

# Energy Drink Usage and Effect Among University Students in a Polytechnic Palestine

Mohammed Qtait\*, Seyyan Alarab

College of Applied Professions, Palestine Polytechnic University, Hebron, Palestine

## Abstract

This study aimed to investigate the consumption of energy drinks and associated factors among university students in Palestine. *Methods:* Data came from a cross-sectional survey from 124 student in Palestine polytechnic university in 2019. Eligible participants completed a self-administered questionnaire assessing use and perceptions of energy drinks. *Result:* between males and females, where 56.5% for males and 43.5% for females. As for the sample members according to the social situation, most of the sample was single, 83.9% ranging between 18 and 20 years by 67.7%. Similarly, for the first and third grades, the rates were close to 37.1% and 35.5%, respectively, and 21.8% and 5.6% for the fourth and second semesters respectively. The students' specialization ranged between architectural and civil engineering, interior design and industrial automation, with a high percentage of the sample members, and 38.7% of the sample studied many different disciplines, due to the many specialties of the college. The median of advertisements for street advertising was 3.93 while 4.19 for commercials, the general trend towards the means of promotion was significant with a mean of 4.06. The most important reasons that led the college students to eat energy drinks were the delicious flavour, where the average response of the respondents to this reason was equal to 4.45. The feeling of happiness was the only offer where the average response was very high at 3.55 while in a few dozen shows the average was 1.72 to show fear and 2.43 to show introversion and isolation. *Conclusions:* the use of energy drink common between university student addition to exploring why drinking energy drink consumption in university students in Palestine, the study findings indicated that energy drink consumption might relate to the use of for reading in exam, and decrease fatigue, in side effect appear many as stress and fell comfortable and comfortable, which should be education and use prevention programs.

## Keywords

Energy Drink, Effects, University Student, Palestine

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## 1. Introduction

Energy drinks in the last time growth and common among youth in the world [1]. Palestine as other country more marketing for energy drinks. In spite of the ready availability of energy drinks, to date there has been little inquiry into patterns of consumption, effects of use and whether or not concerns about the adverse effects of the stimulant content are relevant in this region. Energy drink usage among

university students is of particular concern since this youthful population, engaged in academic pursuit is an ideal target for the promoters of energy drinks, with promises to boost energy, promote wakefulness, increase alertness and improve mental and physical performance.

As the global shop for energy drinks approaches nearly \$15 trillion, the general consumption of energy drinks has increased accordingly, particularly among college students. The consumption rates in this demographic are increasing

\* Corresponding author

E-mail address: mohamadtaha98@hotmail.com (M. Qtait)

primarily because of the concentration enhancement and fatigue-relieving effects of energy drinks [15].

According to a research the usage of Energy drinks tends to be higher amongst university students, under cognitive and performance demands. Some of the reasons cited by these students for using the drink were low energy levels, studying lack of sleep, [6]. While 76% of aviation students agree that the drinks has a not positive effect on their performance and job, a study revealed that almost 57% of them use energy drinks to keep them while on longer work especially during the night [1, 12].

Older reports have appear that energy drink usage in this population is globally. Among university students in the United States, 39–80% had used at least one energy drink in the past [17]. According to [8]. The findings of this study indicated that being male, living away from parents' home, tobacco use, alcohol use, and positive perceptions of EDs' helpfulness significantly predicted ED consumption in the past 30 days. It is alarming that the consumption of caffeinated EDs in undergraduate students seems to be linked with risky substance use behavior, suggesting a need for future health education and research on substance use prevention in this context. Health interventions that consider the awareness of EDs' contents and cautious use among undergraduate students are recommended.

Findings highlight the need for public health policies and programs to curb the growing public health phenomenon of ED consumption amongst university students. Such programs should consider the multi-level factors affecting ED consumption at the individual, interpersonal/social, and environmental levels, including educational campaigns on ED potential harms, regulating ED content and labelling, as well as restricting sales and marketing of these beverages, especially among young consumers [19].

Energy drinks contain large amounts of caffeine, which may cause adverse; energy drinks have sugar-containing and sugar-free versions, for example, some type drink energy provides 24 grams of sugar per 8 ounces (12% sugar concentration), [3]. Health effects, such as the increased risk of cardio metabolic diseases and change in sleep pattern [4]. Caffeinated energy drinks (EDs) contain more amounts of caffeine, which may cause adverse health effects, such as the increased risk of cardio metabolic diseases and poor sleep quality

This study aims to investigate the consumption of EDs and associated factors among students in Palestine. The objectives of this study were:

1. To investigate the pattern and motivations of ED consumption among undergraduate students in university student.

2. To explore the socio-demographic characteristics and lifestyle factors associated with ED consumption among university student.

3. To examine the associations between ED consumption.

## 2. Methodology

### 2.1. Study Design

This study utilized quantitative approach

### 2.2. Study setting

This study was conducted in the Palestine. Polytechnic university.

### 2.3. Study Population and Sample Approach

124 college students were recruited as subjects from applied collage in Palestine polytechnic university. Hebron Palestine. All subjects were randomly chosen between the ages of 18 and 23. the sample taken randomly.

### 2.4. Construction of Data Collection Instrument

The questionnaires were constructed in Arabic language; questions were framed in a way that it was easy to understand using simple Arabic expressions. Difficult technical terms were avoided in the preparation of the questionnaire.

### 2.5. Validity and Reliability of the Tool

This instrument was approved and evaluated by different experts including, researcher, nursing educators and other experts in the faculty of educational sciences to evaluate initial contents for validity. After revising the items in questionnaire and summarizing the expert's suggestions, modifications were made in wording and content.

### 2.6. Pilot Study

The pilot testing of the instrument was carried out on 15 student from university in different collage.

### 2.7. Ethical Consideration and Accessibility

The study participant were informed through a consent form (attached with the questionnaire), and received thorough explanation about purpose of the study, confidentially and sponsorship was ensured. In addition, they were informed about his/her right to refuse or to withdraw at any time during the study through the informed consent attached with each questionnaire.

Study Period the study was conducted from November to December.

### 3. Result

Data analysis: after data collection, the compiled data was refined, entered and analyzed using the Statistical Package for Social Science program (computer software SPSS V.22) for descriptive and inferential statistics. Frequencies were used to present the distribution of study variables. Means and standard deviation were computed for continuous numeric variables.

**Table 1.** Demographic variable of student.

Variable		Count	Percent (%)
Gender	Male	70	56.5
	Female	54	43.5
Marital status		124	100
	Single	1.6	85.5
	Married	18	14.5
Age		124	100
	Less than 18	6	4.8
	20from 18 to	84	76.7
	More than 20	34	27.4
Live		124	100
	City	82	66.1
	Village	34	27.4
	Camp	6	4.8
Academic level		124	100
	Bedwen	2	1.6
	First semester	46	37.1
	Second semester	7	5.6
	Third semester	44	35.5
	Fourth semester	27	21.8

From table that the sample was distributed at a similar rate between males and females, where 56.5% for males and 43.5% for females. As for the sample members according to the social situation, most of the sample was single, 83.9% ranging between 18 and 20 years by 67.7%. Similarly, for the first and third grades, the rates were close to 37.1% and 35.5%, respectively, and 21.8% and 5.6% for the fourth and second semesters respectively. The students' specialization ranged between architectural and civil engineering, interior design and industrial automation, with a high percentage of the sample members, and 38.7% of the sample studied many different disciplines, due to the many specialties of the college.

**Table 2.** Energy drink usage.

Variable		Count	Percent (%)
Drink energy drank	No (not drink)	40	32.3
	Drink one bottle in the day	44	35.5
	Drink tow bottle in the day	21	16.9
	Drink three bottle in the day	14	11.3
	Drink more than 3 bottle	5	4
Smoke	Not smoke	65	52.4
	One A packet of smoke	41	33.1
	Tow A packet of smoke	8	6.5
	Three A packet of smoke	5	4
	More than	5	4

As shown in the previous table that more than two-thirds of the sample drink soft drinks, regardless of the number of packs they drink daily by 67.7%, which constitutes a large proportion of university students, that similar in other country and accept with study of [17]. As for smoking, the ratio was close between smokers and non-smokers, was 52.4% of those who do not smoke, because the percent of female smoke less than smoke which is less than the proportion of drink energy drinks, and this percent its more than other university as Taiwan.

**Table 3.** How know about energy drink.

How student was introduced	NO	Mean	SD
Advertisements in the road	124	3.93	1.03
Advertisement company	124	3.96	1.05
Social media	124	4.04	1.04
Social setting	124	4.07	1.04
Friend's and family	124	4.15	1.03
At the supermarket/store	124	4.19	0.96

previous table that the university students' attitudes towards the means of promoting energy drinks were great for all the means of promotion mentioned, namely that these methods are effective in pushing students to buy these drinks. The median of advertisements for street advertising was 3.93 while 4.19 for commercials, The general trend towards the means of promotion was significant with a mean of 4.06.

**Table 4.** Why drink energy drink.

Why drink energy drink	count	mean	SD
To attention of the other sex	83	2.03	1.5
Showmanship	83	2.26	1.45
Sense of Greatness	83	2.78	1.55
Peer pressure	83	3.04	1.43
Sport	84	3.15	1.31
Curiosity and experiment	83	3.66	1.33
Felling rest	83	3.80	1.19
Keep alert	84	3.80	1.23
Decrease fatigue	83	3.87	1.17
Mental enhancer	83	3.91	1.23
Studying or major project	83	3.97	1.14
Good taste	83	4.45	0.87

The most important reasons that led the college students to eat energy drinks were the delicious flavor, where the average response of the respondents to this reason was equal to 4.45, and the study and examinations and reduce stress and fatigue was a sense of comfort and curiosity of the reasons that led students to eat these drinks, Between 3.66 and 3.97 where these averages are considered to be significant. While attracting the attention of the opposite sex and love of appearance reasons not to attract students to eat energy drinks, with an average of 2.03 and 2.26 respectively. The sense of greatness, peer pressure, playfulness and sports were also a moderately effective factor in driving students to eat energy drinks.

**Table 5.** The effect of the energy drink.

The effect of the energy drink	count	Mean	SD
Bottle shape	83	3.60	1.32
Bottle size	83	3.61	1.29
The price of the Bottle	83	3.65	1.35
Effect of the supervisors	83	3.72	1.32
Beverage Advertising	83	3.80	1.19
Friends	83	3.91	1.29
trade mark	83	4.28	0.93
The taste of the drink	83	4.37	0.99

The feeling of happiness was the only offer where the average response was very high at 3.55 while in a few dozen shows the average was 1.72 to show fear and 2.43 to show introversion and isolation.

The table also showed that several of the symptoms were average responses of respondents where they ranged between 2.68 to display tension and 3.43 to feel comfortable and comfortable as shown in the table.

**Table 6.** Signs and symptoms after drinking energy drink.

Signs and symptoms after drinking energy drink	count	Mean	SD
Feeling Fear	83	1.72	1.21
Diarrhea	83	1.89	1.34
Vomiting	83	1.89	1.29
Aggressive	83	1.90	1.29
Pallor	83	2.08	1.45
Difficult breathing	83	2.09	1.37
Sensitivity	83	2.10	1.40
Depression	83	2.13	1.39
Cooler limbs	83	2.24	1.46
Weak focus	83	2.31	1.44
a headache	83	2.43	1.44
Convergence and isolation	83	2.43	1.61
Stress	83	2.68	1.48
Speed of emotion	83	2.71	1.52
sleepy feeling	83	2.74	1.48
Frequent movement	83	2.75	1.54
Need to go frequently to the bathroom	83	2.84	1.55
Increase heart rate	83	2.86	1.48
Sleep or lack of sleep	83	3.01	1.48
Getting used to and addictive	83	3.19	1.62
Vigilance and attention	83	3.24	1.41
Awareness and walking	83	3.33	1.44
Feeling comfortable and comfortable	83	3.43	1.49
feeling happy	83	3.55	1.45
The general health trend after eating energy drinks	83	2.56	0.91

**Table 7.** Relationship between the variable sex and energy.

Variable	Count of drinking energy	Count of not drinking energy	Chi square	P
Gender	Male	53 (75.7%)	4.67	0.03
	Female	31 (57.4%)		
Age	Or less 20	60 (66.7%)	0.174	0.677
	More than 20	24 (29.4%)		
Academic achievement	First year	39 (73.6%)	1.44	0.22
	Second year	45 (63.4%)		
Marital statuses	Single	72 (67.9%)	0.11	0.916
	Married	12 (67.7%)		
Living place	City	57 (69.5%)	0.866	0.648
	Village	21 (61.8%)		
Smoking	Other	6 (75.0%)	18.009	0.000
	Smoker	51 (86.4%)		
Specialist	Non Smoker	33 (50.8%)	6.72	0.08
	engineering	43 (68.3%)		
Specialist	Computer technology	13 (61.9%)	6.72	0.08
	Management science	(41.7%) 5		
	Electronic engineering	23 (67.7%)		

From the previous table that there is a relationship between the variable sex and energy drinks, where the level of significance is equal to 0.031, which is less than ( $0.05 = \alpha$ ) that is, the proportion of those who consume energy drinks in females less than in males and this difference in ratios is statistically

significant, To reject the hypothesis of the first study.

The table also shows that there is no relationship between the variable age and consumption of energy drinks, where the level of significance is equal to 0.67, which is greater than ( $0.05 = \alpha$ ), ie the percentage of those who consume energy

drinks in students under the age of 20 years is statistically equal to the percentage of students older than 20 years, which leads us to accept the hypothesis of the second study.

As for the third, fourth, fifth and sixth hypotheses, the significance level in these hypotheses was 0.64, 0.22, 0.916, and 0.08 respectively. These values are greater than  $0.05 = \alpha$ . There is no relation between energy drinks, housing and academic level And the social situation and the department in which the student studies. These four hypotheses were accepted.

As for the seventh hypothesis, there was a strong relationship between the variables of smoking and eating energy drinks, where the level of significance is almost equal to 0.000, which is less than ( $0.05 = \alpha$ ) that is, the proportion of those who eat energy drinks in smokers is much higher than the proportion of those who drink energy drinks in non-smokers. The difference in proportions is statistically significant, leading us to reject the hypothesis of the seventh study.

## 4. Discussion

This study, the first known student survey of energy drink usage of energy drinks among students in university. More than 68% only for increased energy, wakefulness and when studying or doing projects. This is at the higher end of the ever used prevalence range described in other studies of energy drink use among university students (39–80%), [9]. More than two-thirds of the sample drink soft drinks, regardless of the number of packs they drink daily by 67.7%, which constitutes a large proportion of university students, that similar in other country and accept with study of [7]. As for smoking, the ratio was close between smokers and non-smokers, was 52.4% of those who do not smoke, because the percent of female smoke less than smoke which is less than the proportion of drink energy drinks, and this percent its more than other university as Taiwan. 68 percent of the sample were current users of energy drinks. This is more consistent with the current use prevalence reported in other student populations (22.6–62.2%), [10].

Student use was commonly initiated through the effect of advertisements. This is not surprise since the advertisements are very attractive, targeting individuals with fast-paced lifestyles looking for an energy boost, including tertiary level students wanting to sustain more hours of study, awaking long hours in the night, and extreme sports player and accept with study of [11]. and [8].

The study found that to keep alert and to study was the main common reason of energy drink use, which might imply that university students drink of energy to stay focused or energized, and Decrease fatigue, for rest, and taste.

Furthermore, in the study sample, energy drink users were unaware of the effective contents in energy drink while demonstrating relatively positive attitudes toward energy drink consumption.

In another study, it was found that the main cause for energy drink use among university students was to provide energy while work overtime to end a semester work or working overtime at the office [13]. Moreover, a recent study showed that, taste-driven consumers (31%) endorsed pleasurable taste, energy-seeking consumers (24%) endorsed function and taste motives, and hedonistic consumers (33%) endorsed pleasure and sensation-seeking motives [14]. Additional reasons for energy drink consumption were for enhanced fatigue recovery (79.9%) concentration enhancement (29.3%) and curiosity (22.0%), [18, 15].

That's related of students are under pressure to get more mark academically, some are always in need of energy drinks to enhance their academic. Since doping is illegal, these students need legal nutritional guidelines. There is inadequate information regarding the consumption of energy drinks in Palestine; thus, there is an obvious need to improve knowledge of energy drink use among consumers. Each year, new energy drinks appear on the market, and intake of energy drinks among university students is increasing [12].

A high prevalence of adverse effects and may occur in dangerous situations. This dangers the need for teaching about the risks of energy drink, modification of inaccurate and dangerous perceptions about the usefulness energy drink during exercise and sporting activities, and awareness of the dangers of the drinking behavior.

There is need to share students in alternative, health ways of coping with academic performance. Control over advertising, addressing problematic ingredients and implementing retail restrictions [16], at least for university students. Campuses may want to consider health and wellness policies to regulate the sale of energy drink.

## 5. Conclusion

Energy drink usage is prevalent among university student in Palestine. The use is generally not over, but is associated with a high rate of side effects and occurs in potentially dangerous situations like during exercise and in studying. There is a need to educate university students about the potential dangers of energy drink.

## Conflicts of Interest

The authors declare no conflict of interest.

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