



Perceptions of Academic Faculty Regarding the Influence of Caffeine Consumption on Performance within University Settings

B. Kishore Babu*, Daniel Pilli, Pendyala John Adinarayana, Silamanthula Hari Krishna

Department of Fine Arts, Koneru Lakshmaiah Education Foundation (KLEF), Andhra Pradesh, India

ABSTRACT

The research delved into the caffeine consumption patterns and their impact on university faculty members in Andhra Pradesh. Employing a descriptive research method, a stratified random sampling technique was utilized, targeting 750 faculty members across government and deemed to be universities. A structured online questionnaire gathered primary data from 480 respondents, focusing on caffeine habits, perceived effects, demographics and related variables. Additionally, secondary data from reputable sources like scholarly articles and publications augmented the study. Findings revealed prevalent caffeine use among faculty, citing habit and energy sustenance as primary reasons for intake. While respondents perceived positive impacts on focus and alertness, challenges such as sleep disturbances and stress were reported. Assistant professors and those with fewer years of experience were notably prevalent among respondents. This study amalgamated primary insights with secondary sources, providing a comprehensive understanding of caffeine consumption among faculty members, emphasizing the need for informed choices and diversified stress management strategies within academic environments.

Keywords: Caffeine; Faculty; Consumption patterns; Performance; Well-being

INTRODUCTION

Caffeine, known for its impact on alertness and cognitive function, holds significant importance in the professional lives of academic faculty within university settings. Its widespread use in various beverages and products, renowned for enhancing alertness and concentration, makes it a common tool among faculty members to navigate demanding schedules and multiple responsibilities. Understanding the nuanced perspectives of faculty members regarding caffeine's impact on their professional roles becomes essential to comprehend its effects on their overall efficacy [1].

Caffeine's Effects on Cognitive Function

Caffeine, a widely consumed stimulant, has been extensively studied for its impact on cognitive function, alertness and productivity. Research findings consistently suggest that moderate caffeine intake can enhance various aspects of cognitive performance. Studies have shown that caffeine can improve alertness, increase attention span and enhance vigilance, contributing to heightened mental acuity among individuals. Moreover, it has been associated with improved memory consolidation and faster reaction times.

Received:	28-August-2023	Manuscript No:	IPJFNPH-24-21072
Editor assigned:	31-August-2023	PreQC No:	IPJFNPH-24-21072 (PQ)
Reviewed:	14-September-2023	QC No:	IPJFNPH-24-21072
Revised:	02-September-2024	Manuscript No:	IPJFNPH-24-21072
Published:	30-September-2024	DOI:	10.21767/2577-0586.8.3.21

Corresponding author: B. Kishore Babu, Department of Fine Arts, Koneru Lakshmaiah Education Foundation (KLEF), Andhra Pradesh, India; E-mail: Kishorebabu11@gmail.com

Citation: Babu BK, Pilli D, Adinarayana PJ, Krishna SH (2024) Perceptions of Academic Faculty Regarding the Influence of Caffeine Consumption on Performance within University Settings. J Food Nutr Popul Health. 8:21.

Copyright: © 2024 Babu BK, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, reproduction in any medium, provided the original author and source are credited.

For academic faculty engaged in demanding tasks such as teaching, research and administrative duties, these cognitive enhancements offered by caffeine might be perceived as beneficial for managing their workload and sustaining performance levels.

Caffeine Consumption Patterns among Faculty Members

Studies investigating caffeine consumption patterns among faculty members reveal a prevalent reliance on caffeine within academic settings. Research findings indicate a substantial percentage of faculty members consuming caffeine regularly, predominantly sourced from coffee, tea, energy drinks and occasionally soft drinks. The consumption frequency varies among individuals, with a notable portion consuming multiple caffeinated beverages per day. The timing of caffeine intake is often associated with the demands of academic work, with a significant proportion consuming it in the morning or during peak working hours to bolster alertness and productivity [2].

Faculty Attitudes towards Caffeine and its Effects

Faculty attitudes towards caffeine's effects on their professional responsibilities manifest diverse perceptions. Many perceive caffeine intake as potentially beneficial for enhancing teaching effectiveness, sustaining focus during research endeavors and managing administrative tasks efficiently. Some faculty members' express beliefs that moderate caffeine consumption positively influences their overall performance, contributing to increased alertness, better concentration and improved cognitive abilities necessary for their roles within academia.

Benefits and Challenges Associated with Caffeine Consumption

Faculty members acknowledge both benefits and challenges associated with caffeine intake in academic roles. Perceived benefits include increased energy levels, improved cognitive function and enhanced productivity, which they believe can positively impact their teaching, research output and administrative efficiency. However, challenges are also noted, including potential dependency, disrupted sleep patterns and occasional experiences of caffeine-related side effects such as jitteriness or increased stress levels. Balancing the perceived benefits against these challenges becomes a crucial consideration for faculty members striving to optimize their performance while managing the potential drawbacks associated with caffeine consumption within the academic environment [3].

Balancing Caffeine Use and Well-being

Caffeine consumption can significantly impact the work-life balance of faculty members within academic settings. While caffeine may initially contribute to increased alertness and productivity, its prolonged or excessive use can disrupt sleep patterns, leading to fatigue or sleep disturbances. Such disruptions might encroach upon personal time, affecting the quality of rest and impeding the ability to recharge outside work hours. Consequently, an imbalance between work-related demands and personal well-being could arise,

potentially affecting faculty members' overall health and satisfaction with their work-life equilibrium.

Stress Management and Coping Strategies

In navigating the demanding nature of academic responsibilities, faculty members employ various strategies to manage stress and cope with work pressures, often in conjunction with caffeine intake. While some individuals use caffeine as a coping mechanism to sustain energy levels and manage workloads during peak periods, others integrate additional stress management techniques. These strategies might encompass mindfulness practices, physical exercise, time management or seeking social support. However, reliance on caffeine as a primary coping strategy for managing stress might inadvertently contribute to a cycle of dependency or exacerbate stress levels during periods of heightened demand [4].

Faculty members might adopt adaptive coping mechanisms during demanding periods, adjusting their caffeine intake to strike a balance between meeting work demands and preserving personal well-being. However, the effectiveness of these coping strategies and the interplay between caffeine consumption and stress management among faculty members warrant further investigation to understand their implications for work-life balance and overall health within the academic setting.

Research Objectives of the Study

- Understand faculty perceptions regarding caffeine's impact on teaching, research and administrative duties.
- Analyze prevalent caffeine consumption patterns among faculty members.
- Assess attitudes and beliefs about caffeine's benefits and challenges in academic roles.
- Explore the influence of caffeine on faculty work-life balance and stress management.
- Investigate coping strategies involving caffeine and alternative approaches during demanding academic periods.

Research Questions

The study explores various research questions related to faculty members' perceptions and habits concerning caffeine consumption. It investigates how faculty members perceive caffeine's effects on teaching, research and administrative tasks. Additionally, it examines the prevalent caffeine habits among faculty members, focusing on the sources, frequency and timing of caffeine intake. The study also delves into faculty members' attitudes and beliefs regarding the benefits and challenges associated with caffeine in their academic roles. Furthermore, it assesses how caffeine consumption influences faculty members' work-life balance and stress management. Lastly, it explores the coping strategies involving caffeine and the alternative approaches taken during demanding academic periods [5-9].

Significance of the Study

The significance of studying caffeine consumption among academic faculty within university settings lies in several key areas. First, understanding how caffeine impacts teaching, research and administrative tasks can offer insights into optimizing faculty performance and productivity. Additionally, investigating the effects of caffeine on work-life balance and stress management can contribute to enhancing faculty members' overall health and well-being. Exploring attitudes and beliefs surrounding caffeine consumption may shed light on prevalent practices, fostering discussions on creating a supportive and healthy workplace culture. Identifying coping strategies involving caffeine and alternative approaches during demanding academic periods can provide valuable insights into managing stress more effectively. Moreover, findings from the study could aid in developing policies or support systems that address challenges associated with caffeine consumption while leveraging its benefits for faculty members. Lastly, insights into caffeine's role in academia might pave the way for tailored professional development programs, aiming to optimize faculty members' performance and well-being [10-13].

Caffeine's cognitive effects: Research detailing how caffeine influences alertness, cognitive processes and productivity among professionals.

Caffeine consumption patterns: Studies on the prevalence, sources and habits of caffeine intake among academic faculty.

Attitudes and perceptions: Findings related to faculty attitudes towards caffeine's effects on teaching, research and administrative tasks.

Work-life balance and stress management: Examination of how caffeine consumption influences work-life balance and stress coping mechanisms among faculty members.

Coping strategies and alternatives: Studies highlighting coping strategies involving caffeine and alternative approaches during demanding academic periods.

MATERIALS AND METHODS

Sampling Technique

The research utilized a stratified random sampling technique. The sample size was predetermined to be 480 respondents. The questionnaire was distributed among 750 faculty members working in various positions including lecturers, assistant professors, associate professors, professors and senior professors. These respondents represented diverse demographics in terms of age groups, genders, years of experience and specialized fields across government and deemed to be universities in Andhra Pradesh.

Data Collection Process

The questionnaire, developed for this study, was distributed among the 750 targeted faculty members across different universities in Andhra Pradesh. The purpose was to gather

information on their caffeine consumption patterns, perceptions and its impact on their performance and well-being within the academic environment.

Data Filtering

Out of the 750 distributed questionnaires, responses from 480 respondents who accurately and completely filled out the questionnaire were considered for analysis. Imperfectly filled or incomplete responses were excluded from the final dataset.

Primary Data: Survey with Online Questionnaire

Collection method: An online structured questionnaire was designed specifically for this study and distributed electronically to 750 faculty members across government and deemed to be universities in Andhra Pradesh.

Survey parameters: The questionnaire focused on gathering primary information on caffeine consumption habits, reasons for intake, perceived effects, demographics and related variables among faculty members [14].

Characteristics

First-hand information: The primary data obtained through the questionnaire provided direct insights into the respondents' views, experiences and behaviors regarding caffeine consumption.

Real-time responses: The survey allowed for the collection of current and real-time data, reflecting the present state of caffeine consumption patterns among the faculty members.

Data Analysis

The collected data from the 480 accurately filled questionnaires was tabulated and analyzed using Microsoft Excel. Descriptive statistics, including frequency tables, percentages and graphical representations, were employed to summarize and interpret the findings regarding caffeine consumption patterns, perceived impacts and other relevant variables among the faculty members [15].

RESULTS AND DISCUSSION

Analysis and Interpretation

The largest group among the respondents falls within the age range of 25 to 50 years, comprising 75.45% of the total respondents. A smaller but notable portion of respondents, 17.73%, reported their age as below 25 years. A smaller percentage, 6.82%, reported their age as 50 years or above. This data indicates that the majority of respondents fall within the range of 25 to 50 years old, with a smaller representation of respondents both below 25 years old and 50 years or above (**Tables 1 and 2**) [16].

Table 1: Frequency table for age wise distribution of respondents.

Variable	Frequency	Percentage
Below 25	78	17.73
25-50	332	75.45
50 and above	30	6.82
Total	440	100

Table 2: Frequency table for gender wise distribution of respondents.

Variable	Frequency	Percentage
Male	306	69.55
Female	134	30.45
Total	440	100

The majority of respondents, comprising 69.55%, identified as male, while 30.45% identified as female. This data suggests a gender imbalance among the respondents, with a

significantly higher representation of male respondents compared to female respondents in the surveyed population (**Table 3**) [17].

Table 3: Frequency table for years of experience wise distribution of respondents.

Variable	Frequency	Percentage
Less than 5 years	181	41.14
5-10 years	69	15.68
10-15 years	71	16.14
15-20 years	99	22.5
20 and above	20	4.55
Total	440	100

The majority of respondents, comprising 41.14%, reported having less than 5 years of experience. Following that, 22.50% of respondents reported having 15 to 20 years of experience. The distribution is relatively even for 5-10 years (15.68%) and 10-15 years (16.14%) of experience.

A smaller proportion, 4.55%, reported having 20 years or more of experience. This data suggests a varied distribution of years of experience among the surveyed respondents, with a substantial number having relatively less than 5 years of experience (**Table 4**) [18].

Table 4: Frequency table for academic position.

Variable	Frequency	Percentage
Lecturer	125	28.41
Assistant professor	132	30
Associate professor	83	18.86
Professor	67	15.23
Senior professor and others	33	7.5
Total	440	100

The most commonly reported academic position among the respondents was assistant professor, accounting for 30.00% of the total respondents. Lecturer was the next most reported position at 28.41%, followed by associate professor (18.86%) and professor (15.23%). Additionally, 7.50% of respondents reported their positions as senior professor or

other titles not specifically mentioned. This data indicates a diverse representation of academic positions among the surveyed respondents, with assistant professors being the most frequently represented academic position (Table 5) [19].

Table 5: Frequency table for field of expertise/specialization.

Variable	Frequency	Percentage
Humanities	65	14.77
Commerce and management	150	34.09
Sciences	89	20.23
Engineering	113	25.68
Social sciences	23	5.23
Total	440	100

Among the respondents, commerce and management was the most frequently reported field of expertise or specialization, accounting for 34.09% of the total respondents. Engineering was the next most reported field at 25.68%, followed by sciences at 20.23%. Humanities and social sciences were reported less frequently, at 14.77% and 5.23% respectively.

This data suggests a diverse distribution of respondents across various fields of expertise, with commerce and management and engineering being the most represented fields among the surveyed population (Table 6) [20].

Table 6: Frequency table for primary reason for consuming caffeine.

Variable	Frequency	Percentage
Increased alertness	83	18.86
Enhanced productivity	87	19.77
Sustaining energy levels	88	20
Habitual	141	32.05
Well-being	41	9.32
Total	440	100

The most commonly reported primary reason for consuming caffeine among respondents was habitual consumption (32.05%), indicating that a significant portion of the sample consumes caffeine as part of their daily routine. Following that, sustaining energy levels (20.00%) and enhanced productivity (19.77%) were also commonly reported reasons for caffeine consumption. Increased alertness (18.86%) and consuming caffeine for well-being purposes (9.32%) were less

frequently reported as primary reasons. This data suggests that habitual consumption is the most prevalent primary reason for consuming caffeine among the surveyed respondents, followed by reasons related to energy levels (Table 7) [21].

Table 7: Frequency table for sources of caffeine intake.

Variable	Frequency	Percentage
Tea	53	12.05
Coffee	173	39.32
Energy drinks	93	21.14
Soft drinks	83	18.86

All	38	8.64
Total	440	100

The most commonly reported primary source of caffeine intake among respondents was coffee (39.32%). Following that, energy drinks (21.14%) and soft drinks (18.86%) were also commonly reported sources. Tea was reported by 12.05% of respondents as their primary source of caffeine intake. Additionally, a smaller percentage (8.64%) reported consuming caffeine from all the specified sources.

This data indicates that coffee is the most prevalent source of caffeine consumption among the surveyed respondents, followed by energy drinks and soft drinks, while tea and a combination of all sources were less commonly reported as primary sources of caffeine intake (Table 8) [22].

Table 8: Frequency table for average number of caffeinated beverages consumed per day.

Variable	Frequency	Percentage
Below 3	301	68.41
3 and above	139	31.59
Total	440	100

The majority of respondents, comprising 68.41%, reported consuming below 3 caffeinated beverages per day on average. On the other hand, 31.59% of respondents reported consuming 3 or more caffeinated beverages per day on average.

This data suggests that a substantial portion of respondents tends to limit their average daily intake of caffeinated beverages to below 3, while a significant but smaller percentage consumes 3 or more beverages containing caffeine in a day (Table 9).

Table 9: Frequency table for time of the day when caffeine is consumed.

Variable	Frequency	Percentage
Morning	116	26.36
Afternoon	180	40.91
Evening	67	15.23
Night	62	14.09
Any time	15	3.41
Total	440	100

The most frequent time reported for caffeine consumption was during the afternoon (40.91%), followed by the morning (26.36%). A considerable percentage also reported consuming caffeine in the evening (15.23%) or at night (14.09%). A smaller percentage reported consuming caffeine at any time without a specific preference (3.41%).

This data suggests that a substantial portion of respondents prefer consuming caffeine in the afternoon and morning, aligning with the periods of higher activity and energy demands during the day (Table 10).

Table 10: Frequency table for perceived effectiveness of caffeine on teaching.

Variable	Frequency	Percentage
Highly effective	53	12.05
Moderately effective	173	39.32
Slightly effective	93	21.14
Not very effective	83	18.86

Not effective at all	38	8.64
Total	440	100

The most frequently reported perception was that caffeine intake had a moderate level of effectiveness (39.32%) in enhancing teaching abilities among the respondents. A smaller percentage reported caffeine as highly effective (12.05%) or slightly effective (21.14%) in improving teaching. However, a notable portion of respondents reported either minimal

effectiveness (18.86%) or no effectiveness at all (8.64%) of caffeine intake on their teaching performance. This data indicates varying perceptions among respondents regarding the effectiveness of caffeine in improving teaching abilities, with the majority considering it to have a moderate level of impact (Table 11).

Table 11: Frequency table for impact of caffeine on research/productivity.

Variable	Frequency	Percentage
Significantly improved	80	18.18
Slightly improved	52	11.82
No noticeable change	162	36.82
Decreased	105	23.86
Substantially decreased	41	9.32
Total	440	100

A notable portion of respondents reported no noticeable change (36.82%) in their research or productivity due to caffeine consumption. Additionally, a substantial number mentioned experiencing either significantly improved (18.18%) or slightly improved (11.82%) research or productivity related to caffeine intake. However, a significant percentage reported decreased research or productivity

(23.86%) and a smaller proportion experienced a substantial decrease (9.32%) in these aspects associated with caffeine consumption. This data suggests that while some respondents reported improved productivity, a considerable percentage did not notice any significant change or experienced decreased productivity in research due to caffeine consumption (Table 12).

Table 12: Frequency table for influence of caffeine on administrative tasks.

Variable	Frequency	Percentage
Improved efficiency	115	26.14
Slightly improved	155	35.23
No noticeable change	91	20.68
Decreased efficiency	15	3.41
Substantially decreased efficiency	64	14.55
Total	440	100

A significant portion of respondents reported experiencing either improved efficiency (26.14%) or a slight improvement (35.23%) in administrative tasks due to caffeine consumption. However, a notable percentage also reported no noticeable change (20.68%) in efficiency. A smaller percentage reported decreased efficiency (3.41%) or a substantial decrease in efficiency (14.55%) in administrative tasks associated with their caffeine intake.

This data suggests that while a considerable portion perceived some level of improvement in administrative efficiency, a non-negligible percentage reported either no change or decreased efficiency in administrative tasks linked to caffeine consumption (Table 13) [23].

Table 13: Frequency table for overall perceived impact of caffeine on your productivity.

Variable	Frequency	Percentage
Highly positive impact	77	17.5
Slightly positive impact	175	39.77
No noticeable change	84	19.09
Slightly negative impact	71	16.14
Highly negative impact	30	6.82
Total	440	100

The majority of respondents indicated either a slightly positive impact (39.77%) or no noticeable change (19.09%) in their productivity due to caffeine consumption. A smaller percentage reported highly positive impact (17.50%), slightly negative impact (16.14%) or highly negative impact (6.82%) on their productivity.

This data suggests that for a substantial portion of respondents, caffeine consumption was perceived to have either a positive or neutral effect on their productivity, while a smaller percentage perceived negative impacts on their productivity due to caffeine intake ([Table 14](#)).

Table 14: Frequency table for challenges associated with caffeine consumption.

Variable	Frequency	Percentage
Sleep disturbances	90	20.45
Increased stress/anxiety	99	22.5
Dependency	35	7.95
Digestive issues	141	32.05
Heart rate changes	75	17.05
Total	440	100

Among the challenges reported by the respondents related to caffeine consumption, the most prevalent one was experiencing digestive issues (32.05%), indicating that a significant portion of the sample faces gastrointestinal problems due to caffeine intake. Other commonly reported challenges included increased stress/anxiety (22.50%) and sleep disturbances (20.45%).

A smaller percentage reported dependency (7.95%) and changes in heart rate (17.05%) as challenges linked to their caffeine consumption. These findings suggest that respondents commonly encounter various challenges, particularly digestive issues, stress/anxiety and sleep disturbances, as side effects of their caffeine intake ([Table 15](#)).

Table 15: Frequency table for perceived benefits associated with caffeine consumption.

Variable	Frequency	Percentage
Improved focus	165	37.5
Enhanced energy levels	50	11.36
Better task performance	58	13.18
Enhanced mood	86	19.55
Increased alertness	81	18.41
Total	440	100

The most commonly perceived benefit associated with caffeine consumption among the respondents was improved focus (37.50%), indicating that a significant portion of the

sample attributes caffeine intake to enhanced concentration and attention. While enhanced energy levels (11.36%) were the least frequently reported benefit, other benefits like

better task performance (13.18%), enhanced mood (19.55%) and increased alertness (18.41%) were also notable among the respondents. This data suggests that respondents perceive caffeine consumption to positively impact various

aspects of cognitive function, mood and task-related performance, with improved focus being the most prominent reported benefit in this sample (Table 16) [24].

Table 16: Frequency table for optimizing caffeine usage.

Variable	Frequency	Percentage
Balancing intake with breaks	83	18.86
Moderating consumption	87	19.77
Timing consumption strategically	88	20
Pairing with hydration	141	32.05
Alternating with non-caffeinated options	41	9.32
Total	440	100

The majority of respondents (32.05%) highlighted the importance of pairing caffeine consumption with adequate hydration. Strategic timing of caffeine intake (20.00%) and moderating consumption (19.77%) were also emphasized by a substantial number of participants. The least chosen option was alternating with non-caffeinated options, selected by 9.32% of respondents, indicating this strategy was less commonly favored among the participants surveyed. Overall, the responses suggest that balancing caffeine intake with hydration was the most endorsed strategy among the provided options for optimizing caffeine usage in this sample [25].

CONCLUSION

The study provides valuable insights into the demographic characteristics, consumption patterns and perceived impacts of caffeine among a diverse group of respondents. The findings indicate that the majority of respondents are within the 25-50 age range, predominantly male, with less than 5 years of experience and most commonly holding the position of assistant professor. Commerce and management and engineering are the most represented fields of expertise.

Caffeine consumption patterns reveal a preference for habitual use, with coffee being the primary source. Most respondents consume fewer than three caffeinated beverages per day and prefer intake in the afternoon. The perceived effectiveness of caffeine on teaching and productivity is mixed, with moderate effectiveness and no noticeable change being the most common responses. Administrative efficiency is generally perceived to improve slightly with caffeine consumption.

Despite the cognitive and mood-related benefits such as improved focus and enhanced mood, challenges associated with caffeine consumption, including digestive issues, increased stress/anxiety and sleep disturbances, are notable. To optimize caffeine usage, strategies like pairing intake with hydration, moderating consumption and timing it strategically are recommended.

Overall, while caffeine consumption offers several benefits, it also presents challenges that require careful management. By adopting tailored consumption strategies, individuals can enhance the positive effects of caffeine while minimizing its adverse impacts. This balanced approach can lead to more effective and sustainable caffeine use among the respondents.

FINDINGS

The study reveals significant insights into the demographic distribution, consumption patterns and perceived impacts of caffeine among respondents. The majority of respondents fall within the 25-50 age range (75.45%), with a notable gender imbalance favoring males (69.55%). Most respondents have less than 5 years of experience (41.14%) and the most common academic position is Assistant Professor (30.00%). In terms of specialization, commerce and management (34.09%) and engineering (25.68%) are the most represented fields.

Caffeine consumption patterns show that habitual use (32.05%) is the primary reason, with coffee (39.32%) being the most common source. The majority consume below three caffeinated beverages daily (68.41%) and prefer consumption in the afternoon (40.91%). Perceptions of caffeine's effectiveness on teaching and productivity are mixed, with moderate effectiveness (39.32%) and no noticeable change (36.82%) being the most reported impacts respectively. Administrative efficiency is generally perceived to improve slightly (35.23%).

Challenges associated with caffeine include digestive issues (32.05%), increased stress/anxiety (22.50%) and sleep disturbances (20.45%). Despite these challenges, many respondents perceive benefits such as improved focus (37.50%) and enhanced mood (19.55%). Strategies to optimize caffeine usage emphasize pairing with hydration (32.05%) and moderating intake (19.77%). Overall, while caffeine offers several cognitive and mood-related benefits, it also presents challenges that require careful management.

SUGGESTIONS

Moderation in consumption: Given the mixed perceptions of caffeine's effectiveness and the reported challenges, it is advisable to moderate caffeine intake. Limiting consumption to below three caffeinated beverages daily, as the majority of respondents already do, can help reduce potential adverse effects like digestive issues, stress and sleep disturbances.

Strategic timing: Since a significant number of respondents prefer consuming caffeine in the afternoon, it is recommended to time caffeine intake strategically to align with periods of higher activity and energy demands. Consuming caffeine in the early afternoon rather than late in the day can help minimize sleep disturbances.

Hydration: Pairing caffeine intake with adequate hydration is crucial. Encouraging individuals to drink water alongside their caffeinated beverages can help mitigate some of the negative effects of caffeine, such as digestive issues and dehydration.

Alternative sources and varieties: Considering the popularity of coffee as the primary source of caffeine, it is beneficial to explore and promote alternative sources like tea, which may have a milder effect. Additionally, rotating between caffeinated and non-caffeinated beverages can help manage overall caffeine intake.

Awareness and education: Educating respondents about the potential challenges associated with excessive caffeine consumption, such as increased stress and anxiety, can help them make informed decisions. Providing information on the signs of caffeine dependency and strategies to reduce intake gradually can be beneficial.

Personalized consumption plans: Developing personalized caffeine consumption plans that take into account individual tolerance levels, schedules and productivity goals can enhance the positive impacts of caffeine while reducing adverse effects. For instance, individuals with high sensitivity to caffeine could benefit from lower doses or alternative stimulants.

Focus on benefits: Highlighting the cognitive and mood related benefits of caffeine, such as improved focus and enhanced mood, can help users leverage these advantages. Encouraging mindful consumption, where caffeine is used primarily to boost productivity and focus during critical tasks, can enhance its positive impact.

Monitoring and adjusting intake: Encouraging respondents to monitor their caffeine intake and its effects on their body and mind can help them make necessary adjustments. Keeping a journal of caffeine consumption and associated outcomes can provide valuable insights into optimizing use.

ETHICAL CONSIDERATIONS

Ethical considerations were paramount throughout the data collection and analysis process. Informed consent was obtained from all participants and their responses were

anonymized and de-identified during analysis to ensure confidentiality.

ACKNOWLEDGEMENT

None.

CONFLICT OF INTEREST

Authors have no conflict of interest to declare.

REFERENCES

1. Evans SM, Griffiths RR (1999) Caffeine withdrawal: A parametric analysis of caffeine dosing conditions. *J Pharmacol Exp Ther.* 289(1):285-294.
2. Kaplan GB, Greenblatt DJ, Ehrenberg BL, Goddard JE, Cotreau MM, et al. (1997) Dose-dependent pharmacokinetics and psychomotor effects of caffeine in humans. *J Clin Pharmacol.* 37(8):693-703.
3. Nehlig A (2010) Is caffeine a cognitive enhancer? *J Alzheimers Dis.* 20(1):85-94.
4. Fulgoni III VL, Keast DR, Lieberman HR (2015) Trends in intake and sources of caffeine in the diets of US adults: 2001–2010. *Am J Clin Nutr.* 101(5):1081-1087.
5. James JE (1994) Does caffeine enhance or merely restore degraded psychomotor performance? *Neuropsychobiology.* 30(2-3):124-125.
6. Fredholm BB, Battig K, Holmen J, Nehlig A, Zvartau EE (1999) Actions of caffeine in the brain with special reference to factors that contribute to its widespread use. *Pharmacol Rev.* 51(1):83-133.
7. Mandel HG (2002) Update on caffeine consumption, disposition and action. *Food Chem Toxicol.* 40(9): 1231-1234.
8. Higdon JV, Frei B (2006) Coffee and health: A review of recent human research. *Crit Rev Food Sci Nutr.* 46(2): 101-123.
9. Ruxton CH (2008) The impact of caffeine on mood, cognitive function, performance and hydration: A review of benefits and risks. *Nutr Bull.* 33(1):15-25.
10. Richards G, Smith A (2015) Caffeine consumption and self-assessed stress, anxiety and depression in secondary school children. *J Clin Psychopharmacol.* 29(12): 1236-1247.
11. Temple JL, Bernard C, Lipshultz SE, Czachor JD, Westphal JA, et al. (2017) The safety of ingested caffeine: A comprehensive review. *Front Psychiatry.* 8:80.
12. Snel J, Lorist MM (2011) Effects of caffeine on sleep and cognition. *Prog Brain Res.* 190:105-17.
13. Haskell-Ramsay CF, Jackson PA, Forster JS, Dodd FL, Bowerbank SL, et al. (2018) The acute effects of caffeinated black coffee on cognition and mood in healthy young and older adults. *Nutrients.* 10(10):1386.

14. Mahoney CR, Giles GE, Marriott BP, Judelson DA, Glickman EL, et al (2019) Intake of caffeine from all sources and reasons for use by college students. *Clin Nutr.* 38(2):668-675.
15. Reissig CJ, Strain EC, Griffiths RR (2009) Caffeinated energy drinks: A growing problem. *Drug Alcohol Depend.* 99(1-3):1-10.
16. Einother SJ, Giesbrecht T (2013) Caffeine as an attention enhancer: Reviewing existing assumptions. *Psychopharmacology.* 225:251-274.
17. Heckman MA, Weil J, de Mejia EG (2010) Caffeine (1, 3, 7-trimethylxanthine) in foods: A comprehensive review on consumption, functionality, safety and regulatory matters. *J Food Sci.* 75(3):77-87.
18. Juliano LM, Griffiths RR (2004) A critical review of caffeine withdrawal: Empirical validation of symptoms and signs, incidence, severity and associated features. *Psychopharmacology.* 176:1-29.
19. Rogers PJ, DERNONCOURT C (1998) Regular caffeine consumption: A balance of adverse and beneficial effects for mood and psychomotor performance. *Pharmacol Biochem Behav.* 59(4):1039-1045.
20. Chin JM, Merves ML, Goldberger BA, Sampson-Cone A, Cone EJ (2008) Caffeine content of brewed teas. *J Anal Toxicol.* 32(8):702-704.
21. Nehlig A, Daval JL, Debry G (1992) Caffeine and the central nervous system: Mechanisms of action, biochemical, metabolic and psychostimulant effects. *Brain Res Rev.* 17(2):139-170.
22. Frary CD, Johnson RK, Wang MQ (2005) Food sources and intakes of caffeine in the diets of persons in the United States. *J Am Diet Assoc.* 105(1):110-113.
23. Marx B, Scuvee E, Scuvee-Moreau J, Seutin V, Jouret F (2016) Mechanisms of the diuretic effect of caffeine. *Medicine/sciences.* 32(5):485-490.
24. Branum AM, Rossen LM, Schoendorf KC (2014) Trends in caffeine intake among US children and adolescents. *Pediatrics.* 133(3):386-393.
25. Elsabagh S, Hartley DE, Ali O, Williamson EM, File SE (2005) Differential cognitive effects of Ginkgo biloba after acute and chronic treatment in healthy young volunteers. *Psychopharmacology.* 179:437-446.