



TO STUDY THE EFFECT OF OVERT CAFFEINE CONSUMPTION AND ITS HEALTH-RELATED CONSEQUENCES AND THE CORRELATION OF SYMPTOMS WITH PROGRESSIVE CAFFEINE ABUSE RESULTING IN DEPENDENCE

Psychiatry

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ABSTRACT

Background: Caffeine consumption has been constantly growing in India, especially among children and youngsters. Several important issues with progressive caffeine abuse resulting in dependence leading to physical, psychological, academic, and social consequences, psychotic symptoms during intoxication, headache during withdrawal, predisposing factors such as impulsivity and novelty-seeking traits in pre-morbid personality and psychosis in family. **Methods:** A case-control study was conducted on four students who consumed caffeine over many years, having psycho-physiological symptoms for 15-20 days. They were screened on a Semi-Structured questionnaire based on ICD-10 criteria for Caffeine use disorder and were evaluated. **Results:** Caffeine(mg/day) Student A= 595, Student B= 1250, Student C=770, Student D=680. Regular use has been found to be associated with higher trait anxiety and depression. * Caffeine has been linked with higher stress, sleep disturbance, anger, violence, and conduct disorder among adolescents. ** Excessive intake may lead to psychological consequences as well as physical consequences. Withdrawal may precipitate tremulousness, Headache, Dysphoria, and Cravings. **Conclusion:** Due to harmful consequences, legal availability to children, and growing consumption of caffeine products, it is of utmost essential to recognize caffeine as an addictive substance and impose regulatory measures on sale, advertisement, maximum caffeine content, health consequences, and safety limits of caffeine-containing products.

KEYWORDS

INTRODUCTION

Caffeine consumption has been constantly growing in India, especially among children and youngsters. Caffeine is a psychoactive constituent of various widely available products e.g. cola, energy drinks, chocolates, tea, coffee, analgesics, etc. It is the most widely used (80% population worldwide) psychoactive substance. A school-based survey A school-based survey of 300 Indian students reported 97% of adolescents consumed an average of 98mg of caffeine/day which is higher than used by US adolescents & Canadian recommendations for adolescents (85 mg/day), whereas 6% used more than 300 mg/day which has been considered harmful (Gera et al., 2016). ICD-10 (1992) recognized caffeine as a dependence-producing substance (World Health Organization, 1992) and a number of studies since 1993 have acknowledged the addictive potential of caffeine (Ogawa and Ueki, 2007), whereas DSM-5 (2013) categorized it under conditions for further study (American Psychiatric Association, 2013). Several important issues with progressive caffeine abuse resulting in dependence leading to physical, psychological, academic and social consequences, psychotic symptoms during intoxication, headache during withdrawal, predisposing factors as impulsivity and novelty seeking traits in pre-morbid personality & psychosis in family.

AIMS AND OBJECTIVES

1. To study the effect of overt caffeine consumption and its health-related consequences.
2. To correlate symptoms with progressive caffeine abuse resulting in dependence

MATERIAL AND METHODS

A Cross-Sectional Study was conducted on 20 MBBS students aged 18 years and above who were willing to participate in the study. A brief introductory presentation was given to students about the rationale and implementation of the study. The data was collected using a Self-Structured Questionnaire based on DSM-5 criteria fifth edition for Caffeine use disorder and were evaluated.

Inclusion Criteria For Cases

1. Students who were diagnosed on the basis of comprehensive history regarding caffeine-containing products
2. Students who were confirmed with caffeine use disorder in accordant with DSM-5 diagnostic criteria
3. Age- 18 years and above

Exclusion Criteria For Cases

1. Students with the past history of any Psychiatric disorders
2. Students with any other medical illnesses such as Hyperthyroidism and Pheochromocytoma

The Questionnaire was divided into four sections

Questions 1-5, represented the demographic data which included the age, sex, and religion of the students

Question 6, Perceived the amount of caffeine consumed, in accord to the frequency and type of caffeinated drinks consumed daily

Questions 7-8, indicated the reasons and circumstances for caffeine intake

Questions 9-10, perceived the symptoms experienced by students

METHODOLOGY

Cases were included from the Outpatient unit (OPD) of the Department of Psychiatry, Muzaffarnagar medical college and Hospital after application of Inclusion and Exclusion criteria as defined. 4 such subjects were included in the study. Subjects were confirmed primarily on comprehensive history taking of a patient's intake of caffeine-containing products. They were screened on a Semi-Structured Questionnaire based on ICD-10 diagnostic criteria for caffeine use disorder and were evaluated

RESULTS

Age Group	Number	Percentage
18-30	20	100
31-50	0	0
51-70	0	0

Sex	Number	Percentage
Male	8	40
Female	12	60

Religion	Number	Percentage
Hindu	17	85
Muslim	3	15
Sikh	0	0
Christian	0	0

Categorisation Of Caffeine Consumption

Caffeine consumption category	On regular days	On holidays	On exam days
Low intake (199mg/day)	13	11	6
Moderate intake (200-399mg/day)	5	6	8
High intake (400mg/day)	2	3	6

Reason Behind Caffeine Consumption

Reason	Frequency	Percentage
Feel alert	3	15
To relax and calm	4	20
To concentrate while studying	4	20
Deal with stress	3	15
Combat headache	2	10
Addiction	3	15

Control weight	1	5
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Circumstances For Caffeine Intake

Circumstances	Frequency	Percentage
Sleep disturbance	6	30
Anxiety	2	10
Headache, Fatigue	3	15
Irritability	1	5
Craving	2	10
Psychomotor agitation	2	10
Physiological complaints	4	20

DISCUSSION

1. Caffeine is the most widely used psychoactive substance in the world. Caffeine is consumed in different forms such as tea, coffee, soft drink, and energy drinks. Caffeine consumption assists the nutritional benefit or worsens the lifestyle is yet to be scrutinized.
2. Participation of female students (n=12, 60%) outnumbered the male students (n=8, 40%). Depending on the quantity of caffeine consumption, food and drug administration (FDA) is divided into three different categories that are low intake of up to 199mg/day, moderate intake of up to 200-399mg/day, and high intake of more than 400mg/day.
3. The study showed that the majority of students were in Category I (low intake) on regular days(n=13), Category II (moderate intake) on holidays(n=10), Category III (high intake) on Exam days(n=8)
4. Study by Kaplan et al showed that 250mg of caffeine can cause elation in healthy volunteers and doses of more than 400mg/day can cause irritability.⁵
5. Evidences show that moderate doss of caffeine impair motor skills and may not be an adequate substitute for memory enhancement or to allay sleep.⁶
6. At high concentration, caffeine acts as a diuretic agent and excess consumption causes dehydration, headache and severe fatigue. ⁷
7. High caffeine consumers are subjected to decrease nutrient absorption and a slow rate of fluid absorption.⁸

CONCLUSION

The study showed that the consumption of caffeine among medical students was mainly to keep them alert in order to combat heavy working hours. The medical students were low consumers of caffeine on regular days. Whereas during the holidays and exam days, consumption of caffeine ranged from moderate to high category. Though the high consumers represent a small percentage they should try to minimize the daily caffeine use

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