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Research Critique #2

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### Section 1: Article's Purpose

Champlin, S. E., Pasch, K. E., & Perry, C. L. (2016). Is the consumption of energy drinks associated with academic achievement among college students? *Journal of Primary Prevention*, 37(4), 345-359. <http://dx.doi.org.liucat.lib.liu.edu/10.1007/s10935-016-0437-4> Retrieved from <http://0-search.proquest.com.liucat.lib.liu.edu/docview/1801563226?accountid=12142>

The study <sup>attempted</sup> at hand ~~(aimed)~~ to determine if energy drink consumption was associated with academic achievement among first-year undergraduate students. While there has been an <sup>abundance</sup> (abundant) of research conducted on caffeine's effect on topics such as sleep or GPA scores in college students, there is little known about how energy drinks specifically are associated with academic achievement ~~in~~ college students. The researchers of this study have done a comprehensive amount of research on related variables on the impacts of energy drinks on the human body, caffeine, and relationship between caffeine and cognitive functioning, yet still emerged with very little pertaining information in the topic of study <sup>this</sup> ~~at hand~~. The <sup>impetus</sup> (drive) to conduct this study is ~~of utmost importance~~ <sup>crucial</sup> to not only add to the theoretical and research field, but also serve a bigger purpose in the health and well-being of college students. The researchers are specifically focusing on first-year undergraduate students, which <sup>is</sup> a very vulnerable population <sup>that want to determine</sup> for a variety of reasons. This study could set the <sup>foundation</sup> (footing) for future studies ~~that aim to do a long-~~ <sup>the</sup>

term effect on energy drink consumption and its relation to academic performance. The researchers for this study do not specifically identify their hypothesis for this study, but it is implied throughout the introduction that the consumption of energy drinks may have negative influence on academic performance in first-year undergraduate students.

Shows  
if you  
on  
academic  
performance

**Section 2: Review of Methodology**

The participants for this study were first-year undergraduate students that were enrolled in a large, southwestern US university. The participants who completed the university's standard alcohol education program during the orientation met eligibility requirements for this study. Originally there were (n= 5751) participants eligible for the study, with a total of 844 freshman actually completing the survey. This yielded a 14.7% response rate. The participants were comprised of 58% female and 51% non-Hispanic White, 20% Hispanic, 3% non-Hispanic Black, 21% Asian American/ Pacific Islander, and <1.0% American Indian/ Alaskan native and 5% Other race/ethnicity. The online survey was administered between April and June 2010, toward the end of the student's freshman year. The self-report survey included the demographic information and self-reported measure of many health behaviors. Prior to starting the survey, the students were <sup>provided</sup> (promoted) with a consent form that described the purpose of the study and informed the participants that any information provided would remain confidential. The researchers gained approval to complete this study by the Institutional Review Board at The University of Texas at Austin.

Do you  
drink  
this  
affects  
academic  
performance

The current study at hand the independent variable is energy drinks. This is a grouping variable, for the researchers are not instructing the students to drink/ not drink the beverages, instead there are measuring past use and frequency of consumption. Under the independent variable the researchers implemented controlling variables to better control any confounding

Every research organization  
must have one in place  
of safety  
concern

variables in this study. The researchers controlled for gender, race, weekend and weekly sleep duration, perceived stress, perceived stress management, media use, and past month alcohol use. The dependent variable in this study is the GPA scores of first-year undergraduate students. The main objective of the study was to show if there was a relationship between the amount/frequency of energy drink consumption on the GPA scores. In order to study the consumption and frequency of energy drink consumption the researchers only included full-size energy drinks. In order to measure the frequency of energy drink consumption, the participants were asked to self-report their past month energy drink consumption. The categories ranged from not consuming energy drinks at all, and then on a carrying scale from 0, 1-2, 3-5, 6-9 and so on for the remaining days of the month. The variable was recorded using the midpoint number of days in each category in order to reflect the number of days in the past month they were consumed. The second evaluation method for energy drinks was the intensity of consumption which included two questions. The first one measured Usual Energy Drink Consumption, and asked when they do consume energy drinks, how many do they ingest in that one sitting. Options of response included, I don't drink, 1, 2, 3, 4 and 5 or more drinks. In order to determine the amount of energy drinks consumed during a month, the researchers coded to reflect the number of drinks consumed.

*Handwritten note:* Good background

*Handwritten note:* OK a fair descriptive statistic to change

*Handwritten note:* variables

There were additional aspects measured additionally in this study. The researchers included an alcohol use measure that was in the form of a self-report survey that assessed past month alcohol use. The participants selected the type of alcohol consumed and the number of days these drinks were consumed. The researchers included this variable as a covariate due to the prior association energy drinks has with alcohol consumption and dependency. There was also a sleep duration measure which was presented in the form of drop-down menu asking the

*Handwritten note:* Alcohol consumption measure

participants the time they woke up and went to bed throughout the days of the week. The typical sleep duration was calculated by using the gathered values for weekday and weekend sleep by dividing them into three cells, and then calculating the difference between bed and wake times. The researchers explain the weekday and weekend sleep duration were controlled for when examining the association between energy drink consumption and GPA, due to the negative association between energy drink consumption and nighttime sleep duration. The researcher's previous research also indicted that there was a positive association between sleep duration and overall academic performance. they felt due to these relationships, that it was important to include typical sleep duration as a covariate. The following measure was in regards to the perceived stress measure which used a 1-10 scale. It was used to measure the perceived level of stress over the past 30 days. This was also used as a covariate in this study due to prior research indicating higher stress levels are positively correlated with increased energy drink consumption. Another instrument utilized by the researchers was the perceived stress management measure, which was done by asking the students to indicate their ability to manage stress in the past 30 days. The data was scored where 1 was totally ineffective and 10 was entirely effective. The researchers explained this was a continuous measure for it has been in previous research. The final covariate measure was in regards to media use. The researchers felt that it was important to control and measure this aspect of the study due to previous research indicating there is a positive association between media exposure and consumption of caffeinated products. They also gathered that this association caused a decreased academic achievement in youth, so they wanted to discover if the same principle applied for college students.

How  
control  
sleeping

Stress  
management  
level  
but can  
measure  
energy  
level

Looks like a  
really thoughtful  
research methodology

Inferred

Section 3: Identify the Research Methods Used

This study can be described as correlational study, for the researchers are investigating the relationship between the consumption of energy drinks and current GPA among first year college students. The initial inclination that this study ~~at hand~~ was correlational is the word "associated" in the title of the study. The researchers are not looking at what degree energy drinks effect academic performance, rather the association, or relationship between the two factors. The researchers also clearly state that they are explored the relationship between freshman undergraduate student's energy drink consumption and academic performance. this is also an example of a quantitative study, for all of the data collected was in numerical value. The surveys distributed were all coded with numerical values in order to compute overall data analysis. For example, there was numerical data gathered in terms of the GPA scores, and the frequency and intensity of energy drink consumption. The numerical values were then able to be computed in an SPSS to analyze. There is no open-ended portion of the study, which in turn eliminates the option of the study being of mixed or qualitative nature. The study can also be categorized as descriptive. The descriptive qualities can be seen in the administration of various surveys completed by the participants. It also is assessing multiple variables at the present time and is reporting on the current status. Finally, the study can also as cross sectional. The researchers are analyzing a set of data collected once over a (diverse) population. they are measuring the possible relationship between energy drink consumption and academic performance in undergraduate freshman from one university.

#### Section 4: Review Data Analysis

The results computed and analyzed by the researchers in this study are broad and have been thoroughly assessed. They found that in the past month, 37.7% of the students consumed an energy drink on at least one of the reported days. about 58% of the students drank one energy



management, and daily media use. In the following adjusted model (B), due to the fact energy drink consumption was uniquely associated with risky behaviors such as alcohol use and dependency, the researchers examined additional models controlling for the factors explained in adjusted models (A) as well as the past month of alcohol use. It was found that the quantity of energy drinks consumed on the last occasion of consumption was also significantly and inversely linked with GPA. Yet, once the new analysis was put into place in this model, there was no longer a significance between energy drink consumption quantity by frequency with GPA once alcohol was introduced into the model. In terms of p values, they found that the past month energy drink consumption quantity by frequency ( $p < 0.001$ ), and energy drinks consumed during the last occasion ( $p < 0.001$ ), were linked with lower GPA. It was also computed that energy drinks during the last occasion of consumption was  $p = 0.01$  which was statistically significant. It appears that the hypothesis proposed by the researchers was accepted, for even when controlling for possible confounding variables, there is still a significant relationship between greater energy drink consumption and lower GPA scores.

### Section 5: Review of Discussion and Conclusion

Overall the discussion portion of this study provides a comprehensive presentation of not only the results gathered in this study, but prior research as well. While the main aspect of this study was to determine if there was a relation between energy drink consumption and academic achievement in first year college students, it also took other variables into account. The researchers made it a point to integrate the other covariates into the discussion section, outlining the influence they had in the study and in regards to prior findings. The researchers explained that the results from this study show reason to believe that those who drink more energy drinks, have lower GPA scores. This contribution to previous research is extremely important for, the

researchers note that prior research highlights that many students believe that using energy drinks will facilitate their studying and work. The researchers tied these aspects together, for there seems to be a dissonance between the perceived effects of energy drinks and their actual implications or associations with academic performance. in regards to this specific example, the researchers did cite a study from 2007 to support this notion. The conclusions the researchers describe the numerical findings in the results section in a very comprehensible manner. The discussion section explains the reasoning for the researcher's choice to control the possible confounding variables. It was in the best interest of the study to control any intervening variables from skewing the results and to obtain a more accurate conclusion. For example, it was important to separate and control the models of analysis, for when the new analysis was put into place for the adjusted model (A) there was no longer a significance between energy drink consumption quantity by frequency with GPA once alcohol was introduced into the model. The actions of the researcher to control the previously stated covariates and separate the models for analysis elicited an accurate result for the original research question.

accuracy

100%  
 this is a  
 stressor  
 especially  
 during

While the results and basis for this study contribute and help further research, it would be beneficial to expand the nature of the study to improve the overall quality. One suggestion that future research should take in this area would be to replicate the study in perhaps a northeastern university that is in a more urban area. It is possible that students for example in the New York City area may consume even more energy drinks in order to stay on the fast pace many New Yorker's live by. It may also be beneficial to complete this study in a longitudinal setting, following first year students until they graduate. I also believe that researchers should also evaluate other forms of caffeine that are being consumed that could skew the results. By

Good suggestion

another good suggestion

Still another good suggestion

and Soda & Colas

measuring not only energy drinks, but also coffee or tea as well, it could be possible that caffeine is having this adverse effect on GPA, not just energy drinks in particular.

Alcohol  
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Coffeine  
is the  
key  
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of all  
of those  
drinks

The research conducted in this study is extremely relevant to the current trends in the field of mental health. While this study specially looks at the relation between energy drink consumption and GPA scores in college students, the discussion expands on the idea to explain the detrimental effects it can have on the human body and lifespan. The researchers explain that it is very worrisome that most college students turn to energy drinks when they are in need to get school work done or study for exams, for there is an overwhelming amount of research that shows this could be hurting their GPA in the long run. They explain that the findings have the most implications for post-secondary educational settings in particular. It is suggested that the use of energy drinks for the purpose of driving academic achievement could reflect underlying lack of academic achievement skills such as time management and planning capacities. It is

yes,  
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why we  
conduct  
research

Good point

important to recognize if this is actually occurring in college students, for mental health counselors will be confronting <sup>the resulting issues</sup> ~~the fallout~~ if the student does not learn the correct ways to manage stress and a large work load. The researchers made a clear, rational explanation and proposal for the need to expand on this study. They explain their concern for young-adult's capacity to handle the stress without turning to energy drinks, but also the negative health effects an excessive amount of energy drinks can have on the body. The researchers suggest that future health programs are needed that seek to learn what students do and do not know about energy drinks and the methods for decreasing the overall consumption of these products. while the researchers do not clearly state the possible cognitive and emotional effects the consumption of energy drinks has, it is highlighted how at risk this population is. As mental health counselors, it

Keep  
summing  
up

Education  
&  
Awareness  
as  
necessary  
always

is going to be of utmost importance to be equipped with the tools to help this population with the effects the consumption of energy drinks can have on the many areas of one's life. *Yes,*

*research strengthens our practice skills.*

### Section 6: Review of Strengths and Weaknesses

While the study at hand contributes to the current literature and highlights a vulnerable population in which primary prevention could prove to be beneficial, the study does have some apparent weaknesses. It is important to note that the researchers attempted to control extraneous variables that would inhibit the results of the study. The researchers made a specific note that they controlled for gender, race, weekend and weekly sleep duration, perceived stress, perceived stress management, media use, and past month alcohol use. It was excellent that they attempted to control these variables through individual tests and measurements, for it is clear as to how they could influence the overall findings. The researchers do highlight a weakness that could be ameliorated, the mixing of alcohol and energy drinks among college students. While it is noteworthy of the many variables controlled, the researchers failed to control or mention the other caffeinated or sugary products that have been shown to have a negative influence on academic performance.

*Well  
Anticancer*

Another limitation of this study is the lack of random sampling. The participants for this study were self-selected to be in this study, and there is reason to believe that higher-achieving students may have been more likely to participate in the study. It is also important to note that due to the correlational nature of the study, there could not be any casual information in regard to the effect of energy drinks on academic performance. There is also no way to determine if there were students who are naturally low achieving in the academic sense and turn to energy drinks to help them stay awake or focused. It is also important to note the low response rate of the study in

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regards to the initial sample size before the exclusion criteria. In terms of the questionnaires themselves, it can be difficult to yield consistent and accurate results from self-report questionnaires or surveys due to the fact what one perceives is not always indicative of what actually occurs. Despite the limitations in regard to the sample size and selection process, it is strength that the researchers did not pay or offer any incentives to the participants of this study. The ulterior motives could have an adverse effect in a study, for they are more likely to self-report in a way that will benefit the researcher who is paying them.

*Just always  
Amethyst  
that  
needs  
conclusion*

Section 7: Assignment Usefulness

*Research relevance is important*

The research topic at hand is one that is very relatable to what is currently unfolding in society. The use of energy drinks in college students is not an act that seems to be slowing down any time soon. There is value in this research because it continues to support previous findings that show a significant relationship that exists between energy drink consumption and academic performance. There is reason to believe that the findings and suggestions of this study could ultimately have a greater effect on the long-term mental stability and wellness of young adults. It can be inferred that if the students who consume a considerable amount of energy drinks perform poorly in school, they could have difficulty getting a job, which in turn could lead to strain on one's mental well-being.

*diminishing  
examination*

This study provided a great opportunity in practicing how to effectively review and critique a research article. Often times a catchy title could lead the reader to believe the results are not what they rally appear to be. Also, it is crucial to be aware for any confounding variables or limitations throughout the study that would make the results inviable in other settings or with a different population. It is extremely important to have an in-depth understanding of the methodology and results section of a research article, for this is the section

*of  
concern*

*Over  
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that one should be able to operate from when considering the researcher's explanation in the discussion and implication section.

~~Another~~ superior job in all aspects of the assignment. You have an unusually intuitive feel for research and this paper once again illustrates the strength of your ability in this area.

$$\begin{array}{r} 15/15 \\ + 6 \times a \\ \hline 21 \end{array}$$