

FINAL PRESENTATION

QUANTITATIVE & QUALITATIVE METHODS

DONE BY

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THE IMPACT OF ENERGY DRINK ON PEOPLE'S HEALTH

Energy drinks (sometimes referred to as “stimulant drinks”) are caffeinated soft drinks that claim to boost performance and endurance. Considering that the consumption of such products has been associated with a number of very serious health complaints, it is considered necessary to develop a better understanding of their effects in the interests of public health.

OVERVIEW

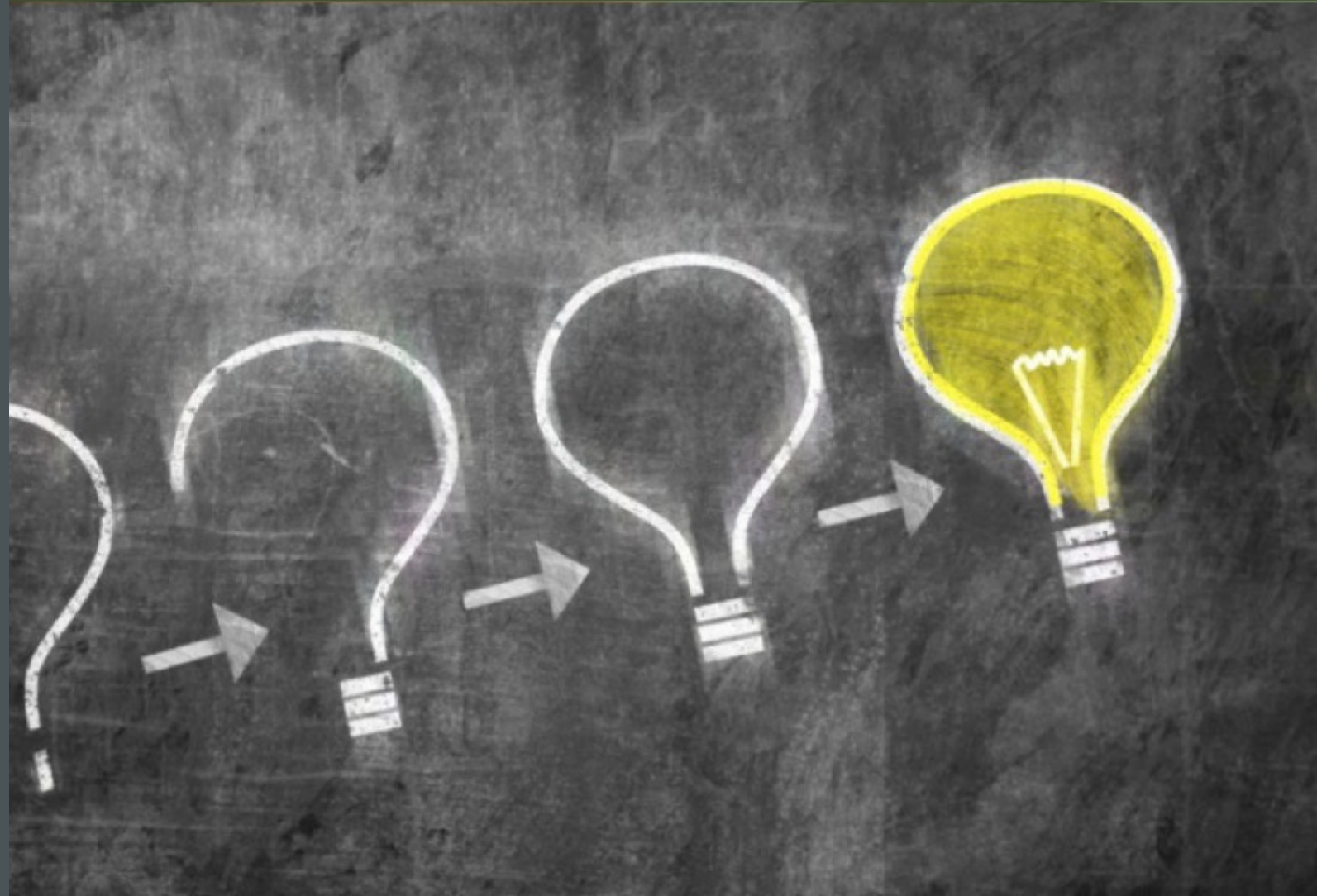
Topic: Implications of energy drinks on mental and physical health

The purpose of this work was to determine and provide an answer to our research question if energy drink consumption has a positive impact on people and how they affect their mental and physical health. These beverages have some known and discussed side effects by the medical society. Regarding their immediate health and long-term implications for diseases related to high blood pressure (due to the function of energy drinks in the body) . We started looking for an answer through means of surveys and forecasting how the information we seek to obtain will allow us to make an educated assumption on the matter and either accept or reject our hypothesis.

RESEARCH QUESTION

Research Question: To understand if energy drinks have a positive impact on people and how they affect their mental and physical health

The research question



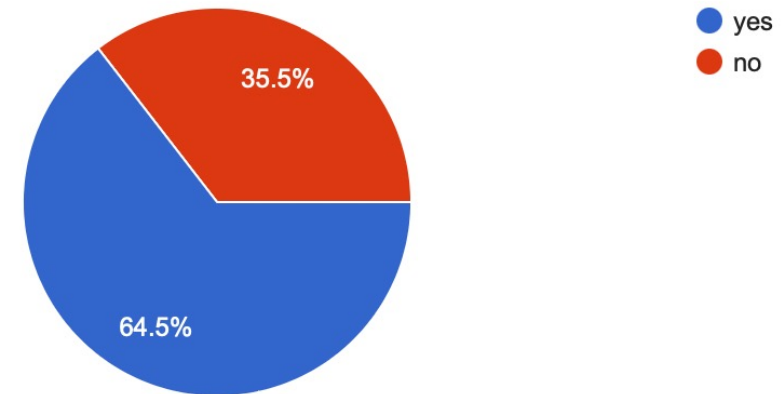
SURVEY MAIN QUESTIONS:

THOSE ARE THE MOST
IMPORTANT QUESTIONS THAT
HELPS US TO CONSIDER HOW
ENERGY DRINKS EFFECT ON
PEOPLE

As we can see most of participants have encountered with heart problems
consuming energy drinks

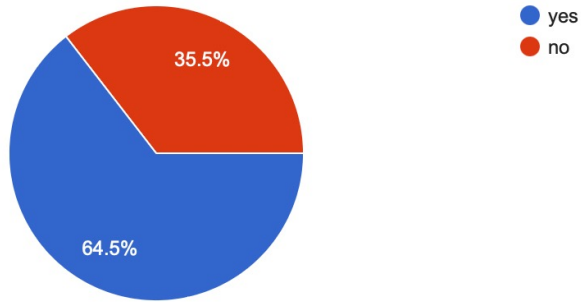
Have you ever experienced heart problems in the aftermath of consuming energy drinks?

31 responses



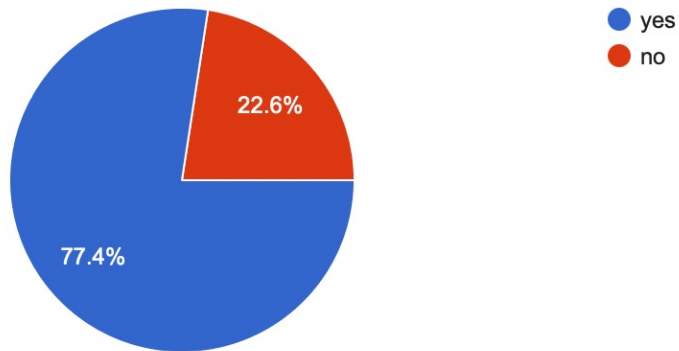
Does energy drinks make you more attentive considering educational procces?

31 responses



Do you drink energy drinks the night before an important event?

31 responses



Users believe, the consumption of energy drinks will enhance their performance, by physically increasing there blood pressure so their heart and brain can "function faster".Also is it prompt to iterate the factors such as promoted effects influence with the usage of these beverages for affecting their bodies positively.

STATING NULL & ALTERNATIVE HYPOTHESIS

- ENERGY DRINKS DO NOT HAVE A POSITIVE IMPACT ON PEOPLE

NULL HYPOTHESIS

- ENERGY DRINKS POSITIVELY AFFECT PEOPLE

Alternative HYPOTHESIS

TWO ANALYSIS TECHNIQUES

- We chose Anova and Z-test analysis and tried them on our database of data obtained from the survey.
- Our hypothesis is that "Energetics has a positive effect on people". In order to test our hypothesis we took the ANOVA method and conducted an analysis, which resulted in a value of Alternative Hypothesis, which meant that our hypothesis was correct.

Anova: Single Factor						
Summary						
Groups	Count	Sum	Average	Variance		
Positive	31	140	4.51613	1.2581		
Negative	31	99	3.19355	1.9613		
ANOVA						
Source of Variation	SS	df	MS	F	Значен	F Critic
Between Groups	27.11290323	1	27.1129	16.844	0.0001	4.001191
Within Groups	96.58064516	60	1.60968			
Total	123.6935484	61				

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TWO ANALYSIS TECHNIQUES

Next, we decided to try the z-test since the z-test is best used for samples greater than 30, because, according to the central limit theorem, as the number of samples increases, it is assumed that the samples are approximately normally distributed.

Influence	
Positive	Negative
6	3
6	4
5	4
4	3
4	3
5	3
5	6
4	3
4	4
4	1
6	4
3	3
5	1
2	4
6	3
4	2
6	1
5	1
3	2
6	4
4	4
4	4
6	3
6	4
3	5
4	1
3	5
4	1
4	5
5	5
4	3

Anova: Single Factor		Variance 1		1.26	
		Variance 2		1.96	
Summary					
Groups	Count	Sum	Average	Variance	
Positive	31	140	4.51613	1.2581	
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ANOVA					
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Total	123.6935484	61			

Z-Test		
	Positive	Negative
Mean	4.516129032	3.193548387
Known Variance	1.26	1.96
Observation	31	31
Hypothetical difference in averages	0	
z	1.000901217	
P(Z<=z) one tail	0.158437284	
z crit one tail	1.644853627	
P(Z<=z) two tail	0.316874568	
z crit two tail	1.959963985	

TWO ANALYSIS TECHNIQUES

Since our indicators were constructed in this way, we called the indicator Hybrid, that is, "Neutral", both ANOVA and Z-test were suitable for us. We can also do a t-test.

How positive is your attitude to energy drinks?	Positive	What quality of energy drinks do you prefer to buy?	Neutral	Have you ever experienced heart problems in the aftermath of consuming energy drinks?	Negative
1	4	1	4	0	1
1	4	1	4	0	0
1	4	1	3	0	0
1	3	1	3	0	1
1	4	1	2	0	1
1	4	1	3	0	1
1	4	0	1	0	0
1	2	1	4	1	1
0	2	0	2	1	2
1	2	1	4	1	3
1	4	0	3	0	1

3	4	0	3	0	1
1	5	1	4	1	3
0	5	0	5	1	5

G	H	I	O	P
How much money do you spend per month on energy?	Positive		Have you ever experienced heart problems in the aftermath of consuming energy drinks?	Negative
1	6		1	3
1	6		1	4
0	5		1	4
1	4		1	3
0	4		1	3
1	5		1	3
0	5		1	6
1	4		0	3

1	4		0	3
0	2		1	9
1	2		1	3
0	4		1	3
1	1		1	3

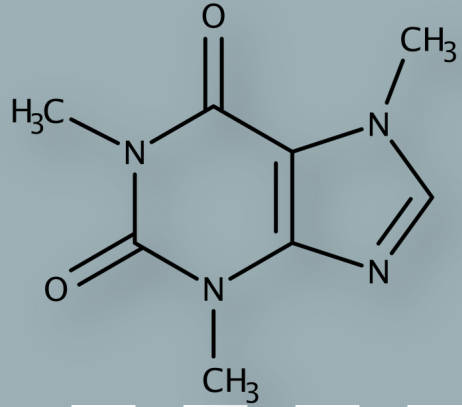
CLEANING DATA

- In our survey, we added 3 types of positive, neutral, and negative questions from the start.
- The answers to the questions were simple (Yes or No) but their value depended on the questions. For example: In the positive question the high value was 1, and in the negative question the high value was also 1 but with a negative influence meaning. So we were able to find the correct value for each of the 3 declensions by their values.

How well do you think you know about the effects of energy drinks on the human body?	How were you first introduced to energy drinks?	Do you presently consume or use energy drinks?	For what activities would you use energy drinks? (Select all that is applicable to you)	How positive is your attitude to energy drinks?	Do you drink energy drinks the night before an important event?	energy drinks, how likely would you be to recommend a friend or colleague to start consuming one? 1 is Very Unlikely to 10 Very Likely	When y about e drinks v BRAND that cor to your
ro I know about the rol Familiar	yes	Exercising	7 yes	7		7	
ro I don't know about t Advertisements	yes	Sports	7 yes	6		6	
ro I don't know about t Familiar	yes	Studying	7 yes	6		6	
ro I don't know about t Advertisements and acq	yes	Studying	7 yes	7		7	
ro I know about the rol Familiar	yes	Exercising	10 yes	10		10	
ro I know about the rol Advertisements and acq	yes	Sports	7 yes	3		3	
ro I don't know about t Advertisements	yes	Studying	10 yes	6		6	
ro I don't know about t Familiar	no	Studying	7 yes	6	Pepsi	6	

how you feel during an energy drink effect?	Does energy drinks make you more attentive considering educational procces?	Do you presently consume or use energy drinks?	How positive is your attitude to energy drinks?	Positive
1	1	1	1	4
1	1	1	1	
1	1	1	1	
1	0	1	1	
1	1	1	1	

How well do you think you know about the effects of energy drinks on the human body?	Do you drink energy drinks the night before an important event?	Have you ever felt anxious after drinking an energy drink?	Have you ever experienced heart problems in the aftermath of consuming energy drinks?	Negative	How much money	How often do you chase energy	What quality of energy drinks do you prefer to buy?	Neutral
1	0	0	0	1	1	1	1	4
1	0	0	0	0	0	1	1	4
3	0	0	0	0	0	1	1	3
3	0	0	1	0	1	1	1	3
3	0	0	0	0	1	1	1	2
2	1	0	0	0	1	1	1	3
3	1	0	0	0	1	1	1	3
1	0	0	0	0	0	0	0	1
4	0	0	0	1	1	1	1	4



CONCLUSION

At the end of our data analysis, the two methods of the analysis showed us that the hypothesis we were following was confirmed. This response pattern showed that most of the people who took the survey were more inclined that energy drinks are useful and have a positive effect on their lives. From this, we can conclude for commercial purposes that these people are most likely to continue to drink caffeinated drinks in the future in spite of the negative effects on health.



CAFFEINE AND MENTAL HEALTH

It is important to consider relationships between mental health and caffeine use, as the substance appears to be the main active ingredient in energy drinks((Friis et al. 2013))(1)

Although caffeine consumption is moderately associated with a number of psychiatric disorders, the relationships appear not to be causal, and discrepancies in the literature are common. Some studies have observed positive effects: for example, low doses have been shown to elevate mood.

ENERGY DRINK COMPANIES OFTEN MARKET THEIR PRODUCTS WITH CLAIMS OF BOOSTING PHYSIOLOGICAL FUNCTIONING, PROVIDING SHORT-TERM BOOSTS TO MOOD AND PERFORMANCE. A CURRENT REVIEW ARTICLE, AS WELL AS SEVERAL MORE RECENTLY PUBLISHED REPORT SUGGESTS THAT THERE MAY BE SOME EFFICACY TO THESE CLAIMS. FOR INSTANCE, DOUBLE-BLIND TRIALS HAVE SHOWN BENEFITS OF ENERGY DRINKS COMPARED TO PLACEBO IN RELATION TO WELL-BEING, VITALITY, AND SOCIAL EXTROVERTEDNESS, DEPRESSION AND ANXIETY, AND IN IMPROVING OR MAINTAINING MOOD UNDER FATIGUING OR COGNITIVELY DEMANDING TASKS.(RICHARDS AND SMITH 2016)(2)

POSITIVE EFFECTS

The positive aspects of consuming energy drinks are: elevation of mood and stimulation of mental activity; content of vitamin complex and glucose with rapid penetration into the blood. Participation in oxidative processes and providing energy to muscles brains and other vital organs; (Alsunni 2015) (3)

It is stated that EDs have such health benefits as *improving mental and physical stamina among both adults and adolescents*. They highlight that EDs consumption *improved muscle strength and endurance, performance on endurance exercise tests, jumping, and sport-specific actions*. (Al-Shaar et al. 2017)(4)



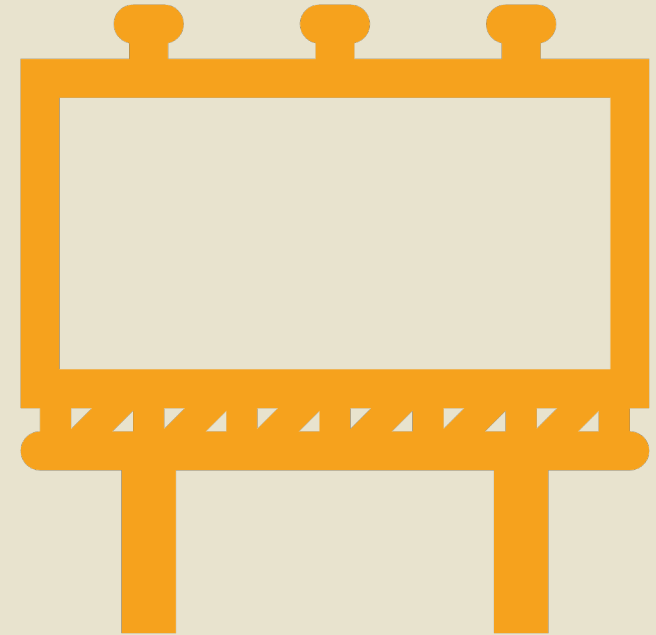
People consume energy drinks during various occasions but mostly while *partying and socialising with friends or family or taking exams*. Children's motives included taste, curiosity, friends drinking EDs, and parental approval or disapproval. (Claire Khouja, 2013)(5)



In the main body of the article the authors focus on the main reasons of long-term EDs consuming which are *to stay awake (31%), to be more alert (14%), and to help with concentration when studying (15%)* which is similar to other studies where 70% of students were consuming EDs for vitality and to be more alert (21%) (Lucy Fernandes, 2012)(6)



The research under analysis raises the burning issue of advertising EDs among young generation. The scholars state that *appealing advertisements, strong branding, and reputation appeared to be key environmental stimuli for ED consumption* aimed at younger people. (Malake Ghodzayel, 2020)(7)



The authors of the present report focus not only on advantages of EDs but also on their disadvantages such as *cardiovascular manifestations like tachycardia, elevated blood pressure, arrhythmias, electrocardiographic changes and myocardial ischemia*. On the nervous system, EDs *affect cognition, mental health and motor skills, and they may increase the risk adventures*. Prenatal consumption of EDs results in *increased locomotion, anxiety and irritability of the newly born infants*. Moreover, excessive ingestion of these drinks is associated with *blood changes, renal and gastrointestinal disorders, obesity and dental caries*.(Heshmat SW Haroun, 2019)(8)

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THANK YOU
FOR YOUR ATTENTION