

The Prevalence Rate of Energy Drinks Consumption among Young Adults in Iraqi Society

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Abstract

Background: Energy drinks (ED) consumption is an increasingly occurring phenomenon in our Iraqi society. ED marketing should be limited or forbidden particularly among adolescents until independent research confirms their safety. **Objectives:** To estimate the prevalence of energy drinks consumption among young people in Iraq in regard to: gender, sport habits, disease state, purpose of use, addiction liability. **Materials and Methods:** A cross-sectional study was conducted for Iraqi young adult people from October/2021 to January/ 2022 using a questionnaire. This survey included (784) person aged 15 to 35 years old after obtaining approval from the directors of each college and receiving oral approval from each participant. Data was collected through the questionnaire. **Results:** A very high proportion of ED consumers are males, and are actually sport practitioners, with no chronic disease. Tiger is the ED No.1 in Iraq. Mainly consumed on monthly basis, mainly for energy provision and improved performance. The general people attitude for these ED is to stay awake, and is therefore associated with sleep disturbance, however consumers do not think that it is difficult to give up ED and do not consider themselves addicted to it, and are aware of most of its risks. **Conclusions:** Most consumers are athletics with no chronic disease, almost monthly consumers ED for energy provision with Tiger being the most consumed ED, most consumers with able to give up ED consumptions were aware of risks of ED with a steep rise was observed recently compared to the past years.

Keywords: Consumptions, ED, Energy drink, Risk

INTRODUCTION

ED are mixtures of caffeine, taurine, and herbal extracts. Vitamins and amino acids are added to their composition.^[1] Due to high caffeine content, ED considered specifically beneficial in many sporting activities by enhancing motor system recruitment. In addition to caffeine taurine, guayana and sugar.^[2] ED consumption is more common in men between ages of 18-34 years, and almost one third of teens between 12-17 years drinks them regularly.^[3] **The prevalence of energy drinks consumption among a study population that was made in Erbil city was about 42.7%, especially adolescents and young adults (those ≤ 25 years) and was more common among males than females (55.7% and 29.8%, respectively).**^[4]

By early in the wars in Iraq and Afghanistan, the military had made energy drinks available to soldiers who were deployed to theaters of combat.^[5]

There are several types of energy drinks that are most used among young people, such as FIRE BALL (containing caffeine by 320 mg, taurine by 2000 mg, glucuronolactone by 2400 mg, and many flavorings and carbonated substances), Red STRONG and WILD TIGER.^[3] Figure 1 explains the examples of the commercially available ED in Iraqi market. There is a significant public health hazard and potential health consequences associated with the consumption of caffeinated energy drinks. It is reported that ED have a numerous detrimental side effects particularly neurological and cardiovascular in nature.^[6,7]

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Figure 1: Examples of commercially available ED in Iraqi market

Palpitations, hypertension and increase cardiac outputs are the main cardiovascular adverse effects. Coronary vasospasm, spontaneous coronary dissection, myocardial infarction and cardiac arrest are late cardiovascular complications.^[8,9] There is a substantial increase in energy drink consumption in the past few decades especially in western and Asian countries. A study was made on Al-Kindi medical students recommended further studies to evaluate factors involved in consumption of these drinks among medical students and their understanding of the risks involved as well as possible interventions to promote safe consumption.^[10]

For this purpose, there is a growing need to have a proper health care advice ED consumption. This study was carried out to verify the determinant of ED consumption by the students.^[11]

MATERIALS AND METHODS

In this cross-sectional study, respondents from different middle euphrates cities, with age range (15- 30) were included. A convenient sample of 784 individuals was selected. Some were college students, others were gym or public places attendants. Data collection was done from October 25th, 2021 through January 5th, 2022. A close-ended questionnaire was used to collect information related to socio-demographic characteristics of the participants, in addition to the amount of energy providing drinks consumption and their perceived benefits and health hazards. A pilot study was conducted on 15 participants before the actual survey to determine its validity. All the individuals between 15 and 30 years old of both genders who agreed to participate were included in the study. Those who had participated in the pilot study were excluded.

This study was conducted without any support or grant from anybody.

The questionnaire consists of 16 questions about age, gender, education level, life style habits of smoking, sports, chronic disease, cause of energy drink consumption, for those who consume ED they were asked about the kind, average periodic consumption of ED, the goal after these drinks consumption, whether they affect sleep style, if they can stop intake and if they were aware of the dangers of this use. Another important step in constructing the questionnaire was to focus on reliability so that results will be reproducible; and statistics can be made. People with incomplete questioner and with age extremes were excluded from the study. Google documents were used to design the questionnaire and data were collected both electronically and manually. Excel statistical program of Microsoft office 2017 version was used to analyze data.

Ethical approval

The study was conducted in accordance with the ethical principles that have their origin in the Declaration of Helsinki. It was carried out with patients verbal and analytical approval before sample was taken. The study protocol and the subject information and consent form were reviewed and approved by a local ethics committee according to the document number 112 (including the number and the date in 12/08/2021) to get this approval.

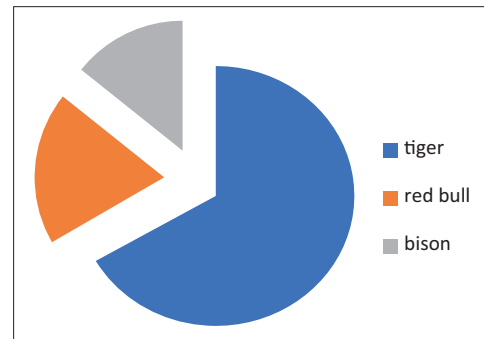
RESULTS

This study had enrolled a total of 784 subjects that were divided into: male (43.1%) and female (56.9%). Socio-demographic characteristics of the study samples are listed in Table 1.

Table 1: Socio-demographic characteristics of the study sample

Variable	Categories	Percent (%)
Gender	Male	46
	Female	10
Age	Average	>21.8
	Maximum	30
	Minimum	15
	Standard deviation	<2.58
Sport practitioners	Male	63
	Female	20
Chronic disease	Male	15
	Female	2
Periodic use	Daily	24.8
	Monthly	50.2
	During the examination	24.8
Causes of ED consumption	Tiredness	10.2
	During examination	6.3
	Sharing with friends	5.3
ED advantage	Stay awake for long time	42.7
	Improve mood	27.8
	Improve memory	2.04
	Increase concentration	19.5
ED disadvantage	Improve mental performance	7.9
	Role in sleep disturbance	69
Consumers	Can dispense energy drink	77
	Aware of risks of energy drink	68
	Unaware of risks of energy drink	32

The age of participants in terms of mean standard deviation was (21.8 ± 2.58). (46%) male participant from the total number of the male were ED consumers, whereas only (10%) female participant consuming ED. Male to female ratio of ED consumption is therefore about (3.27:1). The ratio of sport practitioners among male and female ED consumers among male consumers, a total of (63%) participants was a regular sport practitioner. While among the female ED consumers only (20%) participants had regular sport practice. Giving a ratio of (10:1). The ratio of male ED consumers with chronic disease is (15%) while female consumers were found to be (2%). The most frequently consumed drink at the highest rate was TIGER, followed by RED BULL, while BISON came last. About (65.8%) from the total consumers reported Tiger as their favorite drink (65.8%) the percentage of Red Bull consumers was (32.6%) and only 3 participants consumed Bison to represent only (1.6%) from total consumers, Figure 2 illustrates these percentages. The percentages of periodic use of ED among consumers, (24.8%) used it on daily bases, (50.2%) of consumers used it monthly, while during examination periods (24.8%) of all consumers used it more frequently. The equal rates of (39%) for each were recorded for both causes of energy provision and improved performance that was selected as the appropriate cause by (80%) ED consumers. While tiredness and exhaustion was

**Figure 2: Percentage of each ED use**

selected by (10.2%) consumer, then the cause of (during examination) was selected by (6.3%) consumer of causes. Finally (sharing with friends) was found to be the weakest cause for ED consumption and represented only (5.3%) of all causes. Regarding the major advantage behind ED consumption from the participants point of view regardless of their consumption, (42.7%) of participant answered (to stay awake for a longer time) that represent (42.7%), mood improvement was the view of (27.8%) participant, whereas concentration improvement was the view of (19.5%) participants, followed by the view of improved mental performance by (7.9%), finally memory improving represented only (2.04%) from the total. There are (69%) believe that energy drinks have a role in sleep disturbances. There are (77%) of drinker's participants are able to give up energy drinks consumption. There are 530 among the 784 participants (68%) of all participants are aware of the risks of energy drinks, (32%) is unaware of the risks of these drinks.

DISCUSSION

To improve vigilance and provide temporary memorial enhancement, ED have reached importance in young adult markets especially when they are readily easily accessible in public places. Males have high tendency to consume such drinks as a sign of prestige to show more power and energy, in addition to that they are more accessible to external environments.^[12,13] The latest scientific studies have revealed the damage that energy drinks affect various body systems, ranging from the nervous, digestive systems to the circulatory system and other organs. The results of a study on one of the popular energy drinks showed that rabbits treated with low dose of that energy drink had showed renal vascular congestion, hemorrhage of interstitial tissue, focal atrophy, and degeneration of lining epithelium of proximal and distal convoluted tubules, while the rabbits that were treated with a high dose of that energy drink showed renal vascular congestion, glomerular capillary congestion, hemorrhage of interstitial tissue with swelling of lining epithelium of proximal and distal convoluted tubules that appeared as pale cytoplasm with star-shaped lumen, and swelling of glomeruli; this reveals

that there is dose–response relationship between treated groups with low and high dose of the drink.^[14]

Doctors also confirmed an increase in the danger of energy drinks on the body during sports activities, as they raise the level of adrenaline, and thus can cause an increase in heart palpitations and disturbances in its beats; where the body loses its fitness. Low price, easy access with the effect of local advertisements encourage most participants to consume energy drink to replace lost energy after training or competition which might be contributed to the ignorance of respondents regarding health hazards.^[15] Excess consumption of sugar over time can lead to chronic conditions including obesity and diabetes.^[4] Majority of people feel that TV advertisements have an important role to consume ED.^[15] The percentages of periodic use of ED can be due to economic and carrier considerations. Energy drink intake is much more common among people with low level of education than those with higher educational levels. Recently, there is a strong social increase in the prevalence of energy drink consumption.^[16] Percentages of participants who believe that ED has role in sleep disturbance as caffeine can increase sleep problems and impaired performance. Serious cardiovascular problems such as hypertension, increased heart rate and heart rhythm disturbances may be caused by consumption of large amount of caffeine. In addition, caffeine may be associated with anxiety, sleep problems, digestive problems and dehydration. Some consumers can give up energy drink to avoid caffeine, considering them as unhealthy and did not like their taste. Few studies have investigated the reasons why individuals do not consume EDs.^[12]

According to study results, it is recommended to take an additional precaution for ED marketing and use. Increase the popular awareness of the health risks of these drinks consumption. To correct the daily life style and adapt the healthy habits of regular early sleeping, proper time planning, healthy diet, and sport practicing, as a suitable method to improve mental and physical performance. Not to underestimate the risks of any chemicals that stimulates or suppresses the central nervous system due to the possible risk of addiction, tolerance, beside all the other possible detrimental negative drawbacks.

CONCLUSION

According to the statistical analysis of the study, the following was concluded:

- 1) Males have a higher ration of ED consumption as compared to females.
- 2) A very high proportion of ED consumers are actually regular visitors of gym and sport practitioners.
- 3) Iraqi young adults that have a chronic disease are very rare consumers of ED.
- 4) The ED that was consumed at the highest rate was TIGER consumed by, followed by RED BULL, while BISON came last.
- 5) Monthly consumption of ED has a double probability as compared to daily or during exercise use that had equal probabilities.
- 6) An equally highest rate of energy provision and improved performance causes for ED consumption was reported. Sharing with friends the least, While tiredness and exhaustion, and (during examination) lied in between.
- 7) Regarding the major advantage behind ED consumption from the participants point of view: (to stay awake for a longer time) was the most popular, memory improvment was the least, while mood, concentration and mental performance improvement lied in between.
- 8) A high proportion of participants believe that energy drinks have a role in sleep disturbances.
- 9) A high proportion of drinker's participants believe that they are able to give up energy drinks consumption.
- 10) A good proportion of all participants are aware of the risks of energy drinks.
- 11) ED consumption had steeply risen recently and an attention must be paid to prevent further increase.

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Conflicts of interest

There are no conflicts of interest.

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