

Determinants of Energy Beverage Consumption Practices in College Students

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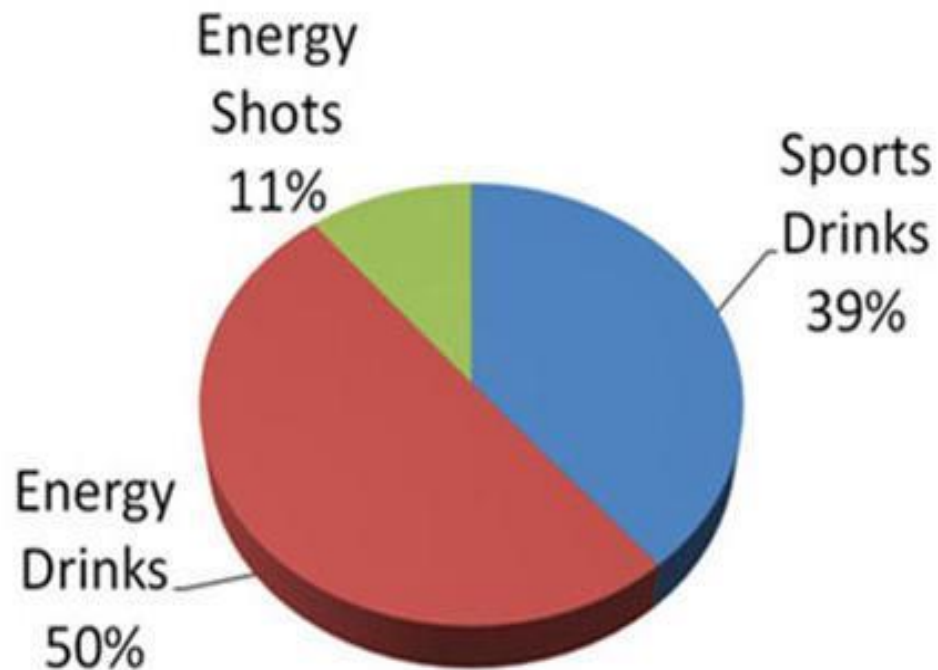
Disclaimer: I have no potential, perceived, or real conflict of interest. No honorarium, grant, or other form of payment was received to conduct this study.

Objectives

Upon completion of this presentation, the learner will be able to...

- describe current trends related to energy beverage consumption.
- list attitudes, subjective norms, and perceived behavioral control factors influencing the intent to consume energy beverages in college students.

The \$15 billion energy drink market



Source: Nutrition Business Journal estimates: <http://newhope360.com/supply-news-amp-analysis/15-billion-energy-drink-market-explained-1-chart-and-6-bullet-points>

Background

- College students consume energy drinks to fight fatigue, enhance concentration, & to mix with alcohol (Attila et al; Seifert et al, 2011)
- # energy drink—related emergency dept. visits have doubled since 2007 (SAMHSA, 2013)
- Research on issues such as social influence on consumption practices, perceptions, and attitudes regarding consumption is limited.

Purpose

- Determinants of use are poorly understood, therefore, the purpose of this study was to better understand the chain of beliefs and attitudes that drive college student intent to consume energy beverages.

Research Question

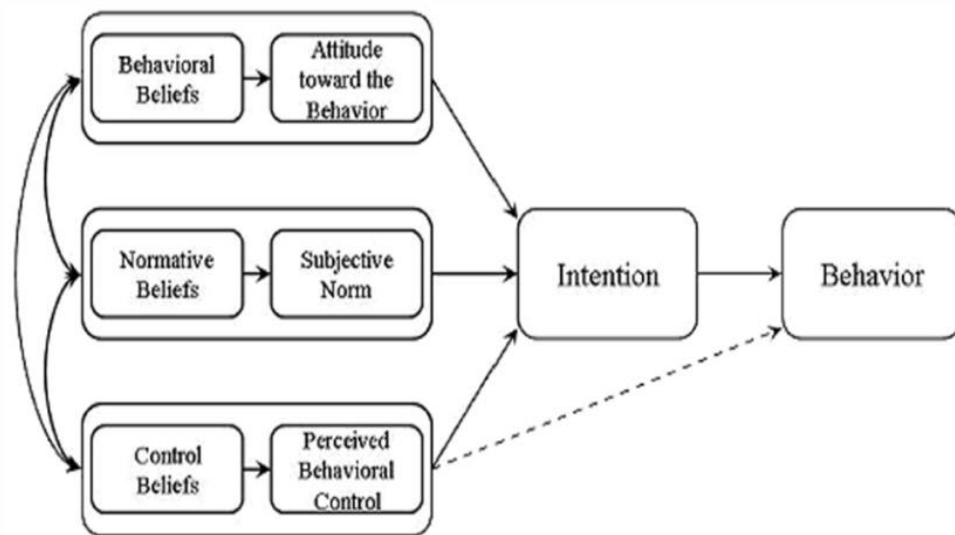
What unexamined factors predict intention to consume energy drinks in college students?

Methods

- Mixed methods design; survey of Midwestern U.S. college students (n=283)
- 1 open-ended question
- Survey instrument (102 Likert items, Cronbach's Alpha .94):

- ✓ General demographics
- ✓ Brief medical history
- ✓ Energy beverage consumption practices
- ✓ Planned Behavior items (i.e., attitude, subjective norms, perceived behavioral control)
- ✓ Reasons for use

- IRB approved
- SPSS 22.0 used for descriptives, correlations, regression, factor analysis
- Level of significance: $p < .05$
- N-Vivo 10.0 for windows



Theory of Planned Behavior (TPB) figure used with permission.
Source: <http://people.umass.edu/aizen/tpb.diag.html>

TPB: Sample Survey Items

Attitude

- Consuming energy beverages is helpful to me.
- Drinking energy beverages is enjoyable.
- It is a good to drink energy beverages on a daily basis.

Subjective Norms

- Other people like me drink energy beverages
- People whose opinion I respect want me to drink energy beverages
- People close to me drink energy beverages

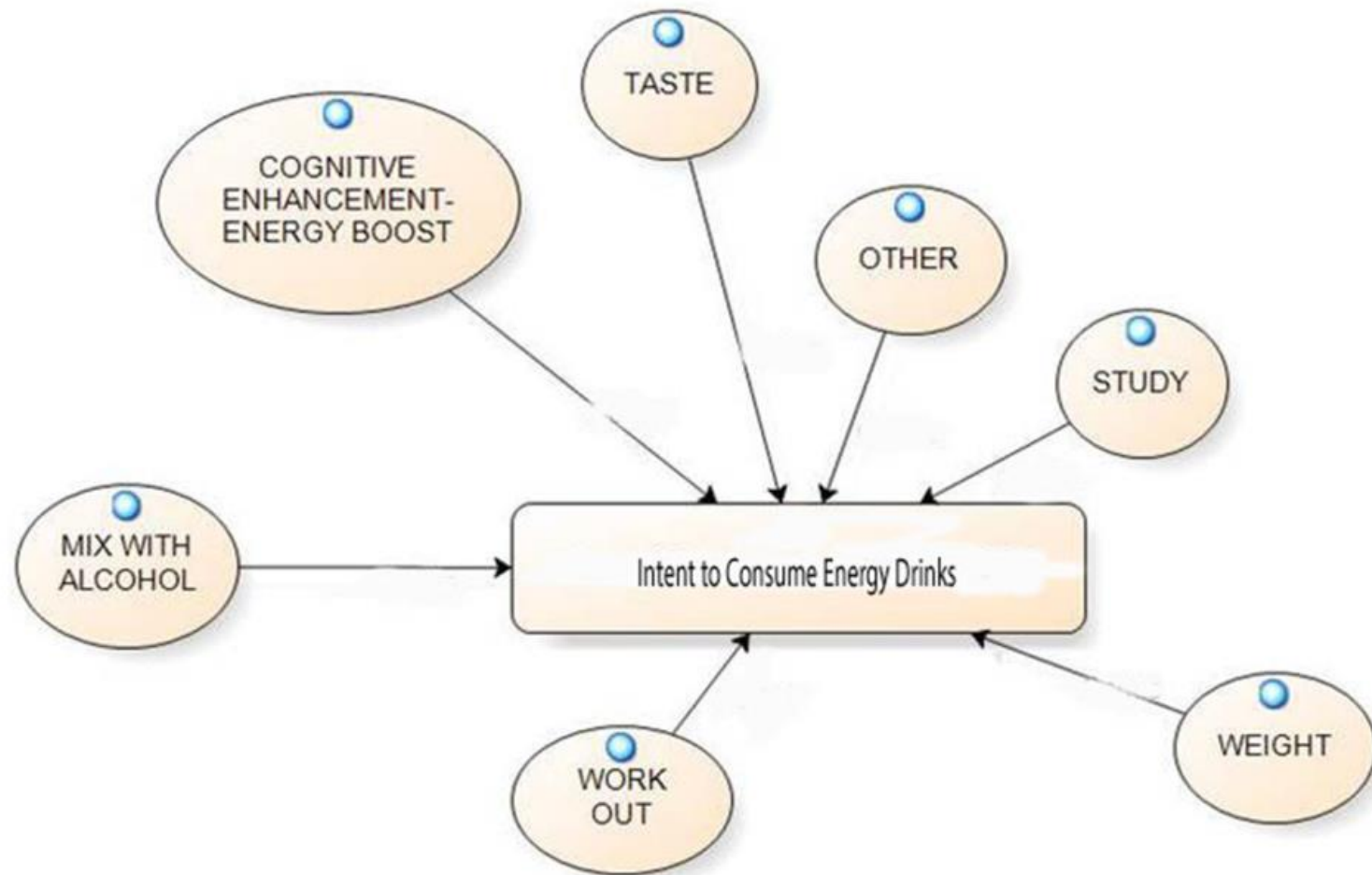
Perceived Behavioral Control

- I am able to drink energy beverages on a daily basis if I want to
- Drinking energy beverages on a daily basis is easy for me
- It is my decision whether or not I drink energy beverages
- Drinking energy beverages is within my power.

Intent to Consume

- It is likely that I will consume energy beverages on a daily basis.
- I intend to consume energy beverages on a daily basis.
- I am certain I will drink energy beverages on a daily basis.

Describe reasons why you do or do not drink energy beverages



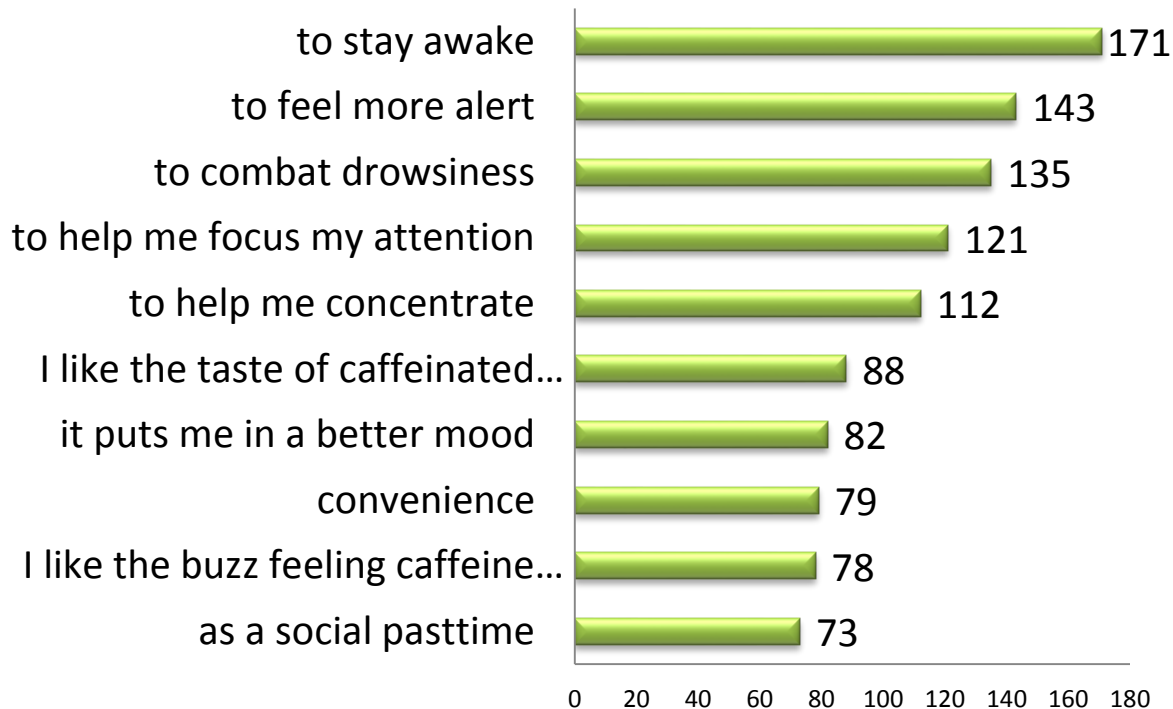
More than 50% mix with alcohol because “it tastes good”

Results

Participant Characteristics

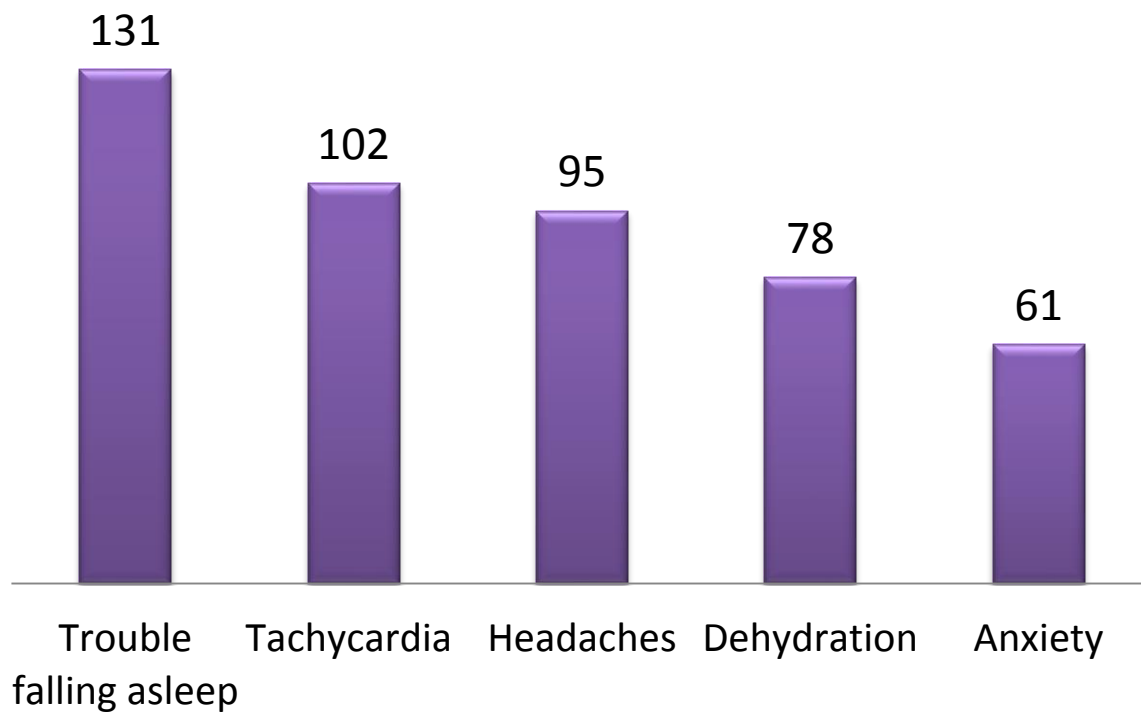
- n=283 ; mean age: 20 yrs
 - Male (n=115; 41%)
 - Female (n=166; 59%)
- Caucasian (n=192; 68%)
- Asian (21%)
- Hispanic/Latino (5%)
- African American (4%)
- Other (2%)
- Over 90% consume, with most consuming for >1 year

Top 10 Reasons College Students Choose to Drink Energy Drinks



Results

Top Side Effects Reported



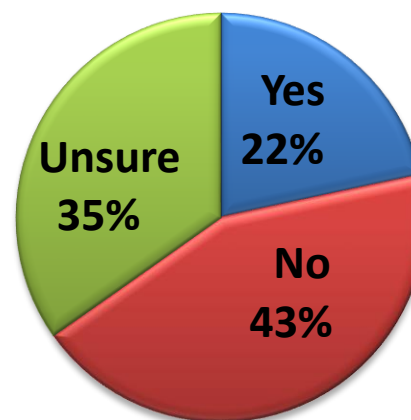
Reasons no longer consumed:

- 27% did not like the taste
- 21% upset stomach, nausea
- 21% products did not boost energy
- 21% too expensive
- 5% discontinued use because gained too much weight

Product labeling

Labels....	n (%)
Are hard to read	68 (25%)
Are hard to understand	27 (26%)
I don't read labels	106 (38%)
I follow label instructions	47 (18%)

I believe energy beverages are safe



Exploratory Factor Analysis

Rate to what extent your agree/disagree with these statements:

Attitude Items: Rotated Component #1

Drinking energy drinks helps me to lose weight	.798
Enhance my appearance, attractiveness	.785
Promote good health & nutrition	.766
Stimulate my metabolism	.721
An energy drink is a sports drink	.712
Help me relax	.701
Help me stay hydrated & quench thirst	.697
Help reduce stress	.656
Enhance athletic performance	.625
Enhance sexual performance	.595
An energy drink is a good hangover cure	.572
I get better grades if I drink energy drinks while studying	.562
An energy drink is a drink for any occasion	.557
Enhance my performance at work	.516
Are refreshing	.503
Energy drinks boost concentration and alertness	.302
Drinking too much (EBs) would not be good for you	-.379

Component Number	Eigenvalue from PCA	Criterion Value - Parallel Analysis	Decision
1	8.747	1.5619	Accept
2	2.547	1.4608	Accept
3	1.248	1.3958	Reject

The 2-component solution explained 55% of the variance, with Component 1 contributing 38%; and Component 2, 11% .

There was a positive correlation between the 2 components ($r = .38$).

Multiple Regression Results

- *Attitude* explained approximately 75% of the variance in intent to consume energy beverages.
- The beta values for each independent variable made a statistically significant unique contribution to the dependent variable, intent to consume energy beverages.

Regression Analysis Summary for Variables Predicting Intent to Consume Energy Beverages

$R^2 = .748$ (n= 282, p < .001)

	<u>Unstandardized</u>		<u>Standardized</u>		
Variable	B	Std. Error	β	t	p
Attitude	.759	.035	.790	21.451	.000
Perceived Behavioral Control	-.061	.030	-.066	-2.024	.044
Subjective Norms	.145	.036	.151	3.990	.000

Summary

- Over 90% of college students reported consuming energy beverages
- College students find energy beverage labels difficult to understand
- Health care providers discuss cigarette and alcohol use, but not energy beverage consumption
- Despite their popularity, the majority of respondents reported they believed energy beverages were unsafe, or were unsure as to their safety.

Limitations

- Self-reported data
- Convenience sample of college students; results are not necessarily generalizable to entire population
 - *Replicate findings in other populations, to larger and more diverse samples, in a variety of geographic areas*

Implications & Conclusions

- Clinicians : counsel college students on consumption when taking stimulant medications; assess for misunderstanding of label, product benefits.
- Attitudes, followed by subjective norms, are key factors influencing intent to consume energy beverages in these college students.
- Target interventions to mitigate underlying misconceptions (attitudes) related to risks & benefits to inform safe consumption practices

References

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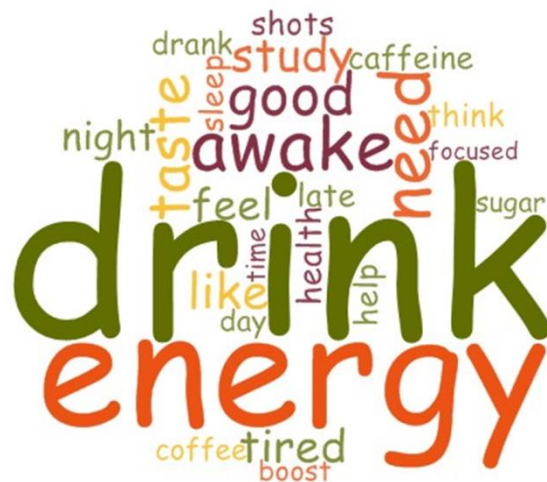
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Questions?



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