

# Inclusion of Energy Drink Usage in an Assessment

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## Significance and Background

### Introduction

- The literature clearly links energy drink usage to increased cardiac events.
- However, many in-and out-patient settings do not routinely ask about energy drink consumption during intake assessments.

### Purpose

- To implement energy drink usage items in a nursing inpatient intake assessment.
- To determine if energy drink usage impacts physiologic factors.

### Objectives

- Outline the literature on energy drink consumption.
- Describe the sample and methodology involved.
- Discuss results of an ongoing study on energy drink consumption and physiologic factors collected from patients admitted to a six-hospital integrated health care delivery system
- Identify implications for practice, limitations, and future recommendations.

### Literature Review

#### Overview through a Systematic Literature Review (1980-2014)

- Energy drinks/caffeine cause positive and negative physiological changes in the body
- These drinks are consumed by up to 50% of adults and more common in males
- The main reason consuming is for "energy"
- ED visits common with co-ingestion of alcohol
- More than a third of the cardiovascular problems were related to arrhythmias
- Most common neurological dysfunction is seizures
- Most common hematological dysfunction is thrombocytopenia
- Greatest danger is when energy drinks are used in combination with alcohol

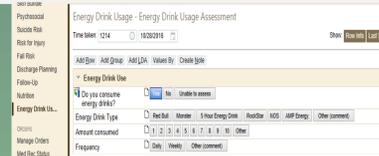
#### Other Studies (2014-2015)

- A randomized, double blind, placebo controlled pilot study with healthy, young adults found norepinephrine levels increased in an energy drink group vs. placebo drink group
  - Norepinephrine levels increased almost 74% in energy drink group vs. 31% in placebo group (Svatikova et al., 2015)
- Studies with large sample-sizes support that energy drinks cause cardiac dysfunction
  - Specifically, consumption of energy drinks is associated with Atrial fibrillation and Ventricular arrhythmias (Sanchis-Gomar, et al., 2015)
- Case studies demonstrate negative consequences of energy drink use.
  - Cardiovascular symptoms, psychiatric symptoms, and neurological symptoms - tachycardia, tremors, anxiety, headache (Tofield, 2015)
  - Excessive energy drink usage resulting in chest pain and subsequent blockage, likely due to energy drink ingredients increase platelet aggregation and decrease endothelial function (Unal et al., 2014)
  - Energy drinks can be related to potentially fatal arrhythmia after consumption of multiple energy drinks (Ward, Lipshultz, & Fisher, 2014)

## Sample and Methods

### Sample

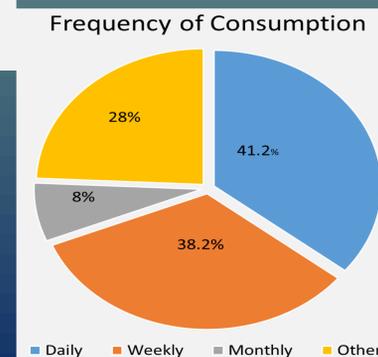
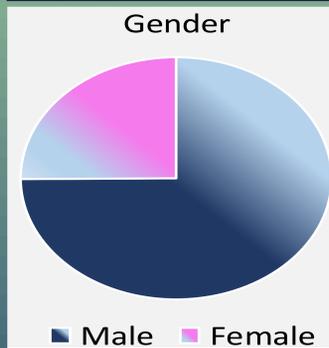
- Quantitative Descriptive research study
- Energy Drink Question added to nursing inpatient Admission Assessment November 2016
- Convenience sample of adults admitted to the Catholic Health Services of Long Island, NY six-hospital healthcare system
- Admitted or Clinical Decision Unit answering "Yes" to consumption of drinks
- Institutional Review Board approval
- As of December 2017 159 participants



### Methods

- Electronic Health Record report built to pull data including:
  - Gender
  - Age
  - Type of energy drink
  - How many and frequency of consumption
  - Cardiac Rhythm
  - Electrolytes
  - CBC
  - Problem List and Admitting Diagnosis

### Data as of December 2017



## Results and Discussion

### Correlation and Significance For those participants who consumed one or more energy drinks (n = 80 : 50.3%)

↑ SODIUM	SERIOUS ARRHYTHMIAS <sup>a</sup>
Pearson Correlation $r = 0.179$	Pearson Correlation $r = 0.160$
Significance (2-tailed) $p = 0.024^{**}$	Significance (2-tailed) $p = 0.046^{**}$
Number of participants $n = 159$	Number of participants $n = 156^b$

<sup>a</sup> Serious arrhythmias defined as Supraventricular Tachycardia, Atrial Fibrillation, Atrial Flutter, and Heart Blocks

<sup>b</sup> Three participants with missing data for documented rhythm

### Implications and Recommendations

#### Implications

- Provides practitioners broader information on
  - The effects of energy drink consumption
  - The potential impact on the health of patients as smoking, illicit drug use, alcohol use do in current practice.

#### Recommendations

- A broader inclusion of energy drink consumption questions on intake assessments

### Conclusion

- Since there is significance between patients use of energy drinks, and increased sodium levels and serious arrhythmias, recommendations include broader inclusion of energy drink consumption questions on intake assessments similar to inclusion of items related to tobacco use, alcohol use, and illicit drug use.

### Selected References

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