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Prevalence of Stimulant Drinks Consumption among University Students in North Western Nigeria

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Abstract

Background: Although young adults and college students are the primary target of energy drinks producing companies, there has been little studies regarding energy drinks awareness, safety perception and pattern of consumption among students in Nigeria.

Objectives: The aim of this research is to determine (i) the prevalence of energy drinks consumption (ii) awareness and the safety perceptions (iii) determinants and pattern of energy drinks consumption among medical students in the college of health sciences, Usmanu Danfodiyo University Sokoto.

Methods: A total of 148 students consented to participate in this cross-sectional descriptive study. A pre validated semi structured questionnaire was designed to assess the students' knowledge of energy drinks, pattern of consumption; including rate and types consumed, frequency of consumption and quantity consumed. The reasons for consumption, perception of safety concerns and side effects associated with the energy drinks. The responses obtained were extracted and analyzed using Statistical Package for Social Sciences (SPSS version 20).

Results

The life time prevalence rate of energy drinks consumption was 55.4% (n=82), while 25.7% are current users. Majority of participants have heard about the different types of energy drinks (96%). Participants were more conversant with Power Horse (35.6%), Red Bull (28.9%) and Passion (20.8%). Majority of participants were not sure whether or not it is safe 63(42.6%), 44(29.7%) think that it is not safe and 41(27.7%) think it is safe. Among the users, the main reasons for energy drinks consumption is for energy 30(20.3%), as stimulant 16(10.8%), for alertness 14(9.5%), for pleasure 8 (5.4%), 6(4.1%) to relieve tension and for refreshment 4(2.7%). Forty three percent of the respondents take an average of 1 can per day, with up to 6 (4.1%) taking between 4 to 5 cans per day.

The majority of users have never experienced any side effects 80(54%), 68(46%) reported some form of adverse effects. The side effects mentioned are headache 11(16.2%), abdominal discomfort 4(5.9%), sleeplessness 29(42.7%), while hyperactivity and tremor were 10(14.7%), loss of memory and fatigue (1.5%) and itching 2(2.9%).

Conclusion: Using energy drinks is popular among medical students for varieties of reasons. Although most users take at least 1 can on daily basis, a few take 3 to 5 cans per day. Further, side effects from consuming energy drink are fairly common. Peer group influence is also a contributory factor to energy drinks awareness.

1. Introduction

Energy drink is a type of beverage containing stimulants drugs, chiefly caffeine, which may or may not be carbonated and many also contain sugar or other sweeteners, herbal extracts and amino acids.¹ Approximately 66% of its drinkers are between the ages of 13 and 35 years old, with males being approximately 65% of the market.² By 2001, the US energy drink market had grown to nearly 8 million per year in retail sales. Over the next 5 years, it grew an average of over 50% per year, totaling over \$3 billion in 2005.² The market is currently estimated at over \$12.5 Billion, having grown by 60% between 2008-2012.³

In Nigeria, there are many brands of energy drinks such as Red Bull, Power Horse and Power Fist.

It has been reported that energy drinks have energizing effects, with effects being strongest 30 to 60 minutes after consumption and sustained at least 90 minutes.⁴

A study reported significant improvements in mental and cognitive performances as well as increased subjective alertness.⁵ Excess consumption of energy drinks may induce mild to moderate euphoria primarily caused by stimulant properties of caffeine and may also induce agitation, anxiety, irritability, and insomnia.⁶ In long term, too much caffeine may contribute to low bone density and may harm unborn children and nursing babies (if consumed by the mother). Consumption of a single energy drink will not lead to excessive caffeine intake, but consumption of two or more drinks in a single day can.^{7,8}

Bliss and Depperschmidt carried out research into perceived physical, psychological and practical effects of energy drinks among students' pilots in 2010. Overall, the students agreed that energy drinks had some negative practical effects on flying but disagreed that they posed physical or psychological effects.⁹

The market and degree of consumption of energy drinks have exponentially increased,¹ at the same time, there has been surprisingly little research into their safety perception among the consumers.

The objective of our research is to determine consumer awareness and safety perception of energy drinks, especially among medical students of the Usmanu Danfodiyo University Sokoto (UDUS).

2. Methodology

2.1. Setting of the study

The study was carried out in Usmanu Danfodiyo University Sokoto State. The institution is a federal university, located in Northwestern Nigeria.

2.2. Study design

This is a cross-sectional descriptive study.

2.3. Study sample

A convenient sample of 148 medical students of college of health sciences, Usmanu Danfodiyo University Sokoto State were recruited for this study.

2.4. Questionnaire

A pre validated 9 item questionnaire was used to interview the participants. The questions aimed at determining the knowledge about energy drinks, rate and pattern of consumption, types consumed, frequency of consumption, quantity, reasons for consumption, safety concern, associated side effects and awareness of energy drinks. The questionnaire was field tested among 10 randomly chosen students. The questionnaire took approximately 3 minutes to complete. Students were informed of the study protocol and those willing to participate anonymously completed the self administered questionnaire.

3. Results

Among the 150 medical students recruited for this study, a total of 148 (98.7%) participants, aged 21.5 ± 3.5 years completed the questionnaire. In regard to the first research question 142 (96%) of the respondents have heard about the different types of energy drinks. Of the different types, respondents were most conversant with Power Horse (35.6%), followed by Red Bull (28.9%), passion (20.8%), Bullet (6.0%), Matador (3.4%), Power Fist (2.7%), and Kukubima (2.7%) (Figure 1). The majority of the participants have taken energy drink at least once in their life time 82(55.4%), 38(25.7%) are current energy drinks users and 6.7% of respondents take energy drinks on daily basis (Table 1). Among the current energy drink users, Power Horse is the most consumed energy drink (34.2%), followed by Passion (26.3%), Red Bull (18.4%), Bullet, Kukubima, Power Fist and Matador (5.2%) each (Figure 2). In regard to the research question on pattern of consumption, majority of respondents take only 1 can per day 64(43.2%) and 6(4.1%) take 4 to 5 cans per day. In regard to the question on reasons for taking energy drinks, 30(20.3%) of the users take energy drinks for energy, 16(10.8%) as stimulant, 14(9.5%) for alertness, 8(5.4%) for pleasure, 6(4.1%) to relieve tension and 4(2.7%) for refreshment (Figure 3). In regard to the question on safety concerns, 63(42.6%) are not sure whether or not it is safe, 44(29.7%) think that it is not safe, 41(27.7%) are sure it is safe (Figure 4). Of those that responded to the safety concern of energy drink, 31.8% said it is addictive, 13.6% said it causes hyperactivity, headache (18.2%), sleeplessness (11.1%), stimulant (9.1%), dehydration (9.1%) and itching (7.1%) (Figure 5).

Fifty four percent (54%) of users said energy drinks do not cause any side effects, 68(46%) have experienced some side effects. Among the 68 users that have experienced side effects, sleeplessness was the most common side effects reported 29(42.7%), followed by headache 11(16.2%), itching 2(2.9%), hyperactivity and tremor 10(14.7%), abdominal discomfort 4(5.9%) and 1 each reported loss of memory and fatigue (Figure 6). Majority of the participants are not sure they will continue to take energy drinks 60(40.5%), 56(37.8%) intend to stop while 32(21.6%) intend to continue taking energy drinks.

Most of the users got to know about energy drinks from friends/peer groups 67(45.3%), 45(30.4%) from advertisement in media houses, 24(16.2%) from market/road side, 12(8.1%) from parents/relatives.

4. Discussion

In this study, we found that majority of the participants are quite familiar with different types of energy drinks. Our finding agrees with general reports in different countries.^{2,3} It has also been reported in the United State that sales of energy drinks has increased by

16% in a single year to almost \$9billion in 2011.¹⁰ The popularity of energy drinks among medical students is not surprising as these drinks are readily available at supermarkets and convenience stores and are socially acceptable drinks like soft drinks. Our study also revealed that more than half of the participants have taken energy drink at least once in their lifetime and one quarter are current users. Our finding of a few of the current users taking energy drinks on daily basis contradicts the finding in a survey of energy drinks among US overseas troop where 45% reported daily consumption.¹¹ This could be as a result of the difference in the population studied.

Most of our participants have never consumed more than 1 can per day while a few of them have ever consumed 4 to 5 can a day. This could be due to the high price of this group of beverages compare to other soft drinks.

We also found that using energy drinks for the purpose of getting additional energy, as stimulant and to increase the level of alertness remain the common reasons for consumption. It has been well documented that there is significant improvements in mental and cognitive performance as well as increased subjective alertness following consumption of energy drinks.³This is could be as a result of the high caffeine contents which is the main stimulant contains in energy drinks.⁷ The high percentage of respondents taking energy drinks for the purpose of getting energy is expected because the name “energy drink” ascribed to these group of beverage is what actually attracts the consumers.

Results from the present study also indicates that safety concerns is a very sensitive issues that need further investigation in this study as almost one third of participants are of the opinion that it is not safe, it is safe and not sure of the safety. The response of the participants agrees with a well documented fact that a can of energy drink per day will not lead to excessive caffeine intake, but a consumption of two or more cans in a single day can.^{7,8} . In contrast, it was reported in Colorado Springs that several high school students became ill after drinking Spike Shooter, a high energy drink, prompting the principal to ban the beverage.¹²

The response of a good number of the respondents who believes that energy drinks may cause addiction, sleeplessness, dehydration, hyperactivity, tremor, and headache is supported by the report that high intake of caffeine (greater than 300mg per day) may have detrimental health effects in the short term, such as headaches, anxiety, increased heart rate, increase in blood pressure and insomnia.¹³ In addition to caffeine intoxication, the consumption of energy drinks has been linked to seizures,¹⁴ and acute mania.¹⁵

It is worth of note that majority of the respondents got to know about energy drinks through their friends. This finding illustrates the strong effect of peer group influence among the youths.

5. Conclusion

The present study showed that almost all the medical students interviewed are aware of the different types of energy drinks and consumption of energy drinks is popular practice among medical students. Power Horse is the most popular. A few of the respondents take energy drink on daily basis. Among medical students energy drink users, consuming energy drink is particularly popular for additional energy and for alertness. In addition, safety concerns is a very sensitive issues that need further investigation in future studies because almost equal percentage of the participants expressed three different views regarding perception of safety concern.

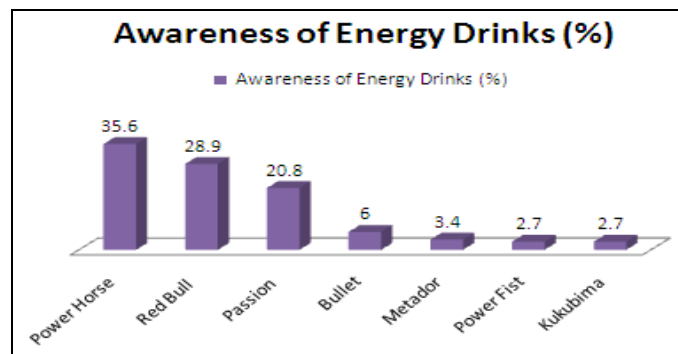


Figure 1

Variables	Response (%)
Life Time Energy Drink Use	Yes: 82(55.4%) No: 66(44.6%)
Current Energy Drink Use	Yes: 38(25.7%) No: 110(74.3%)
Daily Energy Drink Use	Yes: 10(6.7%) No: 138(93.3%)

Table 1

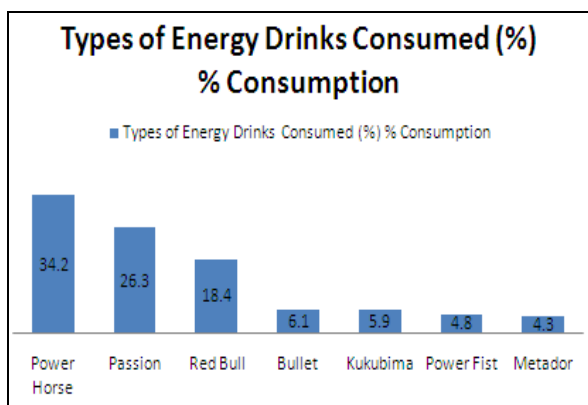


Figure 2

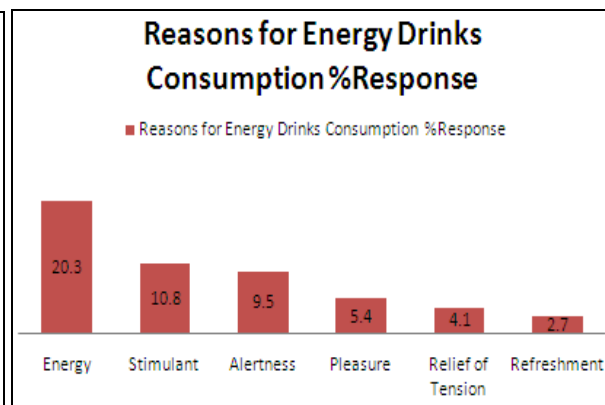


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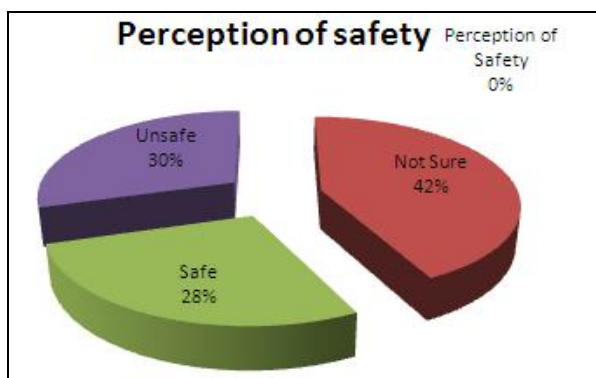


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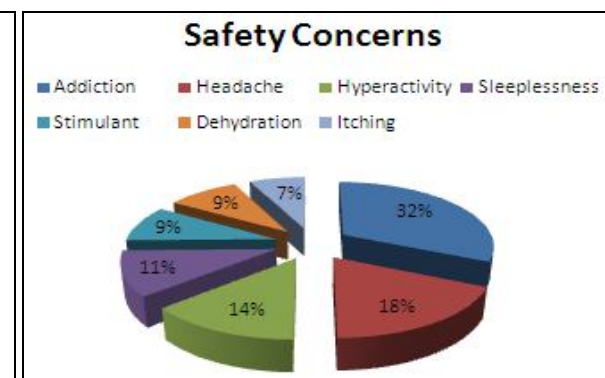


Figure 5

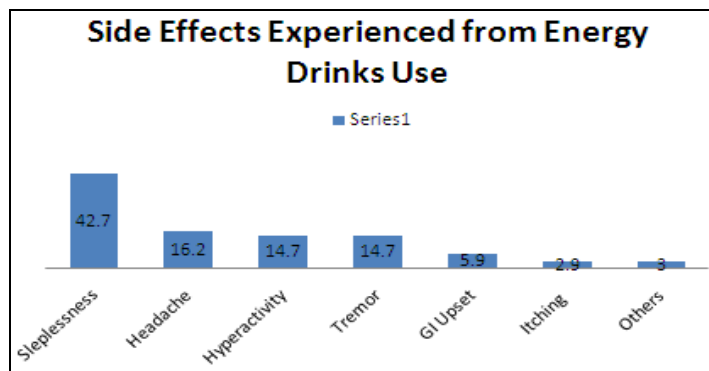


Figure 6

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