consumptions of energy drinks by medical students and adverse effects experienced by them.

MATERIAL & METHODS

A cross sectional study was conducted among the undergraduate medical students of Rehman Medical College Peshawar, from 1st March to July 2017. A sample size of 200 students was selected by simple random sampling. Data was collected by using structured questionnaire. Questionnaire included question regarding Ever consumption by asking, "Have you ever tried an energy drink, even a few sips? Those who had ever consumed energy drinks were asked additional questions about situations in which medical students use energy drinks, frequency patterns such as average number of energy drinks consumed for each situation, the average number of times in last one month and associated side effects of using energy drinks. Further socio-demographic characteristics of the respondents were also included in the questionnaire. Informed consent was obtained from each respondent. Data was analyzed in SPSS version 20.0. Descriptive data was analyzed and the results were presented as frequencies and percentages.

RESULTS

200 students of different years of MBBS from Rehman Medical College Peshawar were included in the study such as 49 (24.5%) from 1st year, 41 (20.5%) from 2nd year, 46 (23%) from 3rdyear 48 (24%) from 4th year and only 16 (8%) from final year. Respondents were between ages of 18–25 years with a mean age of 21.43 ± 1.51 years. Out of 200 participants, 100(50%) reported current energy drink use. Staying awake was the most common reason to consume energy drinks, followed by energy booster. Rest of them communicated reasons like driving for long times, studying, playing sports and to avoid hangover.

FIG 1: REASONS FOR USING ENERGY DRINKS (n=100)

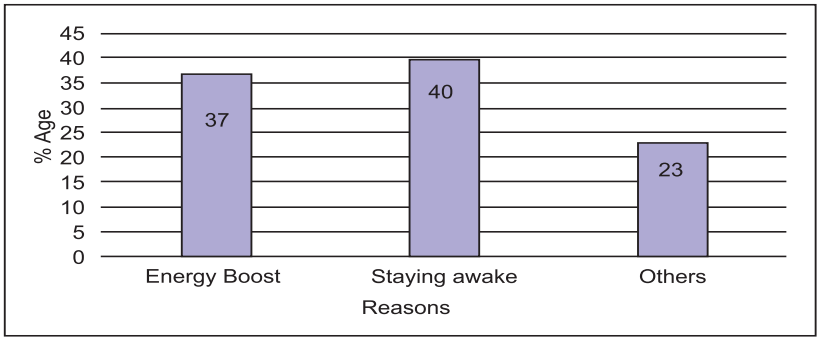
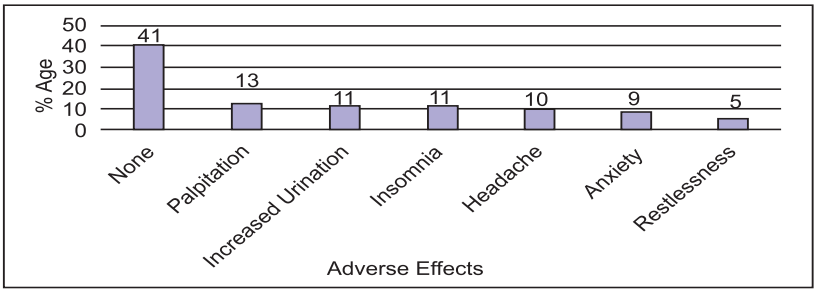


FIG 2: ADVERSE EFFECTS EXPERIENCED BY USERS (n=100)



DISCUSSION

Energy drinks are trendier in young adult population. They are designed to enhance alertness or provide short term memory boost and are easily available at college campuses and recreational hot spots.

Our study results show a greater prevalence of energy drinks consumption among males. Similar results were reported from previous studies conducted by Azaba et al, Reid et al and Gupta et al [13,14,15]. Reason behind the findings can be that most men are competitive and risk-taking behaviors as compared to females. 134 (67%) respondents of our study reported 'ever consuming an energy drink' and 100(50%) medical students have consumed energy drinks in the past one month. Our study results are consistent with the results of previous studies conducted by Asma Usman et al and Seba M gheiz et al [12,16]. Similarly a cross

sectional study conducted by Piotre Cencek et-al, at Lublin University revealed that among 131 participants 61.83% were the users[17].

The purpose of our study was to identify energy drink consumption pattern and adverse effects associated with consumption of energy drink among medical students.

Our study results showed that energy drink consumption was common practice among medical students, particularly if they wanted to stay awake or if they need more energy i.e. 40% and 37% respectively. These results were consistent with the previous study conducted by Brenda, M Malinauskas, Vector, G Abbey et-all in a University located in Central Atlantic region [18]. Another study by Piotre Cencek et-all also revealed that most of the medical students of Lublin University used energy drinks for staying awake [17]. Our study result indicated that 40% of the users observed no side effects after the consumption of energy drinks. Adverse effects such as heart palpitation were experienced by 13% medical students, insomnia 11% and increased urination 11%, 10% students reported ever having headache and 9 % anxiety from consuming energy drinks. These results are similar to the finding of a study conducted *by* Jimoh et al. [11]

In our study the sample was taken only from one medical college of Khyber Pakthunkhawa (KPK), might not represent the true situation in all the medical colleges of the province. Recall bias of the self-administrated questionnaire is also possible.

We suggest that future studies recruit a representative sample and develop more comprehensive measurements.

CONCLUSIONS

Using energy drinks was common among undergraduate medical students for multiple reasons. Furthermore adverse effects associated with consumption of energy drinks were somewhat common. Health interventions program regarding the awareness of energy drinks' ingredients and careful use among undergraduate medical students are recommended.

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