Caffeine and its Effect on College Students

Caffeine has become a staple part of many people’s daily diet. Caffeine is found in many foods and drinks and is the mostly widely consumed psychoactive drugged in use today (Lazev MacKenzie, Norton, Sullivan 2011). With so many people hooked on caffeine it is no wonder that so many college students today claim that they need caffeine to make it through their college career. With a majority of the population addicted to caffeine it is important to see if caffeine has a positive or negative influence on college student’s academic performance.

When one looks at caffeine and its effect on college students, we have to understand how caffeine itself works. Caffeine is a substance found in soda, energy drinks, and coffee. People will have a caffeinated beverage to give them extra energy to get through the day (Landrum, Shohet 2001). Whether that is a cup of coffee or an energy drink in the morning to a soda in the afternoon, they drink these beverages to help them get through their day (Lazev MacKenzie, Norton, Sullivan 2011). For college students caffeine is a substance that is typically used late at night to get through homework that has been assigned to them. After a while of continuously drinking caffeinated drinks people will tend to become addicted to these drinks (Griffiths, Reissiga, Straina, 2009). When people become addicted to something whether it be caffeine or hard drugs, the user must continue to use the drug or up the dose of the drug to get the same effect that they did before. When students are addicted to caffeine and are taking in large amounts of the drug the results tend to be negative. For example; when large amounts of caffeine are taken into the body anxiety levels tend to rise in the user. Higher levels of anxiety tend to rise in the user whenever high doses of caffeine are taken into the body, as well when the user is going through caffeine withdraws as well (Julia, Sawyer Turin 1982). Adding to the withdraw
symptoms is fatigue and irritability that set in 12-24 hours after the class caffeinated beverage is consumed. So many students will continue to consume large amounts of caffeine whether that be through energy drinks, soda or coffee simply to avoid the withdraw symptoms. Caffeine addiction is something that is not restricted to just college students. Many people in American and around the world suffer from caffeine addiction, so now looking at the effects caffeine has on the body we need to see how that effects college performance, either in a positive or negative way.

When it comes to college academic performance their mindset is everything. Whether it is doing homework or studying for a test, if a student is not in the right mind set then they will not perform their best. This is why that studies have shown that higher anxiety rates among students who consume large amounts of caffeine will cause them to perform worse than they would have if they would have taken a smaller amount or none at all (Dodda, Greenberg, Lewisa 1999). It also appears that higher amounts of caffeine intake can increase depression in users which in turn leads to poorer academic performance (Andress, Gilliland, Dara Kirby 1981). Another issue that college students are facing with caffeine is the growing trend of mixing caffeinated beverages, the most common caffeinated beverage to mix with alcohol are energy drinks. When caffeinated drinks are mixed with alcoholic beverages the consumer get more energy and alertness to continue to party more which in turn can lead to an increase in driving under the influence as well as spending more time partying instead of studying (Aeby, Aeby, Heidal, Malinauskas, Ovrton 2007). Another concern about caffeine consumption is the boost and crash cycle that it caffeinated beverages bring with them. According to Aeby, Aeby, Heidal, Malinauskas, and Ovrton (2007) with the constant jolt and crash episodes consumers of caffeine
are more likely to consume more caffeine to avoid the crash cycle. However, when the caffeine does happen it will cause the user to crash in the form of tiredness and fatigue, which in turn can harm academic performance for the student. A significant factor that comes into play for college student success is the amount of sleep per night. In a study that compared sleep patterns between those who used heavy amounts of caffeine to those who had little to no caffeine, it was found that those users who consumed a heavy amount of caffeine got about 75% as much sleep as the users who consumed little to no caffeine (Cheers, Hicks, Hicks, Reyes 1983). This in turn creates a cycle of the student not getting a good night’s sleep so, to counter this, student’s will buy energy drinks or coffee, to stay awake and to perform better while in school. Which just encourages caffeine addiction and in the long run will damage a student’s academic performance (Attila, cakir 2011). All of these studies which identify the negative effects of caffeine are just one side of the story. There are also studies that show the positive benefits that caffeine can bring to college students to boost performance.

Most of the arguments against caffeine consumption is mostly for large amounts of caffeine. In moderate amounts studies have shown that caffeine actually has many health benefits. According to Nicole Olsen (2013) “Studies have shown it (caffeine) can help relieve pain, thwart migraine headaches, reduce asthma symptoms, and elevate mood.” She goes on to say that people who drink coffee regularly are less likely to contract diseases such as diabetes and Parkinson’s. While it is true that drinking coffee increases blood pressure and increased urine output these effects are only temporary and do not last very long. There has also never been a true caffeine overdose, most people will stop drinking coffee or any other caffeinated beverage when they start to get jitters from too much caffeine. There have been incidences when people
have had a fatal overdose of caffeine, but that was only when a large amount of caffeine pills were taken, when the consumer was not acting responsible (Reid n.d.). In regards to student performance, caffeine in moderate amounts (2-3 cups) acts as a mental stimulant. It has been shown in studies that caffeine “increases alertness, cognition, and reaction speed.” (Olsen 2013) All of which help students when doing homework or studying for exams. Regular caffeine consumption, and especially coffee consumption in moderate amounts has been shown to lead to an increase in focus and cognitive functions for the consumer. The only drawback it would seem with the regular intake of caffeine is that it can lead to caffeine addiction. If caffeine is continued to be consumed by the student then they will not suffer the withdraw effects, but should they stop drinking coffee then the withdraw effects can lead to short-term memory issues as well as slight mood swings, and the common feelings of fatigue that go along with caffeine withdraw (Smith 2002). Caffeine has been shown to boost levels of extroversion in consumers, the added caffeine in their systems gives them extra energy to accomplish more tasks which is why a lot of students will use it as a sleep substitute when doing school work. While under the effects of caffeine, the student is able to get more work accomplished because of their more alerted and focused mind set (Caic, Drummond, Kanadya, Mednicka 2008). Students tend to perform better when they are in a better mood and have a positive outlook on their school work. When consumed in moderate doses caffeine has been shown to improve the mood of the consumer. The reason behind this is that generally when energy levels are boosted people tend to be in a better mood. When people or in this case students are in a better mood they are more inclined to retain information whether that be in class or while studying (Ruxton, 2008). It seems that there are numerous benefits for students who consume moderate amounts of coffee on a regular basis. From heightened
alertness, better moods, and a greater ability to focus and even improved reaction time (Dernoncourta, Rogers 2003).

It seems that caffeine intake would be perfect for students to use because of the benefits that it brings. However, with the risk of caffeine addiction a very real concern and for the withdraw symptoms that happen if a person tries to quite caffeine, the question still remains does caffeine have a positive effect on college student performance? We can see from the research done before that certainly caffeine does have effects on the human body. Some good, some not so good, but there has not been very much concrete research done to see if the level of caffeine intake correlates to higher grades for college students.

**The Survey**

From the literature review it seems that there are certain advantages and disadvantages to drinking caffeine. However, none of the research that has been done so far says anything about college student performance. In order to take a proper look into how caffeine effects the academic life of college students the primary research will be a deductive approach. The survey that will be done is going to be random survey data collected from students at Western Carolina University.

From the research the conclusion that I am hypothesizing that, in moderate use caffeine will increase college student’s academic performance. If a student goes above a moderate amount of caffeine the student’s academic performance will not be affected on a positive basis. Before we can even get to the survey we need to define what a moderate amount of caffeine is. For the purpose of this survey it will be limited to caffeine intake through coffee. The reason for
this is because caffeine is found in a variety of different foods and beverages from coffee, soda, energy drinks, tea, etc. According to the Mayo Clinic the average cup of brewed coffee has anywhere from 95-200 mg of caffeine per cup. If someone is consumed 500 mg or more caffeine a day then they might want to consider cutting back on their caffeine intake. My theory is that if student’s intake a moderate amount of coffee that the caffeine in the coffee will lead to increased academic performance. From the literature review the research tends to agree that in moderate amounts, caffeine has positive benefits on consumers. With “elevated moods” and “increased alertness, cognition and reaction speed.” I believe that these benefits will correlate to increases in academic performance for college students. However, if a student intakes too much caffeine the results will most likely not be positive. Too much caffeine tends to lead to negative effects as stated in the literature review. For example, increased anxiety, headaches from caffeine withdrawal and increased depression will correlate to decreased academic performance. Combined with good study and sleep habits I believe the survey data will show that students who drink 1 to 3 cups of coffee will show higher academic performance than someone who either does not drink any coffee at all or someone who drinks too much coffee. The reason that coffee is going to be beverage to look at is because it is the most consumed caffeinated beverage for people, this will make the data easier to compile and compare. Now that the foundation has been laid the next step in the primary research is creating the random survey, administering, and collecting the results of the survey. After that has all been done it is my theory that the research should prove that moderate caffeine consumption will increase college student’s performance.

The Survey will be administered online for a period of four years. The reason for this is so we can track the progress of students from the time they enter college to the time they leave.
Some students may be coming into college coffee drinkers, while other students may pick up drinking coffee after they enter a semester or so after entering college. We will survey a random group of college freshman coming in for the 2015 school year, then twice per semester survey their coffee drinking to their academic performance. Looking at the different variables for this research the dependent variable will be the students’ academic performance. It is our hypothesis that with moderate caffeine consumption the student’s academic performance will increase. The independent variable will be caffeine levels. The hypothesis is that moderate caffeine levels (95-200 mg) will increase student’s academic performance so therefor the level of caffeine consumed is going to be the deciding factor of how well a student’s college performance. Recognizing the various aspects of the experiment that will need to be controlled for is important for a research project such as this. Anytime someone tries to measure academic performance whether it is middle school, high school and higher education, there are always going to be outside factors to student performance. Aspects that will be controlled for are; hours studied per week, hours slept, alcohol consumed and class attendance. All these will need to be controlled for to make sure the research data is properly analyzed when the survey is done.

The reason for the controls is that the regardless of caffeine levels consumed by students, grades will be impacted by the amount of time spent in the classroom and the amount of time spent studying. When the research data is compiled I believe that the data will show that students who spend 10-15 hours a week studying outside of the classroom, and consume 1-3 cups of coffee a day will show better academic performance than those who do not spend as much time studying and do not drink coffee or drink too much. The other control factor is alcohol consumption. While drinking alcohol will not hinder academic progress it is worth controlling
for because if a student drinks a lot of alcohol then they are probably social drinkers and the time spent drinker with friends or alone is time they are not spending studying and being productive academically. Alcohol may not have a huge impact on academic performance it is noteworthy because college is a time that many students are away from home for the first time. They don’t have their parents making them do homework and checking up on them to see if their doing what their supposed to be doing. Some students can’t handle their new found freedom when first coming to college and therefore grades will suffer because of time spent drinking with friends or going to parties.

The actual survey will be up for four years and in they time students will be asked to give information on average how much coffee they drink, how many hours a week do they spend studying, how many hours per night do they sleep , and how many nights are they partying. Whenever someone is collecting survey data it is important to be weary of the truthfulness of the data which is something to be controlled for. Although with random online survey data people will, I believe, be more honest because of the level of anonymity they have. I also believe that the survey will have a high response rate because college culture seems to have a fascination with coffee, and it is considered strange for college students not to partake in coffee. With this in mind I believe that the survey will have a high response rate and with that the data will be more accurate. The survey will focus on large amounts of students as compared to individuals because the problem with tracking individual students they may leave the school or decide to transfer school, or decide to no longer participate in the survey at any moment because we cannot make students participate. With that in mind surveying many students online each year will bring us the best data. The survey will however keep up with the students as they go to different grade
levels. For example, the first year the survey will gather data from freshman, the second year the survey will gather data from sophomores, the third year will be juniors and the final year will be seniors. This way we can see if students, as they progress through college increase, decrease or stay the same with their coffee intake. The control factor for that will be students who transfer in or leave before they graduate.

After all the data has been compiled I believe the survey data will show that, combined with good study habits that moderate consumption of caffeine. The survey is important to find out whether or not caffeine has a positive correlation in academic performance. If the survey data comes out in agreement with my hypothesis then it is important because then students should be encouraged to drink more coffee. However, if it is found that the results of the survey find my hypothesis false then students should be encouraged to cut back on caffeine consumption. The overall importance of this survey is to try and improve students’ academic performance. Caffeine plays a big role in life of many college students so it is important to know whether or not caffeine is beneficial for college students or not. Caffeine intake is not the deciding factor when it comes to college performance. Students should be spending time outside of the classroom studying and preparing for their classes. With caffeine being the most consumed drug for Americans it’s important to know how to effects college students so they can be aware if consuming caffeine will help or hurt them. While there has already been research done about the effects of caffeine on people in general this research will help students to see how caffeine can affect their college career.

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