PERCEPTION AND PRACTICE OF ENERGY DRINKS CONSUMPTION BY MEDICAL STUDENTS OF WAH MEDICAL COLLEGE

Shezadi Sabah Imran, Khola Waheed Khan, Imrana Maqsood*, Muqadsa Mehmood, Tallisa Tallae

Wah Medical College Wah Pakistan, *Fazaia Medical College, Air University Islamabad Pakistan

ABSTRACT

Objectives: To determine the frequency of use of energy drinks, to assess gender, residence and year of education difference with the usage of energy drinks and the perception of students about benefits of energy drinks consumption.

Study Design: Cross sectional study.

Place and Duration of Study: Wah Medical College (WMC), from Jan to Jun 2016.

Material and Methods: The 369 students of WMC from all years of MBBS course were selected through convenient sampling technique. After obtaining verbal consent the data were collected using a self administered closed ended questionnaire and analyzed by using SPSS version 19.

Results: The frequency of consumption of energy drinks among students of WMC was 34%. Red bull was the most common (48%) brand used by them. Significant differences were found between usage of energy drinks with gender (<0.001), but insignificant difference with residence (0.06) and year of education (0.37). Out of 369 students, 310 (81.6%) students thought that energy drinks help them to stay awake longer and 73-75% were of the opinion that its use improved their concentration and mental performance.

Conclusion: It was concluded that the consumption of energy drinks was high among medical students and most of them were male students. The most well-liked energy drink was Red bull and they believed that energy drinks helped them to stay awake longer, reduced tiredness and improve mental performance.

Keywords: Benefits, Energy drinks, Medical students, Perception.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Energy drinks are a group of caffeinated beverages containing added ingredients like taurine, vitamins, herbs and simple sugars[1-3]. Caffeine is the main active ingredient in energy drinks and different brands of these drinks contain caffeine ranging from 80-150 mg per 8oz serving[4]. There is rising popularity of consumption of energy drinks and its marketing is targeted towards youth. In European countries the prevalence of consumption of energy drinks is 68% among people aged 10-18 years[3].

The most common reasons of consuming energy drinks are gaining extra energy, promoting attentiveness, counteracting sleepiness, increasing alertness while studying and driving, also for cognitive and mood enhancement[4,5].

Initially the consumption of energy drinks was more among athletes only but now the trend has been changed and usually adolescents are taking it[6] to improve cognitive functions such as memory and concentration and reducing weariness[7]. Several studies have revealed that consumption of energy drinks causes many adverse effects like nervousness, irritability, sleeplessness, increased urination, arrhythmias, stomach upset and behaviour disorders[1,3-5]. There is very little information available regarding awareness of energy drinks and its usage by medical students of Pakistan. This study was planned with the purpose of determining the frequency of consumption of energy drinks among male and female students of Wah Medical College and assessing awareness regarding its benefits. The information regarding its usage will help us to decide whether medical students need

Correspondence: Dr Shezadi Sabah Imran, Department of Community Medicine, Wah Medical College, Wah Cantt, Pakistan
Email: sabah_imran00@yahoo.com
Received: 18 May 2017; revised received: 12 Jun 2018; accepted: 27 Jul 2017

health education sessions and other alternatives for getting the same benefits.

PATIENTS AND METHODS

A cross sectional study was conducted on 369 students aged 18-24 years, of Wah Medical College. The sample was taken by using convenient sampling technique and the sample size was calculated by the WHO formula i.e $n=z^2pq/d^2$ with 95% confidence and estimated prevalence of 32.6%[8].

It was carried out from January 2016 to June 2016. Initially verbal consent was obtained from all students as a part of ethical practice and then data were collected using a self administered closed ended questionnaire.

Variables used in the questionnaire were gender, residence, year of education, usage of energy drinks, type of drinks and knowledge about benefits of energy drinks. The data was analyzed using the SPSS version 19 and Microsoft Excel. Mean and Standard deviation were calculated for age of students while frequencies and percentages were computed for categorical variables. Chi square test was applied to determine difference of gender, residence and preclinical or clinical students with the usage of energy drinks. The *p*-value of <0.05 was considered as significant.

RESULTS

The total number of students who responded were 369. Their mean age was 22.05 ± 1.77 years, male students were 151 (41%) and female were 218 (59%). Of them, 149 (40.4%) students were residing with their families while 220 (59.6%) were hostellites.

Out of total students, 127 (34%) were energy drinks users and its usage among male and female students is shown in figure.

Out of 127 students who consumed energy drinks, 24 (19%) were preclinical students (1st and 2nd years) 103 (81%) were clinical students (3rd, 4th and final year students).

Regarding the brand, 61 (48%), 10 (7.8%), 41 (32.2%), 15 (12%) students took red bull, monster, sting and any other energy drink respectively.

Significant difference was found between usage of energy drinks with gender but insignificant difference with residence and year of education as shown in table-I, II & III. The perception of students about the benefits of using energy drinks is presented in table-IV.

DISCUSSION

There is increasing trend of energy drinks usage among adolescents due to advertisement of its benefits and easy availability. To determine this inclination among medical students the research was conducted on medical students of Wah Medical College. It focused on the use and perceptions of medical students towards energy drinks. The study found that 34% of students of Wah Medical College consumed energy drinks. The result was compatible with other studies conducted by Seyhan *et al*[8], Galluci *et al*[9] and Michele *et al*[10] while contradictory with other researches carried out among Polish adolescents[11], college students of Saudi Arabia[7] and a private university of Karachi[12] where the consumption of energy drinks was more. The increase consumption of energy drinks by medical students may be due to a lot of pressure

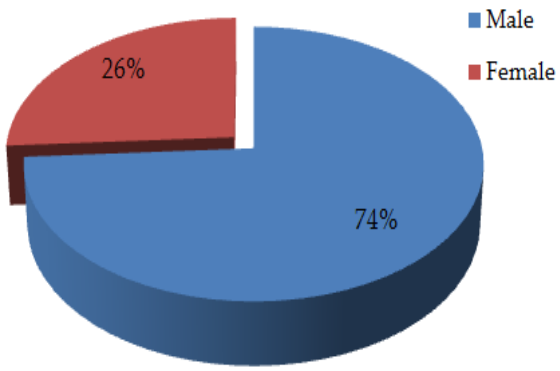

Figure: Usage of energy drinks among male and female students.

to perform well in academics and limited time to complete the vast curriculum.

Although in our setup its usage was found to be low as compared to other institutes but it is an alarming situation and there is a need to adopt certain strategies to halt its use. Among them, male students were reported higher intake of energy drinks and this finding was consistent with the literature[13-15]. The gender difference might be attributed to more involvement of boys in sports, their risk taking behaviour. Additionally they are more under peer pressure and have more curiosity for a new thing.

Red bull was the most common brand taken by the students, supported by Sulaiman *et al*[7] and Usman *et al*[12] and the consumption of energy drinks was higher among hostellites as compared to the day scholars which was supported by a study conducted by Seyhan *et al*[8] which revealed that the students who were not living with their families were used to take more energy drinks. This difference might be due to lack of attention and care faced by the students who lived without their families.

The students of first and second years showed slightly higher intake of energy drinks than the students of third, fourth and final years, probably they were more under pressure because of academics and new environment. The results were contradictory to the study conducted by Cabezas-Bou *et al* on Hispanic students which showed graduates were more likely to take energy drinks as compared to under graduates[16].

Table-I: Usage of energy drinks and gender of students.

Gender	Energy drinks usage				Total	*p*-value
	Yes		No			
Male	94	(62.3%)	57	(37.7%)	151	<0.001
Female	33	(15.1%)	185	(84.9%)	218	
	127		242		369	

Table-II: Usage of energy drinks among hostellites and day scholars.

Residence of students	Energy drinks usage				Total	*p*-value
	Yes		No			
Hostellites	84	(38.1%)	136	(61.9%)	220	0.06
Day scholar	43	(28.9%)	106	(71.1%)	149	
	127		242		369	

Table-III: Usage of energy drinks among preclinical and clinical students.

Category of students	Energy drinks usage				Total	*p*-value
	Yes		No			
Preclinical	24	(39.3%)	37	(60.7%)	61	0.375
Clinical	103	(33.4%)	205	(66.5%)	308	
	127		242		369	

Table-IV: Perception of students about the benefits of energy drinks.

S. No.	Benefits	Frequency	Percentage (%)
1	Stay awake longer	301	81.6
2	Mental performance improves	281	76.2
3	Concentration improves	271	73.4
4	Tiredness reduces	265	71.8
5	Exercise capacity improves	199	53.9
6	Memory improves	154	41.7
7	Mood improves	214	58.0
8	Performance in exam increases	188	50.9

Regarding its benefits 82% students believed that with the usage of energy drinks they can stay awake longer. About two third students thought that energy drinks were very useful for improvement of concentration and mental performance. Additionally reduction of tiredness was also ascribed to its usage. The results were compatible with the studies conducted by Aslam *et al*[5] and Costa *et al*[17]. But this is only the perception of students and it is recommended to conduct studies with better designs to confirm the effects of energy drinks. Moreover the students should be educated to have some alternatives to get desired benefits and it is also recommended that the college administration should organized health education sessions for increasing awareness among them.

There are some limitations of study. Some results might be significant and the external validity might be raised by adopting the probability sampling technique.

CONCLUSION

It was concluded that the consumption of energy drinks was high among medical students and most of them were male students. Red bull was the most common energy drink taken by them and the students believed that energy drinks were helped them to stay awake longer, reduced tiredness and improve mental performance.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by andy authors.

REFERENCES

1. Kammerer M, Jaramillo JA, García A, Calderín JC, Valbuena LH. Effects of energy drink major bioactive compounds on the performance of young adults in fitness and cognitive tests: A randomized controlled trial. J Int Soc Sports Nutr 2014; 11(1): 44.
2. Breda JJ, Whiting SH, Encarnação R, Norberg S, Jones R, Reinap M et al. Energy drink consumption in Europe: A review of the risks, adverse health effects, and policy options to respond. Front Public Health 2014; 2: 134.
3. Visram S, Cheetham M, Riby DM, Crossley SJ, Lake AA . Consumption of energy drinks by children and young people: A rapid review examining evidence of physical effects and consumer attitudes. BMJ Open 2016; 6(10): e010380.
4. Alsunni AA. Energy drink consumption: beneficial and adverse health effects. Int J Health Sci 2015; 9(4): 468-74.
5. Aslam HM, Mughal A, Edhi MM, Saleem S, Rao MH, Aftab A et al. Assessment of pattern for consumption and awareness regarding energy drinks among medical students. Arch Public Health 2013; 71(1): 31.
6. Musaiger A, Zagzoog N. Knowledge, attitudes and practices toward energy drinks among adolescents in Saudi Arabia. Glob J Health Sci 2013; 6(2): 42-6.
7. Aljaloud SO. Use of energy drinks among college students in Saudi Arabia. Am J Sports Med 2016; 4(3): 49-54.
8. Hidiroglu S, Tanriover O, Unaldi S, Sulun S, Karavus M. A survey of energy drink consumption among medical students. J Pak Med Assoc 2013; 63(7): 842-5.
9. Gallucci AR, Martin RJ, Morgan GB. The consumption of energy drinks among a sample of college students and college student athletes. J Community Health 2016; 41(1): 109-18.
10. Pettit ML, Debrarr KA. Perceived stress, energy drink consumption, and academic performance among college students. J Am Coll Health 2011; 59(5): 335-41.
11. Nowak D, Jasionowski A. Analysis of consumption of caffeinated energy drinks among polish adolescents. Int J Environ Res Public Health 2015; 12(7): 7910-21.
12. Usman A, Bhombal ST, Jawaid A, Zaki S. Energy drinks consumption practices among medical students of a private sector university of Karachi, Pakistan. J Pak Med Assoc 2015; 65(9): 1005-7.
13. Casuccio A, Bonanno V, Catalano R, Cracchiolo M, Giugno S, Sciuto V et al. Knowledge, attitudes, and practices on energy drink consumption and side effects in a cohort of medical students. J Addict Dis 2015; 34(4): 274-83.
14. Reid JL, Hammond D, McCrory C, Dubin JA, Leatherdale ST. Use of caffeinated energy drinks among secondary school students in Ontario: Prevalence and correlates of using energy drinks and mixing with alcohol. Can J Public Health 2015; 106(3): e101-8.
15. Alsunni AA, Badar A. Energy drinks consumption pattern, perceived benefits and associated adverse effects amongststudents of University of Dammam, Saudi Arabia. J Ayub Med Coll Abbottabad 2011; 23(3): 3-9.
16. Cabezas-Bou E, De León-Arbucias J, Matos-Vergara N, Álvarez-Bagnarol Y, Ortega-Guzmán J, Narváez-Pérez et al. A survey of energy drink consumption patterns among college students at a mostly Hispanic university. J Caffeine Res 2016; 6(4): 154-62.
17. Costa BM, Hayley A, Miller P. Young adolescents' perceptions, patterns, and contexts of energy drink use. A focus group study. Appetite 2014; 80: 183-9.