

## CONSTRUCTIVE EFFECTS OF ENERGY DRINK CONSUMPTION ON PLAYERS' PERFORMANCE

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### ABSTRACT

Consumption of energy drinks has been increasing dramatically in the last two decades, particularly amongst university athletes. Energy drinks are aggressively marketed with the claim that these products give an energy boost to improve physical and cognitive performance. The present study aimed to explore beneficial effects of energy drinks on the health and performance of sportsmen. For this purpose, a quantitative survey study was conducted on N=100 university males players ages, 19-24 years to know their opinion on the constructive effects of energy drink consumption on ppliers' performance. Findings of the existing study reveal that most of the respondents agreed that energy drinks do work as a stimulant which raise mental awareness or provide energy (sugars) and add sports performance.

## INTRODUCTION

Beverages that are called “energy drinks” are among the series of liquid form products with a significant amount of caffeine as a major ingredient. The addition of any other form of nutritional supplements is either ensured or not. The very first of its kind was advertised in the United States in the year 1949 called “Dr. Enuf” (Nomisma, 2013). On the other hand, Europe was introduced with such drink in 1987. After that whole world witnessed a huge development of the variety of drinks that fell in the same category. “Red Bull” brought popularity after its launch in 1997 (Klein 2009). Then the range of energy drinks expanded dramatically all across the globe. There have been several brands introduced till now. The market of energy drinks is expanding day by day attracting a huge number of consumers (Reissiget al., 2009). It is found that by 2013 the annual consumption surpassed 5.9 billion liters in about 160 countries of the world (Bailey, 2013). At the same time in 2012, the retail market value was noted to be around about 12.5 billion dollars increased about 56% since 2002 (Alsunni, 2015).

Industries and marketers previously targeting athletes have shifted their focus to general youth (Jenkins 2008). The marketing of energy drinks in most cases is deliberately focused to address young people (O'Brien et al., 2008). It has been noted that 2/3 of the consumers are boys as well as they are between 13 to 35 years of age. (Malinauskas et al., 2012). Similarly, another study also observed that in the USA energy drinks enjoy the place of the 2<sup>nd</sup> largest most preferred dietary supplement among the young generation. Around 30% use such drinks as part of their daily routine (Seifert et al., 2011). Similarly, it has also been observed that the popular trend of energy drinks is also not different in Saudi Arabia from the rest of the world (Alsunni, 2011). In a survey conducted in Saudi Arabia university students, it was observed that more than half of the participants pointed to the daily utilization of energy drinks (Al-Rethaiaa et al., 2010).

Energy drinks are manufactured as an energy supplement or energy booster. (Heckman et al., 2010). Caffeine serves as the most popular and major ingredient as an energy booster. “They generally contain 80-150 mg of caffeine per 8 ounces, which is the same as 5 ounces of coffee or two 12-ounce cans of caffeinated soda” (Al-Sunni, 2015). Similarly, most of the energy drink brands in the market also contain an extravagant amount of glucose while others artificial sweetening (Johnson et al., 2009). On the other hand, other constituents are “taurine, vitamin B, methylxanthines, ginseng, Yerba mate, acai, guarana, carnitine, maltodextrin, inositol, creatine, glucuronolactone, & ginkgo Biloba” (Al-Sunni 2015). Recently, substantial concerns have been highlighted regarding the protection of such products (Sapkota et al., 2008). Along with these observations, several conducted studies have shown there are certain negative health effects connected with the consumption of energy drinks (Seifert et al., 2011). While marketing emphasizes the beneficial effects of such drinks hazardous consequences need to be noticed. Consequential negative effects of the consumption of energy drinks continue to be a highly debated problem (Hu et al., 2013). There can be found very confined literature that focuses on the safety of energy drinks consumption among youth and adults (Al-Sunni 2015).

The objective of the present study was to determine the constructive effects of energy drink consumption on players' performance through a survey study.

## LITERATURE REVIEW

There is a range of energy drinks available all across the globe. All of these are marketed as the general source of an energy boost. Commercially offered energy drinks have been

witnessed with a certain impact on the performance of athletes and players in sports (Schneider et al., 2011). The intake of these drinks before physical exercise has been witnessed with following improved physical performance like running and jogging pace. High intensity of jumps, improved strides, enhanced muscular endurance and active leg muscles have been observed in tennis players. Likewise enhanced muscular endurance was also observed among the athletes of basketball (Abian et al., 2015). It did not impact the running speed of the velocity of the ball shot by the players, ball precision, distance traveled and distance of the player. On the other hand, this research also observed that during tennis matches the rate of sweating in players was higher in the player who consumed any particular energy drink leading to a high level of dehydration (Kovacs et al., 2007).

Among the children, the effect of caffeine has been noted with different effects. In children it strengthens attention at the same time it also causes a rise in blood pressure as well as sleep abnormalities (Seifert et al., 2011). In a study, it was noted that after a pause in caffeine intake among habitual consumer children, there was a decrease in attention and an increase in reaction time briefly. Similarly, the period for the reaction was observed to be decreasing as the amount of caffeine dose decreased (Castellanos et al., 2002). Another important development was also observed in this regard, habitual consumption of caffeine is more likely to affect the drink and beverage choices among children. It affects the brain of young children especially reward and addiction centers. However, this effect is highly gender-specific. Research conducted on 12-17-year-old children revealed that boys were addicted to caffeine-based drinks than girls compared to their usual caffeine consumption (Seifert et al., 2011). There are certain specifications concerning caffeine consumption among athletes and children. Intake of caffeine for athletes should not be more than 100 mg per day and 2.5 mg per day for children. For instance, 1 bottle of "Red Bull" contains 77 mg of caffeine. In other words, 1.1 mg per kilogram for a male of 70 kg weight and 2.2 mg per kg for a teen of 35 kg (Seifert et al., 2011). However, the generalization of the effects of caffeine in terms of adults to children is a highly undetermined notion (Seifert et al., 2011). A study conducted on 27 boys and 27 men, with an equal amount of caffeine, exaggerated blood pressure likewise, however, the heartbeat rate was observed to be suggestively dropped in boys, but no change was found in the case of men heart rate. Similarly, boys were observed with an increased motor response along with the rate of speech and reduced reaction time as compared to that of men (Seifert et al., 2011).

Three trials were undergone by the endurance athletes.

Endurance-athletes performed three trials. After 60 min. cycling at nearly 70%  $\dot{V}O_2$  max, the subjects pedaled to exhaustion on a cycle ergometer. During each exercise, the subjects received 500 ml of a test drink after 30 min submaximal cycling (Geiss et al., 1994). "Red Bull" without taurine, without glucuronolactone (U1), "Red Bull" without taurine, without glucuronolactone, without caffeine (U2) and "Red Bull" original drink containing taurine, glucuronolactone and caffeine (U3) (Geiss et al., 1994).

Energy drinks with high caffeine composition provide required results such as an increase in alertness, active mood and better memory among the consumers. (Malinauskas et al., 2007). One of the most prominent pieces of research inspected the effects of a famous and highly consumed energy drink of the market. This study was performed on 36 adults (Tax et al., 1998). The psychomotor performance which includes concentration, memory and reaction time of the brain along with physical endurance and activeness of the individual was assessed. Results depicted that the energy drink under examination increased the physical endurance by maintaining the heart rate at 65% to 75% max and maximum speed was

maintained on the cycle ergometers (Alford et al., 2001). Moreover, psychomotor performance was enhanced noticeably as a result individual activeness was also increased (Alford et al., 2001).

Contradictory to it, a researcher from the WHO (World Health Organization) asserted that increasing the intake of energy drinks could be a risk for public health (Jiang et al., 2017). Energy drinks are a new category of beverage, and they are rapidly developing a major part in parties and other get together cultures especially among the young population who prefer to mix up alcohol with energy drinks for the change of taste. Widely popular brands like "Red Bull" have taken the advantage of this whole situation, recently the addition of more than five hundred (500) new energy drinks has added to the already 5.80 billion dollar industry (Malinauskas et al., 2007). Originally based in Austria the Red bull drink is controlling about half of the energy drink markets in America. The growth in the market of energy drinks is rapid (Kapner 2008). Though there is no proper definition of "energy drinks", scientifically they are ascribed as non-alcoholic drinks with caffeine supplements as the main ingredient. It can improve activity and alertness among the consumers. It stimulates high performance among athletes by improving energy (Seifert et al., 2011).

On the other side, some of the drinks producing manufacturing companies have been energy drinks blended with alcohol and attracting multiple young and underage consumers through their advanced and provoking marketing strategy (Kapner 2008). Among the famous brands for such mixed supplies are "Loko" and "Joose" (Brown 2008). Campaigns marketing that is focused on enhanced performing ability, and addressing mostly children and adolescents with scare tagging, can lead to the increased jeopardy of intoxication of caffeine resulted from high consumption of energy drinks (Breda et al., 2014). At the same time, ambitious advertising for marketing energy drinks and endorsement through athletes and sports strengthens the notion to increase the consumption of energy drinks. Therefore, it has been a trend among athletes to consume their favorite drinks so that improved performance can be ensured. Similarly, after sport intake is to regain the lost strength among the players (Breda et al., 2014).

Likewise, energy drinks consumption has become the most recurring trend among athletes and adventures, at the same time amusing and training, due to the claimed energy boost (Schwenk 2002). The researcher tries to find the reasons behind energy drink consumption as well as the consequence it can have on the performance of players. Such energy drinks are marketed and thus believed, in a way to indicate that they are used to improve mental as well as athletic performance (Graham et al., 2001). Therefore, this study intends to explore the impact of energy drink utilization and athletic performance of the athletes (Graham et al., 2001).

## **RESEARCH METHODOLOGY**

This research focuses on the constructive effects of energy drink consumption on players' performance.

"Methodology is the science indicating ways of doing something properly. Methodology deals with the theory of fundamental science subjects and disciplines".

In this research quantitative research method was adopted. A survey was conducted to collect relevant data for the study. Findings and results were shown in numeric form. Males' players of football, hockey, rugby, volleyball, basketball and tennis served as the population for this study. To ensure convenience data collection purposive sampling technique was

adopted and a sample size of 100 participants was drawn. A questionnaire was formed comprising of multiple statements. A 5-point Likert scale was constructed comprising of Strongly Agree, Agree, Neutral, Strongly Disagree and Disagree. It was ensured to keep all the statements in simple form so that ambiguity can be avoided. For the analysis of the result, researchers used Statistical Package for Social Sciences (SPSS version-16). Chi-Square test was employed to know the opinion of players on the consumption of energy drinks and their positive and negative effects on players' mental health and sports performance.

### Number of contributors according to the demographic variables

Gender	Sample size
Male	100

### Males Players of field and court games

Sports	No. of players	Medium
Football	20	Field
Field Hockey	19	Field
Rugby	20	Field
Volleyball	18	Court
Basketball	19	Court
Tennis	04	Court
Total	100	-

### Age groups

Age	
19-21	53
22-24	47
Total	100

**Abbreviations** used in the Table 01 to 22 is: SA = strongly agree, A = agree, N = neutral, D = disagree, SD = strongly disagree, X<sup>2</sup> = Chi-Square, P = Significance

### RESULTS SUMMARY

Sr.#	Statement	5Points-Likert Scale					X <sup>2</sup>	P
		SA%	A%	N%	D%	SD%		
01-	Are you aware of Energy drinks	40	50	5	4	1	1.062	.000
02-	Energy drink makes you feel energetic	30	47	20	3	0	40.720	.000
03-	Energy drink consumption makes you active	26	49	18	7	0	38.000	.000
04-	Consuming international energy drinks brands enhance performance	27	39	23	9	2	43.200	.000
05-	Consuming Energy drink boost	19	39	22	18	2	34.700	.000

	up morale							
06-	Consuming Energy drink increase confidence	18	33	30	14	5	26.700	.000
07-	Consuming Energy drink elevate heart rate	21	32	37	9	1	45.800	.000
08-	Consuming Energy drink effect the performance in sports	21	53	18	8	0	45.520	.000
09-	Consuming energy drink provides mental satisfaction	20	30	31	16	3	26.300	.000
10-	Consuming energy drink decrease your performance	7	25	28	28	12	19.300	.001
11-	Consuming energy drink help to reduce stress of game	17	38	30	10	5	37.900	.000
12-	Consuming energy drink is more effective than water	16	33	19	19	13	11.800	0.19
13-	Energy of drink keeps you well hydrated	21	22	29	23	5	16.000	.003
14-	Energy drink Consumption does not affect the performance	7	23	33	25	12	21.800	.000
15-	Consuming energy drink for teenager sports man is beneficial	16	35	24	18	7	21.500	.000
16-	Consuming energy drink for teenager sports man is harmful	15	38	28	13	6	32.900	.000
17-	Energy drink can cause many disease	14	33	30	15	14	23.700	.000
18-	Energy drink is helpful in making sportsman health conscious	18	30	31	16	5	23.300	.000
19-	Energy drinks consumption cause insomnia	14	27	37	15	7	28.400	.000
20-	Excessive energy drink consumption cause diabetes	17	33	33	13	4	32.600	.000
21-	Energy drink consumption makes you agile	12	37	34	15	2	44.900	.000
22-	Consuming Energy drink boost up immune system	17	34	29	14	6	25.900	.000

## MAJOR FINDINGS

The current study was conducted on the university players of field and court games like Football, Hockey, Rugby, Volleyball, Basketball and Tennis. Results of the present study are showing that most of the players agreed that consuming energy drinks help them throughout their training sessions. These models build confidence in players and lessen their fear of exhaustion. Psychological improvements increase the mental toughness and help in maintaining remarkable fitness level. Findings of the study reveal that most of respondents of the survey believed that they remain active and focused before competition after consuming certain energy drink. Most of them also responded that they feel highly energetic and hydrated moreover they can complete their training sessions with speedy recovery from exhaustion. At the same time majority of the players agreed that they feel mental satisfaction and relief from stress of the competition after consuming energy drinks. Most of the

participants also agreed that energy drink consumption is helpful for teenage sports. However, majority of the participants also believed that consumption of energy drinks leads to high blood rate and elevated heart rate. Increased confidence and high morale have also been reported. Majority of the players also believed that intake energy drinks have positive effect on performance of energy drink. Although participants also agreed to the notion that energy drink have no effects on the performance in sports and physical exercises. Similarly, players also opined that certain international brands of energy drinks have a lot to do with improved performance of the players. Most of them also believed that using energy drinks is more effective than water. Respondent also agreed that energy drinks make them health conscious. Increased agility and improved immunity were also agreed upon consequences of energy drink consumption.

## **CONCLUSION**

Energy drinks actually do improve sports performance, there are lingering negative effects. Water and appropriate sports drinks should be used for rehydration. Sports drinks are those that claim to improve performance or speed up recovery and contain mainly water. Actually, energy drinks do work as a stimulant which raise mental awareness or provide energy (sugars) and add physical performance.

## **RECOMMENDATION**

- During Training sessions players should not neglect the healthy aspects of Consuming energy drinks.
- Clubs and Sponsors should support the players with the beverages during intense session phase.
- There should be sufficient number of resources for managing proper Fitness and activity level of the Players.
- Players should believe in Coaches and their trainers and follow the dynamic Pathway.

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