

A Study Of Energy Drinks Consumption Practices Among Football Players In Aurangabad District Of Maharashtra In India

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Abstract: Background: There are a lot of sports supplements marketed around the globe. The research is not conclusive regarding the various energy drinks and products in the field of sports. The objective of the present study was to estimate the prevalence of energy drink usage among football players from Aurangabad district of Maharashtra, India. The study evaluated energy drink usage patterns, types of energy drinks commonly consumed, frequency of consumption and motives of athletes behind consuming energy drinks.

Methods: A total number of 150 football players participated in the study. They completed a questionnaire which was administered during a football tournament involving various football clubs of Aurangabad. The energy drinks usage statistics were compiled and analysed.

Results: About 30% football players reported consuming at least one serving of energy drink in a week. Around 37.77% of respondents who consumed energy drinks mentioned that energy drinks helped them to regain energy after training or a tournament. Other reasons given for consuming energy drinks were replacement of body water (33.33%), to enhance performance (22.22%) and to prevent fatigue (6.66%).

Conclusion: There was a very low level of awareness regarding content, benefits and proper methods of utilizing energy drinks among the football players evaluated. There is a need for campaigns and educational interventions to educate football players regarding the rationale for consuming energy drinks.

Keywords: Energy drinks, Energy drink usage statistics, Football players.

I. Introduction:

Energy drinks are commonly consumed by athletes with a motive of enhancing their performance [1]. Most athletes rely on energy drinks, particularly because the term "energy drink" indicates that the product has a connection with physical activity. Hence, an ignorant user may assume that some benefits would be obtained after consuming these beverages [2]. Many energy drinks contain large amounts of sugar, caffeine as the main active ingredient, although some other substances like taurine, riboflavin, pyridoxine, vitamin B complex, nicotinamide, and various herbal derivatives (ginseng, guarana, and ginkgo biloba) may also be present [3]. A study found that high consumption of caffeine reduces insulin sensitivity [4] and increases the blood pressure level [5]. However, a study found out that consuming energy drinks when compared with a placebo led to energizing effects which were maximum 30 to 60 minutes after consumption and which were maintained for a minimum of 90 minutes [6]. An issue of great concern regarding energy drinks is that the information regarding the negative health effects of excessive intake are not presented over the labels [7]. Some energy drinks have constituents with possible interactions such as between taurine and amino acids and also between caffeine and some of the herbal extracts. Some herbs interact with caffeine to create a "synergistic effect" which varies with the brand of energy drink [8]. Energy drink manufacturers target young adults who are easily lured to consume energy drinks after being exposed to marketing advertisements in the media. However, there is a growing suspicion regarding the actual ergogenic benefit of energy drinks and possible adverse health effects due to its consumption on the individuals. [9]

Research regarding energy drink usage practices among the young population from the developing world is almost absent. Also, published literature regarding the usage of energy drinks by football players in India is scarce although various energy drinks are being increasingly marketed and sold in India.

The objective of the present study was to determine (1) the energy drink usage practices among football players from Aurangabad, Maharashtra, India (2) the prevalence and frequency of the energy drink consumption, (3) motives behind football players consuming energy drinks and (4) The knowledge among the football players regarding the contents and side effects of energy drink consumption.

In present study, an energy drink is defined as a type of soft drink, which is carbonated and contains caffeine, sugar or other stimulants expected to decrease or avoid fatigue, supply energy, increase alertness and enhance the physical performance.

II. Methods:

Study Design: Cross-sectional study

Subjects: A total of hundred and fifty Football players participating in the interclub football tournament in Aurangabad were included by simple random sampling. The players answered a questionnaire administered during the tournament. Total 150 questionnaires were distributed and all of the players receiving the questionnaire gave consent and responded by completing the questionnaire leading to a response rate of 100%.

Study instrument and data collection:

The questionnaire had two components, one part included questions regarding the socio-demographic information and the other part included questions regarding usage patterns of energy drink by the football players and motives behind consuming energy drinks. The questionnaire collected following details: basic information (age, training hours per day), energy drink usage patterns, names of the energy drink brands used, motives behind consuming energy drinks and information regarding contents and effects of energy drinks.

The participants were informed in detail regarding the study and then the consent was taken. They were explained that this study would help in evaluating the usage patterns of energy drinks in football players from the district and it would help in designing educational interventions for the football players. They were assured that confidentiality will be maintained regarding individual responses. This was done to ensure compliance.

Statistical analysis:

The analysis of the data was done on Microsoft Excel 2007. Descriptive statistics summarized the collected data and the results were expressed in frequencies and percentages.

III. Results:

Basic information regarding participant football players: The basic information of the participant football players is presented in Table 1. All the players were males. A majority (66.33%) of the study participants were within the age category of 21 to 25 years. A majority (48%) trained for a period of between 2 and 3 hours per day.

**Table 1
Basic Information of Study Participants**

Variable	Groups	Percentage of individuals (%)
Sex	Male	100
Age (years)	15-20	10
	21-25	66.33
	26-30	12
	Above 30	11.66
Training Hours per Day	1-2 hours/day	32
	2-3 hours/day	48
	3-4 hours/day	20

Data regarding energy drink usage patterns

The frequency of energy drinks use among the surveyed football players was 30%. This is the number of football players who answered in the affirmative regarding consuming an energy drink in the week before the study and those who consumed a minimum of one serving of energy drink in a week. Among those consuming energy drinks, 60% used Red Bull, 20% used Tzinga and 20% used other energy drinks. The majority (80%) of the energy drink users reported that they consumed 1 to 2 servings of energy drink in a week, whereas 20% answered that they consumed 3 to 4 servings of energy drinks during a week.

**Table 2
Energy Drinks Usage Practices of football players**

Variable		Percentage of players
Consumption of energy drinks	Yes	30
	No	70
Brand commonly used	Red Bull	60
	Tzinga	20
	Others	20
Number of cans per week	1 to 2	80
	3 to 4	20

Table 3 shows the motives of consuming energy drinks as indicated by the players. Most of the players (37.77%) mentioned that they consumed energy drinks to regain the energy lost during the exercise. Performance enhancement (22.22%) & replacement of body water (33.33%) were the other reasons behind consuming energy drinks. Some of the players (6.66%) mentioned that it reduced fatigue.

Table 3
Energy Drinks Usage Practices of football players

Motive of Drinking	Percentage of players
Regain the energy lost during the exercise	37.77
Performance enhancement	22.22
Replacement of body water	33.33
Reduce fatigue	6.66

Table 4 shows the data regarding information of contents of energy drinks and its side effects on human body as responded by football players.

Table 4
Information of contents of energy drinks and its side effects on human body as responded by football players

Variable		Percentage of players
Information regarding contents of energy drinks	Yes	11.11
	No	88.88
Information regarding methods of using energy drinks	Yes	6.66
	No	93.33
Information regarding side effects of energy drinks	Yes	8.88
	No	91.11

IV. Discussion:

The current study shows a very low prevalence of energy drink consumption in the football players. A prevalence of 51% among surveyed college students in general was reported in a study by Malinauskas et al. [1]. Similar to the present study, a common reason given by most (64.1%) respondents in that study regarding motive of drinking energy drinks was to regain lost energy after training sessions and competitions. Similarly, Bonci (2002) [10], found that most people consume energy drinks as a rapid method of gaining 'extra energy' to carry out the activities of the day and speed up the recovery from intense exercise. Duchan et al. [9] also stated that younger athletes are increasingly using energy drinks due to the ergogenic effects of caffeine and the various other ingredients in these drinks which are claimed as 'energy boosters' by the manufacturers.

Approximately 33.33% of the players indicated that they consumed energy drinks because they replaced body water. However, it is stated that that there are serious consequences of replacing energy drinks for water particularly while performing strenuous physical exercise. The reason is that the caffeine in most energy drinks can cause dehydration as it has a diuretic action and causes the kidneys to excrete extra amounts of water. [11]. Hence, if an individual drank energy drinks while sweating, it can lead to severe dehydration. Players who are consuming large amounts are at an even increased risk of sweating more and also burning out all the additional energy which is supposed to have been gained from the energy drinks action. One can observe from the responses of the players that they are confused regarding the role of sports drinks and that of the energy drinks. The purpose of sports drinks is specifically to replenish the lost body fluids, along with the lost essential minerals and nutrients during the exercise and after the exercise during recovery.

22.22% of the players responded that they consumed energy drinks because they improved their performance. Desbrow and Leveritt [12] reported that most of the elite athletes consume energy drinks to improve their physical performance and the concentration during an athletic activity. Other experimental studies also mentioned that the energy drinks increased endurance and improved the speed and work output when compared to an administered placebo drink [13, 14]. Alford et al. [13] concluded that the energy drinks consumption delayed the time to exhaustion when the effect of energy drink on endurance performance was compared with that of carbonated water. Similarly, a study by Mucignat-Carette [15] showed that a faster reaction time was observed in participants who drank the energy drinks when compared to participants who drank a placebo drink under the similar and controlled experimental conditions of the study.

There are numerous health implications of an excessive consumption of energy drinks, particularly for the brands which contain high amounts of caffeine. Also, an important negative effect of consumption of energy drinks containing high percentages of carbohydrates is that they can decrease the rate of absorption of nutrients

into the blood. Hence, there may not be much enhancement of energy level. Additionally, a high quantity of carbohydrates decreases the rate of fluid absorption or rehydration during the exercise. Ingestion of high levels of sugar can also cause a high sugar crash. This results when sugar enters the blood stream and provides a "blast" of energy which enables the athlete to feel good and also perform well. But, once that energy is burned up, mostly in about 30 to 45 minutes, there occurs a sugar crash. The reflexes of the athlete can slow down, leading to dizziness and causing a decrease in the muscle power and a drop in the performance [16]. There are also reported cases of seizures and cardiac arrest (following the consumption of energy drink) and erosion of dental enamel due to the acidity of the energy drinks [9].

In our study, a small percentage of players (6.66) mentioned that they consumed energy drinks to reduce fatigue. Buxton et al [17] also reported similar percentage (5.4) of the student athletes giving the reduction of fatigue as the reason behind consuming energy drinks.

Very few players (11.11%) had knowledge regarding contents of energy drinks and even lower percentage (6.66 & 8.88) had information regarding the methods and side effects of using energy drinks.

Limitations of present study are that only males were surveyed and only one group of players i.e. football players were surveyed.

Major strength of the study is that there was 100% response rate from the players.

V. Conclusions:

Consumption of energy drinks is comparatively low in football players from the region as compared to literature available. There is a serious lack of information regarding contents, methods of proper usage and side effects of energy drink consumption among the surveyed players. So, there should be educational programmes conducted to develop orientation regarding energy drinks, make them aware regarding benefits of sports drinks over energy drinks and inform them about recommended quantities of energy drinks to be consumed and also regarding potential harmful effects associated with misuse of energy drinks.

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