

Consumption pattern of nutritional health drinks and energy drinks among University students in Ajman, UAE

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ABSTRACT

Objective: To study the preference, awareness, and percentage consumption of health drinks and energy drinks among University students in Ajman, UAE.

Materials and Methods: A cross-sectional study was carried out among 125 Gulf Medical University Students. Self-administered structured questionnaires were used for data collection. Data and statistical analysis was done using SPSS version 11.0. Chi square test was used to detect significant differences between frequencies.

Results: It was found that 92% of the students take energy drink while only 8% take health drinks. Among the energy drinkers, 95% preferred the brand 'Red bull' while only 5% preferred 'Effect'. Among the health drinkers takes it regularly at least once a day but energy drinkers take at least 2 cans per day. It was found that 64% of the students start taking health drinks from the age of 3- 5 yrs. and more than 92% of students start taking energy drinks from 15yrs onwards. It was also observed that 72% of the students were influenced by advertisements in television and retail outlay. Around 85% of energy drinkers thought that it would enhance their brain development while 10% preferred it due to its taste, 5% thought that it would increase their height. Majority of the students (95%) were ignorant about the high calorie and caffeine content in these energy drinks.

Conclusion: From the survey and the data analysis, it was observed that the majority of students preferred energy drinks over health drinks. Students thought that energy drinks can boost their mental energy. One can of an energy drink contain more than 80mg of caffeine. As a result, energy drinkers may experience adverse effects of overuse like headache, irritability, inability to concentrate, drowsiness, insomnia, etc. It is also important to note that 'Red Bull' had been banned in France for a decade due to health department's concerns about high caffeine and sugar content, glucuronolactone and taurine, an amino acid the company claims can actively stimulates body metabolism and mental alertness. Therefore, proper health education regarding nutritional benefits as well as adverse effects of energy drinks should be taught to the students at the entry level in the University. Keywords: health drink, energy drink, preference, awareness, consumption pattern

Key words: awareness, energy drinks, health drinks, university

INTRODUCTION

There is an ever increasing demand for nutritional and energy supplements in the modern world. Health food drinks provides nutrition and energy for both adolescents and adults, particularly among growing children Health drinks are generally labeled and marketed as a nutritious drinks and usually consumed as an alternative to milk by old, young and the patients. On the other hand, energy drink is a kind of beverages which claim to enhance both mental and physical energy. There are bountiful brands and choices of energy drinks available today

in the market. These carbonated or non-carbonated drinks generally contain large amounts of sugar or sugar substitutes, artificial sweeteners, caffeine, taurine and number of stimulants. In the last few decades, energy drinks have emerged in the everyday life of adolescent and adult clients¹. Accomplished to heighten mental vigour or to provide a swift energy boost, these beverages have become aplenty in University campus, clubs and recreational centres^{2,3}. Adolescents, who are in a transitional stage of physical and psychological human advancement

are one of the most nutritionally sensitive groups who have not acquired the deserving scrutiny. However, very few research have critically examined the demographics of energy drink and health drink consumption up to date, particularly among college students in UAE. Hence, the objective of the current study was to assess the preference, awareness, and percentage consumption of health drinks and energy drinks among University students in Ajman, UAE.

MATERIALS AND METHODS

A cross-sectional study was carried out among 125 students of Gulf Medical University (GMU). Both male and female who was willing to participate were included and the study was authorized by the institutional ethics committee. Self-administered structured questionnaires were used for data collection. The twenty-five item questionnaire comprised items pertaining to preference, awareness and consumption pattern.

STATISTICAL ANALYSIS

Data analysis was done using SPSS version 11.0. Chi-square test was used to detect significant differences between frequencies.

RESULTS

A total of 125 students participated in the study, among them 68 % were females (n=85) and 32% were males (n=40). It was found that 92% of the students take energy drinks but less than 8% only take health drinks. Health drinkers occasionally take at least one can per day but energy drinkers regularly take at least 2 cans per day. Energy drinks obtain energy enhancing properties mainly from carbohydrates and caffeine. Half a pint of energy drink usually contains 75-250 mg of caffeine⁴.

Many researchers had evaluated the physiological and cognitive performances since it contains substantial amount of caffeine, sugar, taurine and other undisclosed stimulants that can potentiate the pharmacological effects outside the limits of caffeine alone⁵⁻⁹. Thus, so far very little studies had been

devoted to exploring the correlation between consumption of energy drink and drug abuse. The vacuum creates in the market especially when mixes with alcoholic beverages. Combination of caffeine and alcohol could reduce the symptomatic fatigue and therefore lead drinkers fail to guess levels of alcohol intoxication^{10,11}. This is because depressant effect of alcohol could mask the stimulant effect of caffeine. Energy drinks are endorsed and marketed for their stimulant effects and unsubstantial claims to offer an array of advantages including enhanced physical and mental attention, performance, endurance and weight loss. Around 85% of the respondents thought that energy drinks would enhance mental energy and brain development ($P < 0.05$). Many research studies had also confirmed caffeine withdrawal in adolescents and children, the event of which may increase drastically with the active sales and marketing of energy drinks to these age groups.

It was observed that 48% of respondents like to have cold health drinks, 30% prefer hot and the remaining 22% in a moderate manner. It was found that 50% respondent rank their drink as under best category while 22%, 20%, and 8% rank them as good, better and satisfactory respectively. It was also observed that majority of students (70%) had purchased their health drink from retailer, 12% from wholesaler, 10% from cafeteria and remaining from other sources. The age structure of taking health and energy drinks are given in Figure 1 and 2.

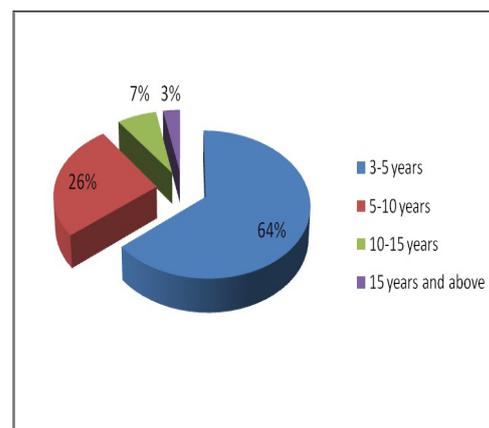


Figure 1. Age structure of health food drinkers.

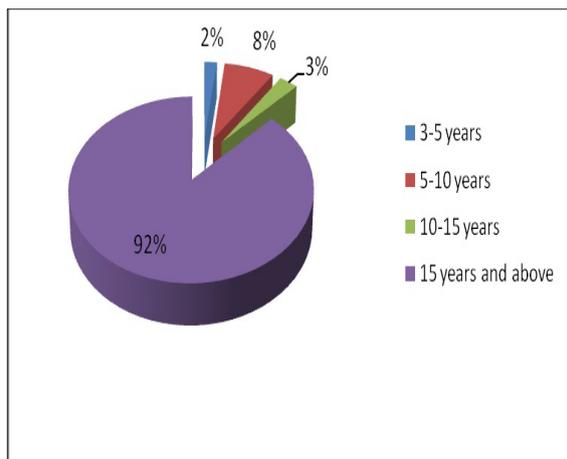


Figure 2. Age structure of energy drinkers

It can be seen from the Figure 1 that 64% of the students started taking health drinks from the age of 3- 5 years and more than 92% of students started drinking energy drinks from 15yrs onwards (Figure 2). Health drink consumption pattern was drastically reduced after the age of 10 years while energy drink consumption started increasing after the age of 15 years. Television and display at retail outlay are the two important media for the awareness of product. It was also observed that 72% of the students were influenced by advertisements in television and retail outlay. As given in table 1, around 85% of energy drinkers thought that it would enhance their brain development while 10% preferred it due to its taste, 5% thought that it would increase their height. Large number of students (n=65) had experienced caffeine related symptoms such as headache followed by tiredness, drowsiness and decreased cognitive performance (Table 2). Majority of the students (95%) were ignorant about the high calorie and caffeine content in these energy drinks.

Table 1. Reasons for the preference of energy drinks

Answers	No. of Respondents	%
Brain development	106	85.00%
Taste	12	10.00%
Height	6	5.00%

Table 2. Caffeine related withdrawal symptoms

Answers	No. of Respondents	%
Headache	65	52
Tiredness/fatigue	20	16
Sleepiness/drowsiness	20	16
Difficulty in concentrating/cognitive performance	20	16

Preference for the various brands of health drinks is given in Figure 3. The information obtained from the survey and data analyses, it can be concluded that people are aware about the different brands of health drink. Most of the consumers prefer to use a glass per day as it was convenient in terms of amount and price. Brand value was consider as a key factor while purchasing a health drink and in which Horlicks was the most preferred brand name among the customer. It was also observed that 46% consume one type of health drink while 40% prefer at least two types. From Figure 4, it can be concluded that the most preferred energy brand is 'Red Bull' followed by the brand 'Effect'. This study had also shown that most of the students infrequently replaced their brand once they had made a brand preference based upon gustatory aspects. This has substantial consequences, demonstrating that not only the price, but also sensory quality of health drink must be considered in order to retain the repeated purchases by purchasers.

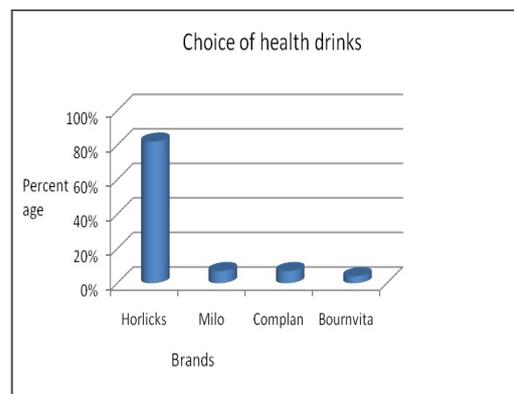


Figure 3. Choice of health drinks pattern

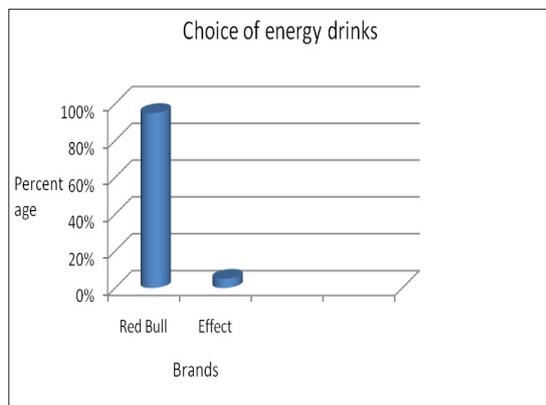


Figure 4. Choice of energy drink pattern

DISCUSSION

The results indicated that majority of students consume more energy drinks compared to health drinks. Unfortunately, majority of the students (>95%) were ignorant about the high calorie and caffeine content in these energy drinks ($P > 0.05$). Energy drinks obtain their energy enhancing properties mainly from carbohydrates and caffeine. Half a pint of energy drink usually contains 75-250 mg of caffeine⁴. There have been at least 66 investigations of caffeine withdrawal in the medical literature published within the last decade. The common symptom of caffeine dependence is headache, begin 12-24 h after the final consumption of energy drinks. As given in Table 2, majority of energy drinkers had experienced headache followed by fatigue, drowsiness, distress, and difficulty in focusing ($P < 0.05$). Additional caffeine withdrawal symptoms include decreased psychological performance, melancholy, irritability, nausea / vomiting, and muscle ache/stiffness. Caffeine dependence symptoms is often recognized as an official in ICD-10. WHO's International Classification of Diseases (ICD-10) and diagnosis in DSM-IV-TR (Diagnostic and Statistical Manual of Mental Disorders)¹². Unlike soft drinks, no restriction is applied on promotion and marketing under the FDA's 1994 dietary supplement act. There is an ever-growing concern about high caffeine content with respect to energy drinks and its potential adverse consequences. Caffeine toxicity may be defined as the distinguishing symptoms that appear immediately as the

result of excessive caffeine consumption. Caffeine intoxication characterize those of anxiety and other psychological emotional disorders, that may include anxiety, restlessness, insomnia, gastrointestinal disturbances, tremors, tachycardia and psychomotor agitation^{13,14}.

These findings have various important regulatory and clinical consequences, acknowledging the fluctuating and consistently high caffeine content of energy drinks, in combination with the aggressive marketing to adolescents and uneducated youths. This was in consistent with our observation that more than 72% of students were influenced by the media. As given in Figure 1, majority of the students started taking energy drinks from 15 years onwards while health drink consumption pattern drastically declined from 10 years to 15 years. This was due to sensory attributes and number of students thought that it would result in weight gain. This was found to be true because weight reduction was categorically associated with a curtailment liquid calorie than solid calorie consumption. Despite the fact that most reports till date have not been facts/evidence based studies, there is an ever growing theoretical support for a link between high energy consumption and serious health related issues¹⁵⁻¹⁷. It is obligatory for a number of countries, particularly European nations to display and carry health warning labels¹⁸. As reported by Kathleen et al, energy drink consumption is firmly correlated with behavior syndrome¹⁹. It may be an useful marker to identify

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