

Research Paper

A Descriptive Study to Assess the Knowledge regarding Energy Drink Consumption and Its Effect on Sleep Quality Among Students of Khalsa College of Physical Education, Amritsar, Punjab

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ABSTRACT

Energy drink has become increasingly popular among young adults, with many consuming them to stay alert and focused. However, energy drink contains high level of caffeine, sugar and other stimulants that can disrupt sleep quality. Good sleep quality is cardinal to good health, and research has shown that it plays a fundamental role in immunity, learning, metabolism and other biological function. In this regard the present study aimed to assess the knowledge regarding energy drink consumption and its effect on sleep quality of student of khalsa College of physical education. The non experimental descriptive design was followed and 131 students were selected as study subject with purposive sampling technique. Self-structure knowledge questionnaire were used to assess the knowledge of students regarding the energy drink consumption and it's effect on sleep quality. For data analysis, both descriptive and inferential statistics was applied. The Karl Pearson Coefficient correlation was used to calculate correlation between knowledge regarding energy drink consumption and sleep quality shows positive correlation ($r=0.645^{**}$, $p<0.01$). Chi square was applied to search out association of the knowledge regarding energy drink consumption and its effect on sleep quality on students with selected socio demographic variable of study subject. There was positive correlational relationship between knowledge regarding energy drink consumption and sleep quality with socio demographic variable except age and no. of cans drink per week. Energy drink consumption is a significant predictor of sleep quality among students. Public health campaigns and educational program should aim to promote health energy drink consumption habits and sleep hygiene practices.

Keywords: Energy drink consumption, sleep quality, caffeine, sugar

Fluids are a vital requirement for humans, but fluid Intake can be obtained from a variety of fluid sources other than water. The selection of appropriate fluids, timing of intake and supplement choices are important for optimal health especially in the young people. Although, still a relatively small proportion in total fluid intake. The absolute rate of energy drink use has been increasing significantly in young people.

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Pharmacological caffeine is an adenosine receptor antagonist. As Such it appears that the effects of caffeine on performance occur largely through its occupation of adenosine receptors. It acts primarily on A1 and A2A receptors which in turn are related to functions of brain associated with sleep, arousal and cognition. Caffeine is efficiently and quickly absorbed by stomach and small intestine, with peak plasma levels occurring in first 30 Minutes.

Energy drinks are caffeinated beverages designed to Enhance alertness Levels and provide an Energy boost to the consumer. Caffeine is the most significant Ingredient in energy drink because of stimulation effect it has on Central Nervous System (CNS) of humans. Guarana, taurine and sugar derivatives are the Examples of other Ingredients added to Energy Drink which may produce synergistic stimulatory Impacts beyond the effects of caffeine. However, excessive consumption of energy drink has serious negative effects such as cardiovascular, cognitive and nervous disturbances.

According to American Psychologist Association (APA) sleep is the one of factors associated with person's health. The recommended amount of sleep for an adult is 8 hours. This is aided by a biological clock or circadian Rhythm that is internal to humans and “cues” to body to sleep when it is time. Good sleep quality is cardinal to good health, research has shown that it plays a fundamental role in Immunity & Learning and Memory. Although, sleep deprivation has not been shown to significantly affect a person's ability to perform physical tasks.

Energy drinks have become increasingly popular, particularly among young adults, due to their purported benefits in enhancing alertness and physical performance. The annual consumption of energy drinks in 2013 exceeded 5.8 billion liters in around 160 countries. However, there is growing concern about their potential impact on health, specifically regarding sleep patterns and overall well-being.

With the increasing prevalence of energy drinks, particularly among adolescents and young adults, it is important to understand their impact on sleep to develop guidelines for safe consumption. Given the potential for widespread health implications, this study will contribute to a more comprehensive understanding of the relationship between energy drink consumption and sleep disturbances, informing both public health recommendations and individual choices.

Objectives of the Study

- To assess the knowledge regarding energy drink consumption among college students.
- To assess the sleep quality among college students.
- To determine the correlation between knowledge regarding energy drink consumption and sleep quality among college students.

Assumption

The students would have insufficient knowledge regarding energy drink consumption.

REVIEW OF LITERATURE

A correlational study was conducted to assess the energy drink consumption associated with a cluster of unhealthy dietary behaviour and short sleep duration among 8942 Australian

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adolescent of age group 12-17 years by using stratified random sampling technique. Data was collected by online questionnaire assessing their dietary, physical activity and sedentary behaviour. The result shows that 8% of student were consuming energy drink on regular basis while 16% consume less than one cup and 76% reported as they not consume energy drink. It concluded that most Australian do not consume energy drink, regular consumption is more prevalent in males and consumption appear to cluster with other unhealthy dietary behaviour and short sleep duration.

A Survey was conducted to assess energy drink consumption pattern among college students in United State was selected by random method. A 19 items survey was done on 496 students by taking questionnaire. They reported that 253 students consumes more than one drink each month.67% consume for insufficient sleep, 65% to increase energy and drinking with alcohol were 54%. It concluded that majority of situation assessed, user consume one energy drink with a reported frequency of 1-4 days per month, many users consumed three or more when combining with alcohol.

RESEARCH DESIGN:

For the present study, descriptive research design was used to achieve the objective of study.

RESEARCH SETTING:

The place or type surroundings where the research takes place is called a research setting. In the present study, Khalsa College of Physical Education, Amritsar, Punjab was selected to conduct the Research.

POPULATION:

Target population is defined as the entire population in which Research is interested and to which they would like to generalize the research findings. In the present study, the target population was selected students of Khalsa College of Physical Education, Amritsar, Punjab.

VARIABLES UNDER STUDY:

Research Variables

The research variables in this study are:

- Energy drink consumption
- Sleep quality

Socio-Demographic Variables:

It refers to varying characteristics i.e. vital statistics of an individual, group or population. In the present study it includes Age, gender, Type of family, Family income (in rupees), Did you consume any other type of caffeine, Which age did you first started consuming energy drink, how many cans of energy drink do you drink per week, at what time of day do you usually consume energy drink.

INCLUSION AND EXCLUSION CRITERIA:

Inclusion Criteria

- Consuming energy drinks for at least for 3 months
- Willing to participate in study

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SAMPLE AND SAMPLING TECHNIQUE

Sample

- Sample is subset of population, selected to participate in a research study. The sample for present study was students of Khalsa College of Physical Education, Amritsar, Punjab.

Sample Size

- The sample size for present study was 131 students, who were studying in Khalsa College of Physical Education, Amritsar, Punjab.

Sampling Technique

- It is a process of selecting a portion of the designated population to represent the entire population.
- In the present study, “Purposive sampling technique which is a type of non-probability sampling technique” is used to select the sample.

SELECTION AND DEVELOPMENT OF TOOL

- The research tool was started and developed by keeping in mind the objectives of the study, reviewing theoretical sources, previous studies.
- The tool was divided into 3 parts:
 - PART 1; Socio-demographic profile
 - PART 2; Self structured knowledge questionnaire on Energy Drinks Consumption.
 - PART 3; Sleep quality index scale

DESCRIPTION OF TOOL:

The tool was divided into 2 parts:

1. PART 1: SOCIO-DEMOGRAPHIC PROFILE

It includes; Age, gender, type of family, family income (in rupees), did you consume any other type of caffeine, which age did you first started consuming energy drink, how many cans of energy drink do you drink per week, at which time of day do you usually consume energy drinks.

2. PART 2: SELF-STRUCTURED KNOWLEDGE QUESTIONNAIRE ON ENERGY DRINKS CONSUMPTION

The self-structured knowledge questionnaire on energy drinks consumption is 17 items inventory focusing on level of knowledge regarding energy drinks consumption among adults from 0 to 17, with highest score indicating good knowledge regarding energy drink consumption.

RESULTS

SECTION – 1

SAMPLE CHARACTERISTICS

Table – 1 Frequency and percentage distribution of sample characteristics

N = 131

| Variable | n | % |
|---|----------|----------|
| Age (in years) | | |
| <18 | 10 | 7.6 |
| 19-20 | 43 | 32.8 |
| 21-22 | 57 | 43.5 |
| >23 | 21 | 16.0 |
| Gender | | |
| Male | 88 | 67.2 |
| Female | 43 | 32.8 |
| Type of Family | | |
| Joint | 72 | 55.0 |
| Nuclear | 58 | 44.3 |
| Extended Family | 1 | 8 |
| Family income (Rs.) | | |
| Rs. <10,000/- | 24 | 18.3 |
| Rs. 10,000 – 20,000/- | 23 | 17.6 |
| Rs. 20,001 – 30,000/- | 14 | 10.7 |
| Rs. >30,000/- | 70 | 53.4 |
| Did you consume any other type of caffeine? | | |
| Coffee | 91 | 69.5 |
| Kola nuts | 3 | 2.3 |
| Ice Cream | 4 | 3.1 |
| Chocolate | 33 | 25.2 |
| Which age did you first started consuming energy drink? | | |
| <15 years | 39 | 29.8 |
| 15-20 years | 74 | 56.5 |
| 20-25 years | 15 | 11.5 |
| >25 years | 3 | 2.3 |
| How many cans of energy drink do you consume per week? | | |
| One | 54 | 41.2 |
| Two | 36 | 27.5 |
| Three | 15 | 11.5 |
| More than three | 26 | 19.8 |
| At what time of day do you usually consume energy drink? | | |
| Morning | 11 | 8.4 |
| Afternoon | 67 | 51.1 |
| Evening | 44 | 33.6 |
| Night | 9 | 6.9 |

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SECTION – B

Objective 1 – To assess the knowledge regarding energy drink consumption among college students.

Table – 2 Frequency and percentage distribution of level of knowledge regarding energy drink consumption N = 131

| Level of knowledge regarding energy drink consumption | N | % | Mean | SD |
|---|----|------|-------|-------|
| Poor knowledge (0-5) | 15 | 11.5 | | |
| Average knowledge (6-11) | 59 | 45.0 | 10.31 | 3.825 |
| Good knowledge (12-17) | 57 | 43.5 | | |

Maximum score = 17

Minimum score = 0

Objective-2: To assess the sleep quality among college students.

Table -3 Frequency and percentage distribution of level of sleep quality N=131

| Sleep quality | n | % | Mean | SD |
|-------------------------------|----|------|-------|--------|
| Good sleep quality(0-28) | 16 | 12.2 | | |
| Average sleep quality (29-56) | 42 | 32.1 | 52.63 | 17.622 |
| Poor sleep quality (57-84) | 73 | 55.7 | | |

Maximum score=84

Minimum score =0

Objective – 3 To determine the correlation between knowledge regarding energy drink consumption and sleep quality among college students.

Table – 4 Relationship between knowledge regarding energy drink consumption and sleep quality. N = 131

| Variable | Mean | SD | r |
|---------------|-------|--------|-------|
| Energy drink | 10.31 | 3.825 | |
| Sleep quality | 52.63 | 17.622 | 645** |

Maximum energy drink score = 17

****significant at p<0.01**

Minimum energy drink score = 0

Maximum sleep quality score = 84

Minimum sleep quality score = 0

MAJOR FINDINGS

- The mean score and standard deviation of consumption of energy drink was 10.31+ 3.825, whereas mean score and standard deviation of sleep quality was 52.63= 17.622 respectively.
- It shows that 21 students with maximum percentage (52.4%) where in age group of >23years has good knowledge regarding energy drink consumption 43 students with (51.1%) having average knowledge regarding energy drink consumption were in age group of 19-20 and very few students (10) with majority (50.0%) were in age group of <18 years.
- It shows that maximum (91)students were near to two third (41.8%) had both average and good knowledge regarding energy drink consumption consume coffee

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whereas very few (3) students had good knowledge regarding energy drink consumption (66.7%) consume kola nuts.

- It shows that majority (88) of students were male among whom more than half (55.7%) had poor sleep quality whereas among 43 female more than half (55.8%) had poor sleep quality.

CONCLUSION

This study concluded that most of the students have average knowledge regarding energy drink consumption and poor sleep quality. This study showed that there was positive correlation between knowledge regarding energy drink consumption and its effect on sleep quality

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Conflict of Interest

The author(s) declared no conflict of interest.

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