Caffeine and Its Perceived Effect on Tertiary Students Reading and Comprehension Tendency

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ABSTRACT

This study examined the use of caffeine and its effects on reading and comprehension tendency of the students of University of Benin, The main objective of the study was to unravel the perceived effects of caffeine use on student's academics. The study adopted the survey design. The population comprised of four thousand (4000) students in 300 level students of the faculty of education, University of Benin. Five hundred (500) students were used for the study. The instrument used for the study was a questionnaire. The face and content validity was done by the researchers and two other experts in measurement and evaluation in the University. The Cronbach alpha was used to test for the reliability of the instrument. The reliability index gave an alpha value of 0.84 which is an acceptable reliability. The questionnaire were distributed by the researcher assisted by four research assistants. Data collected were analyzed using percentage and ranking. The findings therefore revealed that, though caffeine helps to improve the students' academics, its side effect on the students' health is enormous. Laziness was identified as the major side effects, sleep disorder/ insomnia, anxiety and increase in heart beats were also identified as other side effects. It was concluded that though intake of caffeine by students enhances their reading and comprehension tendency, the side effects on them are enormous. Based on the findings, it was recommended among others that sensitization programmes should be made available for all and sundry especially in all the tertiary institution across the nation in other to educate all about the negative effects of unregulated intake of caffeine. And also that effort should be made by the government to ensure factories and companies producing caffeinated drinks and substance are monitored and regulated.

Key Words: Caffeine, Substance, Academic.

INTRODUCTION

Caffeine is a proactive substance that acts on the central nervous system and regulates the mood of the individual (Adams, 2008). Berg (2005) describes it as one of the world's most consumed substance. Apart from being legal and non-regulated in most parts of the world, it is also found in some consumables such as: beverages, energy drink, kola nut and coca-cola. This made it easily accessible and affordable to all individuals, including students of tertiary institutions. Scientific report has showed that intake of caffeinated drinks and kola- nuts is perceived to enhance speed in task accomplishment. As a result students consume the caffeinated substance because it stimulates their energy to read and comprehend. Corroborating this fact, Berg's study also confirmed that,

Caffeine seems to be one of the major stimulants commonly used by some students to facilitate their academics. The research conducted by the Drug Information Center (2009) and World Health Organization report (2002), claimed that caffeinated drinks have not only become a major stimulant to boost tertiary students' reading and comprehension , most students' have now become addicted to it. This calls for great worry because, according to Manus (1989), the high incidence of caffeine use has proved significant; as it has a wide range of adverse effects on individual wellbeing. Such as: mood change, blood pressure, bone loss, unbalanced rest, sleep disorder and anxiety. According to him, those who were very sensitive to caffeine, even a small amount could cause a variety of adverse effects such as insomnia, headaches, irritability, restlessness, hallucinations, nervousness, and increased urination. Aside that, it does not only inhibit absorption of iron and calcium, it causes dehydration, constriction of blood vessels and poor blood circulation.

Adam (2008) argued that, the consumption of large quantity of caffeine or caffeinated drinks may result in stomach ulcer, and might also result to brain wave. Peterson (2000) opined that long use of caffeine may result in a state of anxiety and depression in female and because sleep is disrupted, stress becomes inevitable which may lead to severe brain problem. One wonders why students till consume it, in spite of its adverse effect on the body. Does caffeine actually enhanced reading and comprehension tendency of students? Could this be why students still consume it, in spite of the adverse effects on human's health? There is a need to determine the significant effects of caffeinated drinks and kola nut on students' reading and comprehension rate. Some researchers opined that, the academic work load in tertiary institution has precipitated students to be dependent on caffeine for extra strength. According to Mednick (2008), tertiary institution students tend to consume caffeinated substance in other to be alert when they need energy for study or any other thing else.

Additionally, Reissig (2009) is also of the view that the consumption of caffeine by students increase alertness, it make them focus while they study. Caffeine consumption causes feeling of mental alertness, because it works in the brain thus providing mental clarity which promotes comprehension. Also Meredith, (2010) opined that caffeine is perceived as helping students concentrate while reading and also facilitate memory and motor skills. According to him, students who consume caffeine tend to show greater concentration and alertness in class than those who do not consume. The study further added that the intake of caffeine maximize students' reading culture. Could this be the reason why students take caffeine? History claimed that caffeine was first consumed as a medicinal nutrient, because of its stimulatory effects on digestion. Peterson (2000) is of the opinion that student's uses caffeine because of its stimulatory effect. Medically, it is opined that Caffeine alters mood, students feel energetic, imaginative, efficient, self-confident, and alert, after the intake of caffeine. That is why Peterson (2000) asserted that caffeine may be profitable in managing attention deficit disorder. Silverman (1994) is of the opinion that students consume caffeine because of the academic work load of tertiary education. That is as a result of increase in workloads students are tempted to take substance that contains caffeine, such as kola nut, energy drinks and beverages. Could this be the same reason why students of the University of Benin consume substance like kola nut and energy drink that contain caffeine? Does caffeine

actually increase alertness and reduces stress or does it change the users' mood and mental state? This students' behavior tend to stair up worries.

Evidence shows that students in today's world have become greatly dependent on substance use for greater stride in their various life endeavors more importantly on academics. Records have it that Nigeria produces a large quantity of coffee of about 2,100 tons annually. The people that constitute the higher population of the consumers are mainly students of tertiary institution of learning (Quartz Africa, 2016). Similarly, Marie (2014) stated that caffeine is the most consumed psychoactive substance especially among students in the tertiary institution. According to Maries, the strenuous academic work load that student faced in school necessitate excess intake of caffeine drinks and kola nuts in order to cope with the enormous task. Most of these students have been negatively affected. There have been cases where some students slept off in examination hall, develop severe headache, mood damage, blank memory and stomach disorder as a result of excess intake of caffeinated drinks and kola nuts. Sometimes the essence of taking these caffeinated drink are defeated as students are hospitalized during or before examination as a result of the overwhelming effects these caffeinated drinks and kola nuts has caused them. The basis of this study is to examine the effect of caffeinated energy drink and kola nut on tertiary students' study and comprehension tendency in the University of Benin. And also to find out if the intake of caffeinated drinks enhanced reading and comprehending tendency as purported by some students in tertiary institutions.

Objectives of the study

1. To investigate the level and the use of caffeine among tertiary university students
2. To unravel the side effect of caffeine on students of the university of Benin.
3. To ascertain the role it plays on students' study culture and comprehension tendency.
4. To examine the difference in academic performance in caffeine users and those who abstain from it?

Research Questions

To guide this study, the following research questions were raised.

1. What is the level of caffeinated drinks and kola nut consumption among students in the faculty of Education University of Benin?
2. What are the effects of caffeinated drinks and kola nut on the students' health?
3. Do caffeinated drinks and kola nuts play any significant role in tertiary students reading and comprehension culture?
4. Are there any differences in academic between students who consume kola nuts and caffeinated drinks and those who abstain from it?

METHODOLOGY

This study adopted the survey design. The design was adopted because a few people considered to be representative of the entire group were selected for the study. The target population for the study consisted of four thousand students from eight departments in the faculty of Education University of Benin, Benin City Edo state, of 2016/2017 academic session. The students were stratified based on faculty and on gender**.** The simple random sampling technique was used

to select the number of students from each department. 500 students were purposively selected for the study.

The research instrument used for this study was a questionnaire. The questionnaire was made up of three sections. Section A contained the demographic information of the respondents Section B contain questions on the use and consumption of caffeine by the respondent while section C demanded the respondents to answer questions on how they felt their individual academic performance has been affected by the use of caffeine. The respondents were required to pick YES or NO in the items. The content and face validity of the instrument was ascertained by three experts in the field at the institute of education, University of Benin. Their comments and suggestions were incorporated in the final instruments. The reliability of the instrument was ascertained using the Cronbach alpha. 30 copies of the questionnaire were administered to some 300 level students in another department in university of Benin. This gave an alpha value of 0.84 which is an acceptable reliability. The questionnaires were personally administered by the researchers who visited the departments that used for the study. The 500 questionnaires administered were all returned back to the researcher. The simple percentage and ranking was used to analyses the responses of the respondents.

RESULTS

Research question 1: What is the level of caffeinated drink and kola nut consumption among students in the faculty of Education University of Benin?

Table 1: The level of caffeinated drink and kola nuts consumption among students

Consumption rate	Frequency	Percentage
Daily	100	20.0
Weekly	85	17.0
Examination period	315	63.0
Total	**500**	**100.0**

The data in table 1 above showed the response of students in the faculty of education university of Benin, Edo state, stating the period they consume caffeinated drinks and kola nuts. It further showed three periods the students consume them. They are daily, weekly and during examination periods. 20 percent claimed that they take it daily. 17 percent agreed that they consume caffeinated drinks and kola nut weekly while 63 percent asserted that they take the substance during examination period. This implies that there is a high intake of caffeinated drinks and kola nut during examination period.

Table 2: The quantity of caffeinated drinks consumption among students

Quantity	Daily		Weekly		Examination period	
	Frequency	%	Frequency	%	Frequency	%
1 cup	110	22.0	85	17.0	305	61.0
2 cups	140	28.0	70	14.0	290	58.0
More than 2cups	180	36.0	35	7.0	285	57.0

The data in table 2 above showed the response of students in the University of Benin on the quantity of caffeinated drinks they consume. 22 percent, 17 percent and 61 percent opined that they take 1 cup daily weekly and during examination period. 28 percent, 14 percent and 58 percent agreed that they take 2 cup daily, weekly and during examination period. While 36 percent, 7 percent and 57 percent said that they take more than 2 cup daily, weekly and during examination period. From the foregoing, the consumption of caffeinated drinks by students of faculty of education, University of Benin is highest during examination period.

Research question 2: What are the effects of caffeinated drinks and kola nut on the students' health?

Table 3: Reponses on the effect of caffeinated drinks and kola nut on students' health

Items	Frequency	Ranking
Become irritable	75	5
Difficulty in learning or remembering things	35	11
Headaches	80	4
Sleep disorder/insomnia	95	2
Laziness	170	1
Increased in nervousness	55	8
Increase in anxiety	25	13
Increase in heart beats	15	14
Reduced feeling of fatigue	65	6
Difficulty in performing complicated task	30	12
Enhancement in alertness and reaction	45	9
Enhancement in learning efficiency	60	7
Increased in negative mood	40	10
Cannot stay focused	85	3

Table 3 above showed the responses and ranking of students in the faculty of Education University of Benin on the effects of caffeine on students' health. The most identified effects is laziness followed by sleep disorder/ insomnia, and the students cannot remain focused. The least effects are increase in anxiety and increase in heart beats.

Research questions three: To what extent caffeinated drinks and kola nut play any significant role in tertiary students reading and comprehension culture?

Table 4: The responses of the students on the role of caffeinated drinks and kola nut

Items	Yes		No	
	Frequency	%	Frequency	%
Do your intake of caffeinated drinks and kola nut increase during examination period?	305	61.0	195	39.0
Does your current kola nut consumption keep you awake and boost your reading and comprehension tendency?	290	58.0	210	42.0
Do your caffeinated drinks keep you awake and alert while reading?	325	65.0	175	35.0
Do you eat kola nut and drink energy drinks before or during test or examination period?	300	60.0	200	40.0
Have you noticed any improvement in your academics through the use of these substances	315	63.0	185	37.0
Do you feel caffeine is good for academics and students in tertiary institutions	305	61.0	195	39.0
Total	**1840**	**61.3**	**1160**	**38.7**

The data in table 4 shows the responses of the role of caffeinated drink and kola nut in tertiary students' academics. 61% agreed that the intake of caffeinated drinks and kola nut increase during examination period. 58% believed that kola nut consumption give one boost to stay awake and study. 65% are of the opinion that caffeinated drinks keep students awake and alert while reading. 60% agreed that they take caffeine before or during test or examination period. 63% believed that they noticed improvement in their reading and comprehension tendency through the use of caffeine. And 61% said that caffeine is good for academics and students in tertiary institutions.

Research questions four: Are there any differences in academic between students who consume kola nuts and caffeinated drink and those who abstain from it?

Table 5: Responses on the differences in academic in caffeinated drinks and kola nuts consumers and those who abstain from it

Items	Take caffeine		Do not take caffeine	
	Yes	No	Yes	No
Do your intake of caffeinated drinks and kola nut increase during examination period?	295 (69.4)	130 (30.6)	25 (33.3)	50 (66.7)
Do your current caffeine consumption give you boost to stay awake and study	285 (67.0)	140 (33.0)	30 (40.0)	45 (60.0)
Does your caffeine consumption keep you awake and alert in class	310 (72.9)	115 (27.1)	25 (33.3)	50 (66.7)
Do you drink caffeine before or during test or examination period	295 (69.4)	130 (30.6)	20 (26.7)	55 (73.3)

Have you noticed any improvement in your academic performance through the use of caffeine	295 (69.4)	130 (30.6)	25 (33.3)	50 (66.7)
Do you feel caffeine is good for academics and students in tertiary institutions	305 (71.8)	120 (28.2)	10 (13.7)	65 (86.7)

The data in table 5 showed the responses on the differences in academics by kola nut and caffeinated drink consumers and non-consumers. It further showed that in all the items rose; those who consumed caffeine totally agreed that caffeine increases reading and comprehension while those who don't take believed that it does not aid it.

DISCUSSION OF RESULTS

The result of the study showed that all the research questions raised were all answered in the affirmative. This implies that student take caffeine mostly for reading and comprehension tendency, and there is improvement in academic performance through the use of caffeine.

The result of this study categorically support Graham (1998) submission on caffeine, that like any stimulant, caffeine possesses a lot of side effects and for anyone who will use it, it must be done slowly under the guidance of a qualified medical professional because of the side effect which includes laziness, headache, fatigue, sleepiness, insomnia and difficulty concentrating. The study supports Hughes' assertion (1997) that caffeine allow students to focus when reading. To stay up all night reading and to focus during any information encoding, such as reading or listening to lectures. Because mental alertness is directly tied to academic performance and it allows students to pay attention to lectures, study, and take tests. Which mean caffeine has the ability to keep undergraduate students awake longer, allowing for more waking hours and it has proved invaluable in an educational environment. According to Warburton (1995), caffeine administration typically improves mood, self-reported alertness, energy and visual-motor performance which helps students improved academically.

CONCLUSION

Caffeine, commonly found in beverages such as tea, coffee, energy drinks, and kola nuts has become a regular part of the diet of most undergraduate students in the faculty of Education University of Benin. This study has revealed that caffeine help to improve students reading and comprehension culture. Its side effect on the human body is enormous. Laziness was identified as the major side effects followed by sleep disorder/ insomnia which deprive the student the ability to remain focused. Anxiety and increase in heart beats were also identified as other side effects.

RECOMMENDATIONS

As a result of the findings, the following recommendations were made.

1. Sensitization programme, such as: seminars, workshop and talk shows should be made available for all and sundry especially in campuses of all the tertiary institution across the nation.

2. To inculcate in students the adverse effects of excessive consumption of caffeinated drinks and kola nut.
3. Furthermore, the government should censor factories producing caffeinated drinks and substance reduced the quantity of caffeine in the drinks.

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