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Research Article

**TRENDS OF ENERGY DRINKS, SOFT DRINKS AND BETEL
NUTS CONSUMPTION IN MEDICAL UNIVERSITY
STUDENTS: A USE OR AN ABUSE?****Nasreen Qazi¹, Sadat Memon², Sarah Ashraf³, Ashique Ali Arain⁴, Imtiaz Ahmed⁵,
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Article Received: September 2019 **Accepted:** October 2019 **Published:** November 2019**Abstract:**

Energy drinks, Soft Drinks consumption and Betel Nut chewing practices in students is a serious problem in developing countries. The aim of the present study was to determine the prevalence of energy drinks, soft drinks and betel nut consumption and their adverse effects in students of medical university. A questionnaire based cross sectional study was conducted on 316 students baes on questionnaire. We found 221 (69.94%) students consume energy drinks. Majority of them use energy drinks twice a week and most common brand is Sting. Students said that their energy level increased after taking energy drinks. 280 (88.6%) students consume soft drinks. Majority of them consume soft drink more than twice a week and were aware of the side effects. Out of 316 students, 136(43%) students chew betel nuts. Many of them consume betel nuts twice daily.

Conclusion: *The consumption of energy drinks, soft drinks and chewing betel nuts is a serious health problem and it is necessary to give awareness about the adverse effects of energy drinks, soft drinks and betel nuts to students.*

Keywords: *Energy Drinks, Betel Nuts, Soft Drinks, Medical Students, Adverse Effects, Addiction.*

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INTRODUCTION:

Energy drinks and soft drinks are the drinks which contains caffeine, taurine and glucose. It is considered that they increase the mental and physical energy levels. Energy drinks are different from sport drinks, sport drinks maintains the electrolytes balance and provide hydration during strenuous physical activity [1]. There are few concerns about safety profile of the usage of energy drinks and also they state that there are behavioral and physiological advantages in consumption of energy drinks [2]. Because of the increased concentration of caffeine in energy drinks, there are claims of certain side effects of these energy drinks on different body systems [3]. Most of the energy drinks contains high amount of glucose, taurine, riboflavin, pyridoxine, nicotinamide, vitamins B and many other stimulating herbal contents like guarana, ginseng and gingo biloba in addition of caffeine [4]. Many energy drinks have approximately 80mg of caffeine which is equal to the amount of caffeine in 8 ounce of coffee cup [5]. Daily intake of 400mg caffeine is linked with many side effects like increase in anxiety, agitation, inability to sleep, ill temper, increased sweating, dehydration, nervousness, raised blood pressure and tachycardia [6]. Energy drinks aims to target youngsters of age ranging from 18 to 35 years. Earlier researches have stated that students of universities and colleges are unaware of the harmful effects of energy drinks but they are not resistant to the harmful effects [7]. The consumption of soft drinks has drastically increased throughout the world in recent past [8]. The sugar sweetened beverages increase the risk of Weight Gain, Obesity, Type 2 Diabetes Mellitus, and disorders of cardiovascular system [9]. These soft drinks are loaded with additional sugar Betel nut chewing is another injurious practice in university students. Betel nut chewing is one of the top five oral injurious habits across the globe and two hundred to six hundred million people chew betel nuts worldwide. It is the most common oral practice in India, srilanka, Taiwan and many more south Asian countries [10]. The side effects of chewing betel nuts are mouth and pharyngeal cancer, oral premalignant lesions, conditions like oral leukoplakia and sub mucous fibrosis, diseases of gums and addictions. Chewing betel nuts is the fourth most prevalent addictive practice after tobacco, alcohol and caffeine across the globe [11]. This study was designed to find out the consumption rate of energy drinks, soft drink and betel nuts and occurrence of their adverse effects among medical university students and whether they are aware about the side effects of energy drinks, soft drink and betel nuts.

MATERIALS AND METHODS:

A cross sectional study was conducted in undergraduate students of MBBS by the Department of pharmacology in LUMHS Jamshoro in December 2017. Permission of data collection was sought from chair person of pharmacology department. Data was collected from 316 MBBS students. Sample was taken by simple random sampling technique. Sample size was calculated by using RAO SOFT sample size calculator. Oral informed consent of the student was taken. Data was collected by filling the questionnaire. Student were explained about how to fill up the questionnaire, Students were assured that all information would be kept confidential. Students were given a period of fifteen minutes to fill up the forms.

RESULTS:

The data was collected from 316 MBBS students, selected by simple random sampling technique. Out of 316 students 198 (62.66%) students were male and 118 (37.34%) students were female (Graph: 1 showing Gender Distribution). From the 316 MBBS students who participated in our study 221 (69.94%) students were using energy drinks while 95 (30.06%) students replied that they don't use energy drinks. Majority of students 140 (63.3%) take energy drink's brand "Sting" and 81 (36.7%) students consume energy drink's brand "Red Bul". 75 (33.9%) students consumed energy drinks once a week 79 (35.7%) students consumed energy drinks twice a weeks and 67 (30.4%) students used energy drinks daily. 110 (49.8%) students said that they feel their energy level increased after taking energy drinks, 60 (27.1%) students experienced increased alertness 30 (13.6%) students experienced increased in heart rate 10 (45.5%) students said that their blood pressure increased after taking energy drinks and 11 (5%) students have said that they don't experience any effect after taking energy drinks. When students were asked why they take energy drinks, most of them 118 (53.4%) said that they take energy drinks to increase the mental performance and 103 (46.6%) said that they take energy drinks just for fun. From 316 students 280 (88.6%) students said that they take soft drinks. 36 (11.4%) students said that they don't use soft drinks. Majority of the students 170 (60.7%) said that they consumed brand "Pepsi", 81 (28.9%) students consumed "7-Up" and 29 (10.4%) students consumed "Miranda". 38 (13.6%) students take soft drinks once a week. 121 (43.2%) students take soft drinks twice a weeks and 121 (43.2) students take soft drinks daily. 131 (40.4%) students take soft drinks for rehydration. 52 (18.6%) students take soft drinks to reduce fatigue and 115 (41 %) students take soft drinks for taste. Out of 316 students 249 (78.8%) students were aware of

the side effects of soft drinks and 67 (21.2%) students reported that they are unaware of the side effects of the soft drinks. Out of 316 students 136 (43%) students take betel nuts and 180 (57%) said that they don't consume betel nuts. 37 (25%) students said that they consumed betel nuts daily. 57 (41.9%) students said

that they consumed betel nuts twice daily and 45 (33.1%) students said that they consumed betel nuts more than twice daily. 278 (88%) students were aware of the side effects of betel nuts 38 (12%) students said that they are not aware of the side effects of betel nuts.

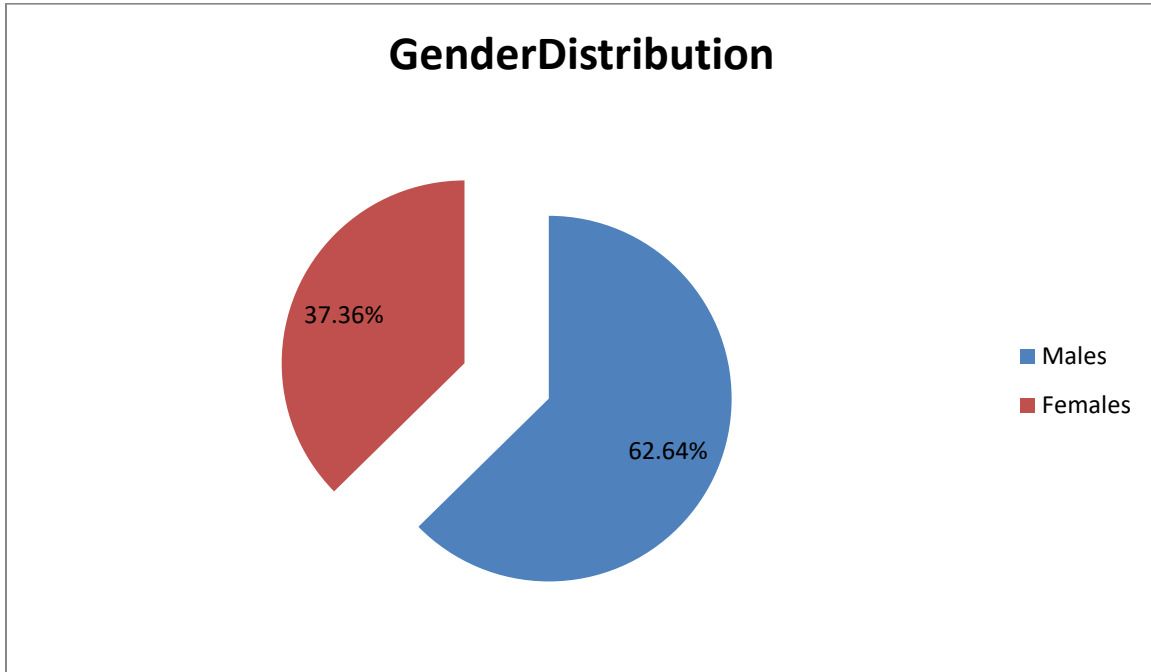


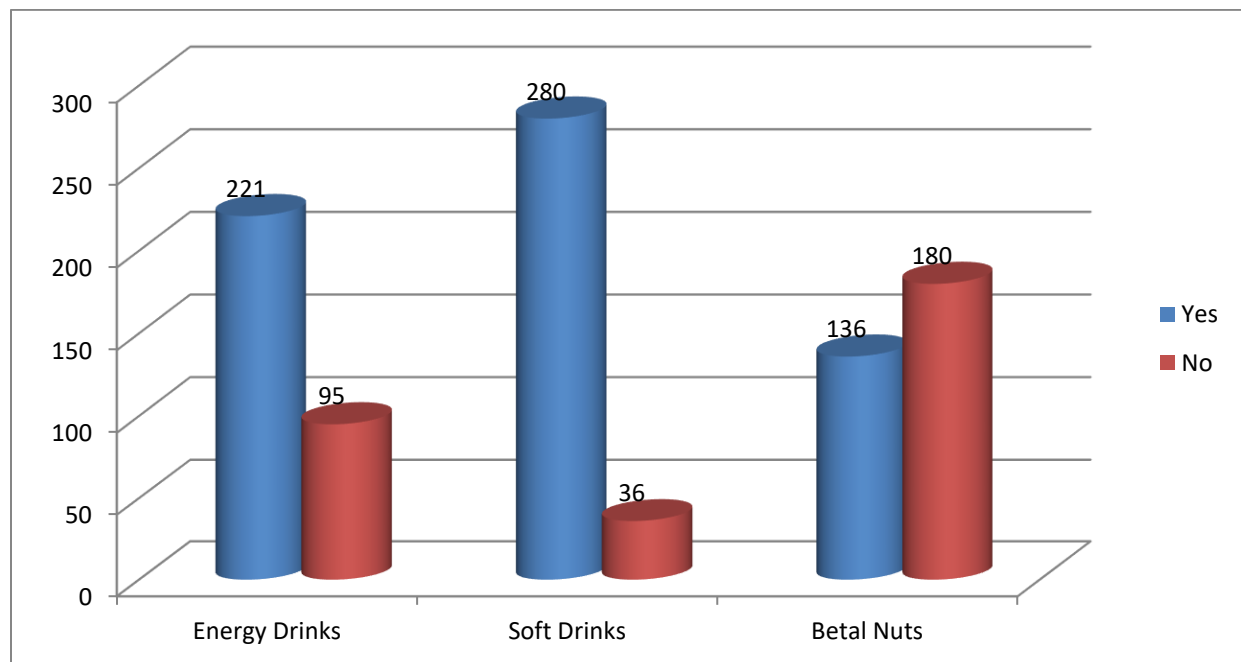
Figure.1: Gender Distribution represented by pie chart.

Table-1: Frequency and percentage of Betel nuts Consumption

| Variables | Frequency | Percent |
|---|-----------|---------|
| Students taking Betel Nuts | | |
| Yes | 136 | 43 |
| No | 180 | 57 |
| Consumption of Betel Nuts / Day | | |
| once daily | 34 | 25 |
| twice Daily | 57 | 41.9 |
| More than twice daily | 45 | 33.1 |
| Awareness about the Side Effects of Betel Nuts | | |
| Yes | 278 | 88 |
| No | 38 | 12 |

Table: 1. Frequency and percentage of Energy and Soft Drinks Consumption. n=316

| VARIABLES | ENERGY DRINKS | SOFT DRINKS |
|---|---------------|-------------------|
| STUDENTS USING DRINKS | | |
| Yes | 221(69.94%) | 280(88.6%) |
| No | 95(30.06%) | 36(11.4%) |
| BRAND OF DRINKS | | |
| Sting | 140(63.3%) | Pepsi 170(60.7%) |
| Red Bull | 81(36.7%) | 7-up 81(28.9%) |
| ----- | ----- | Marinda 29(10.4%) |
| CONSUMPTION OF DRINKS PER WEEK | | |
| Once a week | 75(33.9%) | 38(13.6%) |
| Twice a week | 79(35.7%) | 121(43.2%) |
| More than twice a week | 67(30.4%) | 121(43.2%) |
| AWARENESS ABOUT SIDE EFFECTS OF DRINKS | | |
| Yes | 305(95%) | 249(78.8%) |
| No | 11(5%) | 67(21.2%) |
| REASONS TO TAKE ENERGY DRINKS | | |
| To increase mental alertness | 118(5.4%) | 52(18.6%) |
| For Fun | 103(46.6%) | 115(41%) |
| Rehydration | ----- | 131(40.4%) |

**Fig.2: Bar charts of frequency of consumption of energy drinks, soft drinks and betel nuts**

DISCUSSION:

They consumption of energy drinks and soft drinks is increasing in young generation specifically in college and university students. Majority of the students are using energy drinks and soft drinks now a days and the main reason for the increase consumption of these caffeinated drinks is their easy availability in educational institutes and because these drinks are marketed as they are very beneficial for one's health and mental performance. This study was conducted in December 2017 to assess the frequency of consumption of soft drinks, energy drinks and betel nuts. Which brand of these drinks are in common use, their effects and whether students are aware of the adverse effects of these drinks and betel nuts. Approximately more than half of the students, who took part in our study, were consuming soft drinks. A previous study Denney-Wilson et al was in agreement with our study that the majority of the students consumed soft drinks [12]. This study also stated that one of the main reasons of increased consumption of soft drinks is because of their taste. TERRY-McElrath et al previously stated that approximately half of the students of their study sample consumed soft drinks daily which was in contrast to our study [13]. In our study approximately one third of the students consumed soft drinks daily. A previous study was also in agreement with our study that students take caffeinated drinks for rehydration. However usage of these drinks for rehydration after physical activity is dangerous for health [14]. In our study total 221(69.94%) students from 316 students consume energy drinks. Majority of them consume energy drinks to increase energy level and to increase alertness. A previous study was in agreement to our study [14]. Another previous study was in contrast to our study. They have lower proportion of students who consume energy drinks than our study [15]. In our study majority of students 140 (63.3%), consumed energy drink's brand "sting" because of its taste, easy availability and low price which in accordance with Saeed Ahmed et al [16]. Previous studies Aljaloud SO et al [17] and usman et al [18] were in contrast to our study that majority of their students consume energy drink's brand "red bul". A previous study stated that majority of students consume energy drinks for enjoyment and to increase mental performance [19]. A previous study also stated that very few students were aware of the potential adverse effects of betel nut chewing which is in contrast to our study [20]. Our study is stating that majority of students are aware of the side effects of betel nut consumption. Another study was in agreement to our study that many students of their sample size were aware of the side effects of betel nut consumption [21]. In our opinion

there is a need to educate the undergraduate medical students about the potential adverse effects of energy drinks, soft drinks and betel nuts.

CONCLUSION:

Majority of undergraduate medical students consume energy drinks and soft drinks and many of the students chew betel nuts despite knowing of their side effects, they still consume them. Students believe that energy drinks and soft drinks increase their mental alertness and give them energy.

REFERENCES:

1. Andrew P Smith, Gareth Richards(2018). Energy drinks, caffeine, junk food, breakfast, depression and academic attainment of secondary school students. *Journal of Psychopharmacology*.32(8) 893– 899.
2. Alsunni AA, Badar A(2011). Energy drinks consumption pattern, perceived benefits and associated adverse effects amongst students of university of Dammam, Saudi Arabia. *J Ayub MedColl Abbottabad* 23:3-9.
3. Arria AM, Bugbee BA, Caldeira KM, Vincent KB(2014). Evidence and knowledge gaps for the association between energy drink use and high-risk behaviors among adolescents and young adults. *Nutr Rev* 72 S 1:87-97.
4. Sawka MN(2007). American college of sports medicine position stand: exercise and fluid replacement. *Med Sci Sports Exerc*39:377–90.
5. Malinauskas BM, Aeby VG, Overton RF, Carpenter-Aeby T, Barber-Heidal K(2007). A survey of energy drink consumption patterns among college students. *Nutr J* 6:35.
6. Seifert SM, Schaechter JL, Hershorin ER, Lipshultz SE(2011). Health effects of energy drinks on children, adolescents, and young adults. *Pediatrics* 127(3):511–28.
7. Attila S, C,akir B (2011). Energy-drink consumption in college students and associated factors. *Nutrition* 27(3):316–22.
8. Tom Deliens et al. Correlates of University Students' Soft and Energy Drink Consumption According to Gender and Residency. *Nutrients* 2015, 7, 6550-6566; doi:10.3390/nu7085298
9. Malik, V.S., Popkin, B.M., Bray, G.A., Despres, J.P., Hu, F.B(2010). Sugar-sweetened beverages, obesity, type 2 diabetes mellitus, and cardiovascular disease risk. *Circulation* 121, 1356–1364.
10. Adrian A Franke, Jennifer F Lai, Crissy T Kawamoto, Pallav Pokhrel, Thaddeus A Herzog(2014) Areca (Betel) Nut Consumption:

- An Underappreciated Cause of Cancer, Hawaii J Med Public Health. 73: 400–403.
11. Gene Chen(2018). The effectiveness of school educating program for betel quid chewing: A pilot study in Papua New Guinea. Journal of the Chinese Medical Association 81:352e357
 12. Denney-Wilson, E., Crawford, D., Dobbins, T., Hardy, L. & Okely, A. D. (2009). Influences on consumption of soft drinks and fast foods in adolescents. Asia Pacific Journal of Clinical Nutrition, 18 (3):447-452.
 13. Terry-McElrath et al (2013). School Soft Drink Availability and Consumption Among U.S. Secondary Students. Am J Prev Med. 44(6): 573–582.
 14. Sandra D. R(2015). Energy drink usage among university students in a Caribbean country: Patterns of use and adverse effects. Journal of Epidemiology and Global Health 5: 103.
 15. Picard-Masson M, Loslier J, Paquin P, Bertrand K(2017). Consumption of energy drinks among Québec college students. Can J Public Health. 107 (6):514-9.
 16. Saeed A. S(2018). Frequency of Energy Drinks Consumption and its Determinants among undergraduate Students. P J M H S 12(1): 385
 17. Aljaloud SO (2016). Use of energy drinks among college students in Saudi Arabia. Am J Sports Med 4(3): 49-54.
 18. 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
 19. Alabbad MH, AlMussalam MZ, AlMusalmi AM, Alealiwi MM, Alresasy AI et al(2019). Determinants of energy drinks consumption among the students of a Saudi University. J Fam Community Med 26:36-44.
 20. Gene Chen(2018). The effectiveness of school educating program for betel quid chewing: A pilot study in Papua New Guinea. Journal of the Chinese Medical Association 81:352e357
 21. Pratt S(2014). The challenge of betel nut consumption to economic development: a case of Honiara, Solomon Islands. Asia-Pac Dev J 21:103e20.