Research Paper

Relationship Between Caffeine Abuse and Depression Among College Students

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ABSTRACT

This is a descriptive cross-sectional study conducted over four months' period among college students in Kerala, India from February to May 2019. The main objective of the study was to assess the relationship between caffeine abuse and depression among college students. The analysis of the result done with the aid of the available standard statistical tests. Results showed significant relationship between high quantity of caffeine abuse and symptoms of depression in medical students.

According to World Health Organization Depression is a common mental disorder affecting more than 264 million people worldwide. It is characterized by persistent sadness and a lack of interest or pleasure in previously rewarding or enjoyable activities. Depression is a common illness worldwide, with an estimation of more than 300 million people affected. Depression is different from usual mood fluctuations and short-lived emotional responses to challenges in everyday life. Especially when long-lasting and with moderate or severe intensity, depression may become a serious health condition. It can cause the affected person to suffer greatly and function poorly at work, at school and in the family. At the worst, depression can lead to suicide. Over 800 000 people die due to suicide every year worldwide. Suicide is the second leading cause of death in 15-29-year-old. [1]

There are factors that seem to increase the risk of developing or triggering depression include, certain personality traits, traumatic or stressful events, family history, abuse of alcohol or illegal drugs and certain medications [2].

Caffeine is the world's most widely consumed psychoactive drug [3]. The ICD-11 includes caffeine dependence as a distinct diagnostic category, which closely mirrors the DSM-5's proposed set of criteria for "caffeine-use disorder" [4]. The DSM-5 also includes other caffeine-induced disorders consisting of caffeine-induced anxiety disorder, caffeine-induced sleep disorder and unspecified caffeine-related disorders. The first two disorders are

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classified under "Anxiety Disorder" and "Sleep-Wake Disorder" because they share similar characteristics. Other disorders that present with significant distress and impairment of daily functioning that warrant clinical attention but do not meet the criteria to be diagnosed under any specific disorders are listed under "Unspecified Caffeine-Related Disorders". [5]

LITERATURE REVIEW

Two studies were conducted to examine the association between soft caffeine abuse and depression.

- First study confirmed that caffeine use is associated with symptoms of depression due to either a self-medication theory, or a theory that caffeine itself causes changes in mood. Psychosis can be induced in normal individuals ingesting caffeine at toxic doses, and psychotic symptoms can also be worsened in schizophrenic patients using caffeine. Sleep and symptoms of ADHD may be altered by caffeine as well. [6]
- Second study concluded association between caffeine consumption and various psychiatric manifestations. They present two cases that show the ability of caffeine to induce psychotic and manic symptoms, and we also review the extant literature on caffeine-induced psychiatric manifestations. On the basis of their own and others' findings, they suggested that caffeine may be related to not only de-novo psychotic or mood symptoms but also to aggravation of pre-existing psychotic or mood disorders. [7]

Aims and objectives of the study

- To assess the relationship between caffeine abuse drinks and depression among medical students.
- To assess the level of depression associated with caffeine abuse based on the gender.

MATERIAL AND METHODS

Study design

This is a descriptive cross-sectional study that will be conducted over four months' period among college students in Kerala, India from February to May 2019. After obtaining the consent (verbal/written), data will be collected by using questionnaire with inventory in the form of paper and electronic. This form will be distributed among the students. Subjects will be excluded if they have to leave before the questionnaire completed. we will reassure that the study will include the college students with no previous history of depression. The current study will be conducted among college students in all batches.

The form consists of two parts: first part is to obtain the demographic data like age, gender, marital status, year of course and city. Second part is to determine the details of caffeine abuse such as how is the pattern of abuse of caffeine and the reason for abuse such as taste, refreshment, brand or peer pressure. Third part is to measure the severity of depression by using Beck's Depression Inventory.

Target population

College students of all years living in Kerala, India.

Sample size

Based on the total number of the male and female college students in all batches, which is 100 and 110 respectively, the following will be conducted. The accepted power of the study hypothesis is 80 also, a P value of ≤ 0.05 will be considered statistically significant, the

confidence level will be 95%, the confidence interval will be 5. The total sample size based on these assumptions will be (220) N [11].

Tool used

Depression was measured by using Beck Depression Inventory (BDI). It is a 21-question multiple-choice self-report inventory, one of the most widely used psychometric tests for measuring the severity of depression. Its development marked a shift among mental health professionals, who had until then, viewed depression from a psychodynamic perspective, instead of it being rooted in the patient's own thoughts. The test was also shown to have a high one-week test–retest reliability (Pearson r =0.93) and also has high internal consistency (α=.91).

Data Analysis

The analysis of the result is going to be done with the aid of the available standard statistical tests. The data will be collected and entered into the Statistical Package for the Social Sciences (SPSS) software. The most appropriate tests will be used according to the study as the following:

- Pearson chi square test will be used to test the relationship between the results from the Beck's Depression Inventory and the amount of caffeine abuse.
- Descriptive statistics will be done as frequency table to categorize each group, so the data will show each level of depression with the amount of caffeine abuse.

RESULTS AND DISCUSSIONS

The present study revealed that there is significant relationship between high consumption of caffeine and prevalence of depressive symptoms among college students in Kerala. The study also showed that students consume high quantify of caffeine as coping method in order to overcome their depressive symptoms. This observation can be considered as the cognitive distortion about caffeine among college students. Out of the 210 students 14% students are severely addicted to caffeine and the score on beck depression inventory is also high. More scores observed in the areas of disappointment, irritability, lack of interest in other people and inability to take decisions. In the comparison of male and female students, BDI score is more in female students.

Perspectives and implications

Investigator would like to mention some limitations observed in the study such as limited sample size, data collection will be only from a particular group in the general population, some subjects might skip some questions or fail to respond on time. Furthermore, college students are prone to be stressed in many occasions, and some of them tend to consume caffeine in an excessive manner to relieve the stress, and after sometime, they begin to experience laziness and low mood. Therefore, it's important to conduct this study regarding the relation between the two subjects in order to see the impact of consuming the caffeine and the related negative health consequences, and based on the outcome result, there will be emphasis on the dangerous side-effects of caffeine, and the best way possible to reduce the amount of consuming in order to normalize the psychological effect as well as possible.

Further studies need to be conducted by including large sample size from college students and conducted the same study in the general population to overcome the limitations.

SUMMARY

To sum up, a cross-sectional study is going to be conducted on the relationship between caffeine abuse and depression among college students in Kerala, India. The study involved all batches and investigate the relationship between caffeine abuse and level of depression among college students.

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