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615.322:582.936.1Maheswari M, et al. Caffeine
headache. Halo 194. 2023;
29(2-3):38-49.**A PAN INDIA CROSS-SECTIONAL STUDY AMONG MEDICAL STUDENTS
ON THE THERAPEUTIC EFFECTS OF COFFEE ON TENSION-TYPE
HEADACHE***Mansi MAHESHWARI¹, Varun PAREEK², Lokendra SHARMA³, Punam JAKHAR⁴,
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India, Pin Code:302033**ABSTRACT**

Introduction/Objective Tension-type headache (TTH) is the most frequent type of headache, affecting approximately 1.89 billion individuals globally. It is characterised by dull, agonising head discomfort, a sensation of tightness within the head, and tenderness of the scalp, neck, and shoulders. Coffee is a beverage made from roasted coffee beans. Coffee constituents can act as CNS stimulants, scavengers of free radicals, and have antioxidant properties. The major goal of this study is to assess the relationship between TTH and coffee consumption among medical students. This study also intends to inquire about medical students' daily coffee consumption form and amount, as well as their preference for coffee over other pharmacological treatments in headache relief.

Methods Between August 31, 2023, and September 21, 2023, a pan-India cross-sectional analysis was carried out across several medical colleges in India. A self-administered questionnaire was utilised to collect data using web-based links.

Results 80% of the students experienced headaches in their everyday lives and 51.82% of students used coffee to relieve those headaches. The prevalence of TTH in coffee users was 13.06%. The prevalence of TTH in students who do not consume coffee was 12%. About 57% of students consumed about 1 tablespoon of coffee per day. In addition to that, 26.13% of students believed that coffee was equally as effective as pharmacological agents in treating headache and 11.06% of students believed that coffee was more effective than pharmacological agents.

Conclusion Based on these results, we were not able to confirm a therapeutic effect of coffee on tension-type headache (TTH). On the contrary, the prevalence of TTH headaches was found to be marginally higher in coffee consumers.

Keywords: tension-type headache, coffee, medical students

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Tension-type headache (TTH) is one of the most common primary headaches that can have a substantial influence on a person's life. Healthcare personnel are exposed to a variety of trigger variables that contribute to an increase in headache frequency, the most significant of which are sleep disruptions, stress, and irregular eating habits [1]. Caffeine-containing analgesics had a considerably better effect than placebo and 1000 mg paracetamol, while paracetamol had a significantly better effect than the placebo. Caffeine maintained a strong analgesic adjuvant impact irrespective of the patient's regular coffee consumption or coffee consumption in the 4 hours preceding treatment [2]. Tension-type headache (TTH) is a type of headache characterised by discomfort that is usually described as "a band around the head." It contains at least two of the following characteristics: it is mild [3] to moderate in severity, it occurs on both sides of the head (bilaterally), it is not made worse by ordinary activity (bending over or climbing stairs), and the pain is pressing or tightening rather than throbbing or pulsing. It also does not cause nausea or vomiting. Women were shown to have a higher prevalence of migraine and

TTH. This was attributed to the effect of female hormone levels, notably oestrogen. The majority of students with migraines (54.65%) and tension-type headaches (66.17%), used paracetamol [4]. Despite it being the most common type of headache, the pathogenesis of TTH remains unknown. TTH patients have stiffer muscles, are more sensitive to palpation, and may have more frequent trigger locations of soreness than individuals who do not suffer from headaches. The source and effect of these muscle discoveries, however, are unknown.

According to research [5], the discomfort felt during TTH is caused by both central and peripheral processes. Caffeinated drugs are commonly used by patients who suffer from headaches, either alone or in combination with other treatments. Combinations of caffeine and analgesic medications, such as acetaminophen, acetylsalicylic acid, and ibuprofen, demonstrated significantly improved efficacy in the treatment of patients with TTH or migraine, with favourable tolerability in the majority of patients [6]. Tenderness of the pericranial myofascial tissues and the number of myofascial trigger points are significantly higher in patients with tension-type headaches (TTH).

Peripheral activation or sensitization of myofascial nociceptors may play a role in pain sensitivity, but strong evidence for a peripheral abnormality is currently absent. Peripheral pathways are most likely crucial in episodic TTH. Sensitization of pain pathways in the central nervous system caused by sustained nociceptive impulses from pericranial myofascial tissues appears to be the cause of the transition from episodic to chronic TTH [7]. The prevalence of migraine and tension-type headaches was also investigated in relation to lifestyle factors such as physical activity, smoking, drinking coffee, alcohol consumption, and sleep patterns. Stress and mental tension were the most prominent triggering factors in both migraine and tension-type headaches. Alcohol, weather fluctuations, and menstruation were also common precipitants. Patients with migraines were more likely to experience the disappearance or significant improvements in their headaches during pregnancy than patients with tension-type headaches. Men and women have migraine and tension-type headaches at different ages. Female hormones may be a contributing reason to the gender disparity in headache disorders. The level of physical activity did not affect migraine, whereas men who were primarily sedentary had a significantly higher prevalence of tension-type headaches. There were no significant connections between headache disorders and smoking, coffee, or alcohol intake. In both univariate and multivariate analyses, sleep pattern was substantially linked with migraine and tension-type headaches. Finally, migraine and tension-type headaches appear to be distinct in terms of a variety of endogenous and external variables [8]. According to current research, referred pain induced by activated trigger points (TrPs) leads to TTH symptoms. There is additional evidence that TrPs are a peripheral source of nociception and thus a driving force in the development of central sensitization. TrPs have been linked to broad pressure pain sensitivity in TTH. However, recent evidence supporting the therapeutic role of TrPs in TTH is equivocal [9]. Coffee, a popular beverage, has recently received a lot of interest due to its significant pharmacological potential. Caffeine (the main component of coffee) is well-known for its strong psychoactive effect. These components have a variety of pharmacological properties, including antioxidant, anti-inflammatory, immunomodulatory, anti-microbial, anti-cancer, cardioprotective, and neuroprotective effects [10]. Recent research has discovered a health-promoting mechanism shared by coffee, vegetables, and fruits: the activation of an adaptive cellular response characterised by the overexpression of proteins involved in cell defence, including antioxidant, detoxifying, and repair enzymes. The stimulation of the Nrf2 (Nuclear factor erythroid 2-related factor-2) pathway by phenolic phytochemicals, which stimulate the production of cell defence genes, is critical to this response. Coffee is the primary dietary source of phenolic acids and polyphenols in the industrialised world, which is why it plays a leading role in this regard.

The regulation of the gut microbiota by non-digested prebiotic elements of coffee is one possible supporting effect, but research on this is limited. We infer that coffee promotes health in the same way that other vegetables and fruits do, that is, through the activation of an adaptive cellular response characterised by the upregulation of proteins involved in cell defence, including antioxidant, detoxifying, and repair enzymes [11]. Nine studies satisfied the inclusion requirements and were evaluated, yielding statistically significant results from the two searches: 2) Superficial heat and massage, connective tissue manipulation, and vertebral Cyriax mobilisation; 3) cervical or thoracic spinal manipulation, and cervical chin-occipital manual traction; 4) massage, progressive relaxation and gentle stretching, active exercises for shoulder, neck, and pericranial muscles; 5) massage, passive rhythmic mobilisation techniques, cervical, thoracic, and lumbar posture correction, and cranial-cervical exercises; 6) gradual muscular relaxation in conjunction with joint mobilisation, functional, muscle energy, strain/counterstrain, and cranial osteopathic treatment; 7) massage aimed for alleviating myofascial trigger point activation 8) muscular energy and pressure release in the suboccipital muscles 9) assemblage includes mobilisation of the cervical and thoracic spine, exercises and postural correction. All studies utilised a variety of approaches and none analysed treatments independently; also, all studies investigated features of TTH other than frequency and intensity of pain [12]. Although behavioural medicine interventions that directly reduce arousal and negative emotions, such as relaxation training (RT), differ conceptually from those that temporarily increase negative emotions, such as written emotional disclosure (WED), no studies have directly compared their efficacy. For both headache samples, RT resulted in an instant increase in serenity, but WED resulted in an immediate increase in negative mood. Intent-to-treat analyses revealed that RT improved headache frequency and disability in the tension-type headache sample relative to both WED and the control group, whereas WED had no effect [13]. Self-management interventions for migraine and tension-type headaches are more effective than usual care in reducing pain intensity, mood, and headache-related disability, but do not affect headache frequency. Preliminary findings also suggest that the effectiveness of treatment may increase if Cognitive Behavioural Therapy, mindfulness, and educational components were included in interventions, as well as delivery in groups [14]. The purpose of this research is to find and prove a relationship between TTH and the medicinal properties of coffee. There was no such direct correlation identified in any previous study. We aim to learn how common TTH is among coffee drinkers as opposed to non-drinkers. We'll also ask about the form, amount, and time of day that medical students drink coffee. We'll learn if medical students believe coffee is as effective in treating headaches as pharmacological treatment.

Figure 1 presents the various characteristics of TTH: discomfort resembling a band around the head, pressure or tightening nature of pain, bilateral in location, no

associated nausea or vomiting and mild or moderate in intensity.

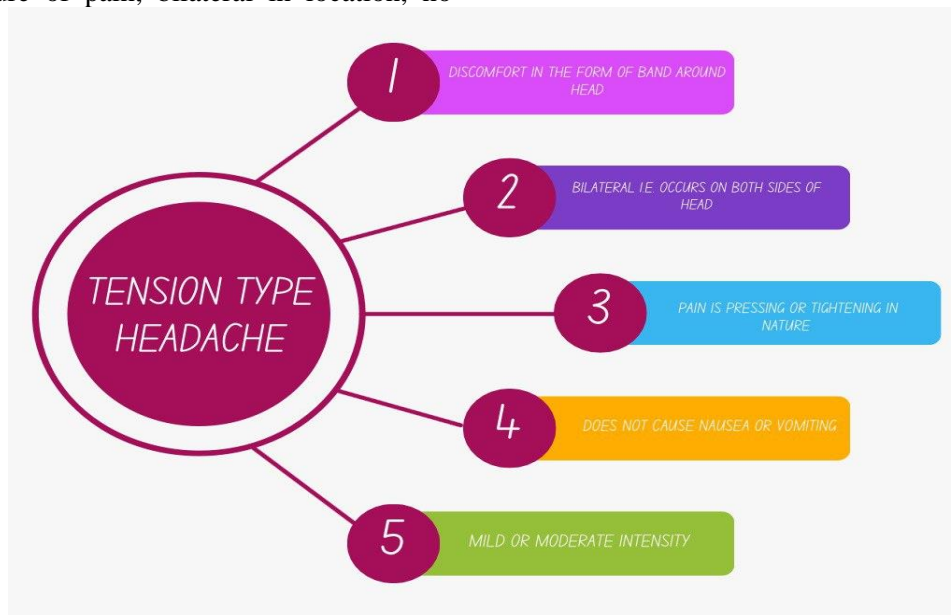


Figure 1. Characteristics of tension-type headache

Study Design - This is a cross-sectional study aimed at MBBS students at Indian Medical Colleges. All participants provided written permission. Data was gathered using a Google survey form. The preliminary research was conducted using PubMed and Google Scholar.

Inclusion criteria - All participants had to be over the age of 18. All participants had to be enrolled in an MBBS programme in an Indian Medical College.

Exclusion criteria - Participants under the age of 18 and those not enrolled in an Indian Medical College MBBS programme were excluded.

Method of sampling – The sample size was calculated based on the following formula (for infinite population) using the sample size formula written below [15]

$$S = Z^2 \times P \times (1 - P) / M^2,$$

where S=sample size for infinite population, Z=Z score, P=population proportion (assumed to be 50% or 0.5), M=margin of error, given: Z=1.960, P=0.5, M=0.05 (the confidence level was taken to be 95% and margin of error 5%). Thus, the sample size was calculated to be 384.16.

Study Tool - The questionnaire was used as a research tool. The questionnaire that was sent out contained consent, demographic information, headache screening, headache characteristics, headache-relieving variables, caffeine screening, and coffee characteristics. The questionnaire was pre-tested on a small group for validity, accuracy, and precision. TTH assessment was done using HSQ-EV. The consent form was obtained from Google Forms and there was a separate consent form explaining the purpose and methodology of the study.

The questionnaire aimed to inquire about the quantity, time, relief and aggravation associated with coffee usage, as presented in Table 1.

Table 1. Questions asked in the survey regarding coffee consumption.

COFFEE SCREENING QUESTIONS
Q1) Do you use caffeine to relieve your headache?
Q2) In which of the following ways do you use caffeine?
Q3) Rate the effectiveness of coffee in relieving your headache.
Q4) During which part of the day do you consume caffeinated products?
Q5) How much improvement do you feel after drinking coffee?
Q6) How effective do you find caffeine in reducing your headache, compared to pharmacological products?
Q7) Does coffee aggravate your headache?
Q8) Rate on the scale how much coffee worsens your headache.

Statistical evaluation –The obtained data was analysed using the Microsoft Excel ToolPak extension.

RESULTS

The number of students who participated in the study was 384. They all gave written consent and agreed to participate in the study.

The number of female students participating in the study was 204 and the number of male students participating in the study was 180, which is 53.11% and 46.875% respectively.

Figure 2 shows the proportions of male and female students participating in the study.

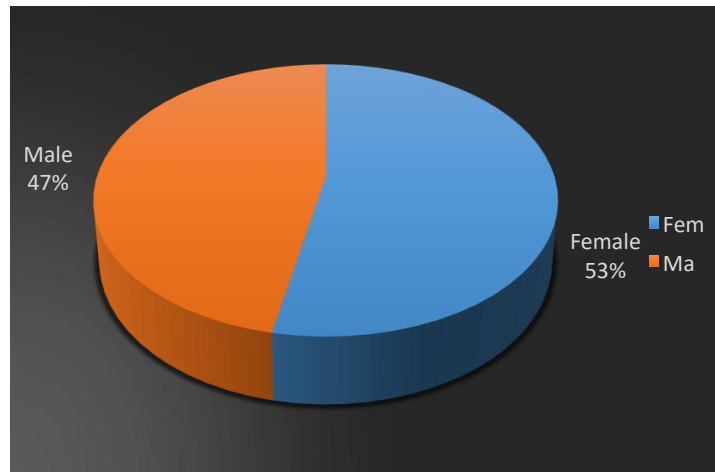


Figure 2. Number of male and female students participating in the study

There were 221 (57.56 %) students from the 1st year, 125 (32.56%) students from the 2nd year, 36 (9.375%) students from the 3rd year, 1 (0.26%) student from the 4th year and 1 (0.26%) student from the internship participating in the study. Table 2 shows the number of students in their respective years of Medical College.

Table 2. Number of students in various years of the MBBS course

YEAR	NUMBER OF STUDENTS
YEAR 1	221
YEAR 2	125
YEAR 3	36
YEAR 4	1
INTERNSHIP	1
TOTAL	384

Of the 384 students included in the study, 346 (90.1%) students were from Jaipur and 308 (80.2%) students experienced headaches in everyday life (Figure 3).

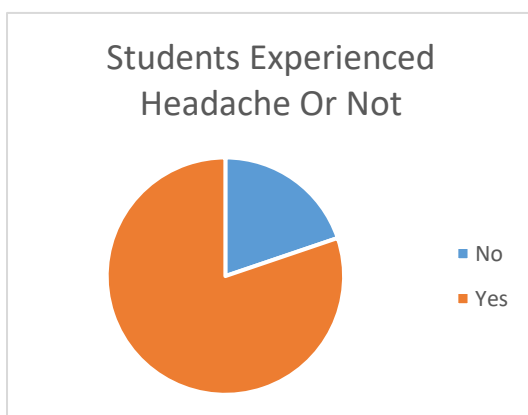


Figure 3. Headache screening

The majority of the students experienced headaches in their everyday life. Of the 308 students who experienced headaches, 199 (64.61%) drank coffee and 84 (27.27%) students drank tea to relieve their headaches. 25 (6.51%) students believed that coffee aggravated their headaches. Students used caffeine mostly in the form of coffee, then tea and dark chocolate. A few students also consumed soda, energy drinks and supplements. Of the 199 students consuming coffee, 114 (57.29%) students used 1 tablespoon per day, 37 (18.6%) students used 2 tablespoons per day, 4 (2.01%) students used 3 tablespoons of coffee per day and 40 (20.1%) students did not use coffee regularly (Figure 4).

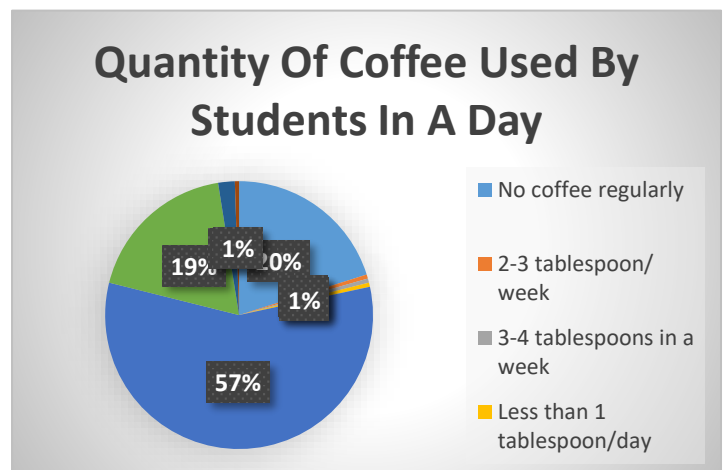


Figure 4. Quantity of coffee used by students

The majority of the students consumed 1 tablespoon of coffee per day, followed by the students who did not consume coffee regularly and then those who consumed 2 tablespoons of coffee per day.

As for the time of day when they consumed coffee, most to 5 pm), then early morning (6 am to 10 am) and of the students consumed coffee late in the evening/afternoon (12 pm to 3 pm) (Figure 5). (between 5 pm to 7 pm), followed by early evening (3 pm

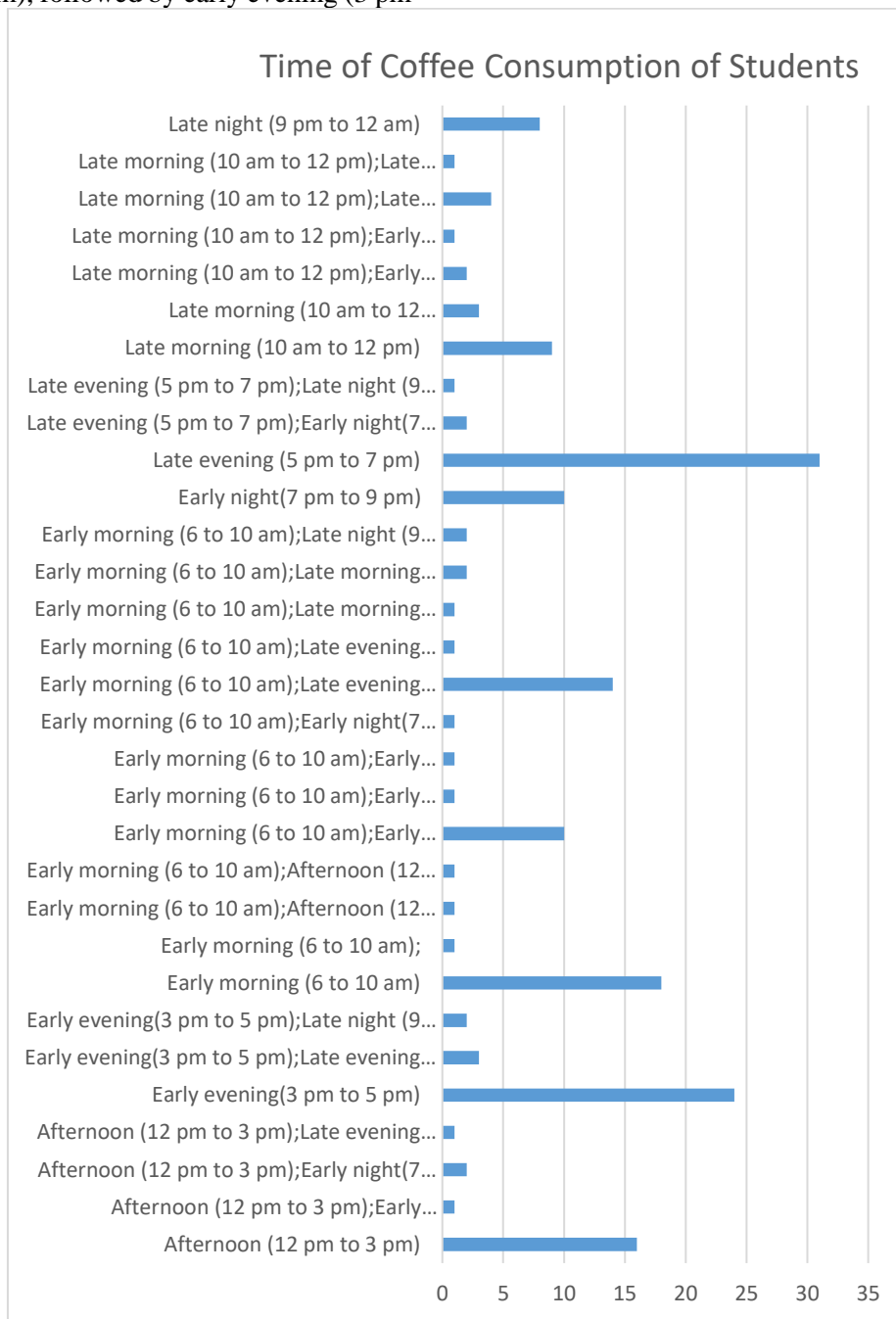


Figure 5. Time of day for coffee consumption by students

As for the effectiveness of coffee in treating headaches compared to pharmacological therapy, 97 (48.74%) students believed that coffee was less effective than pharmacological therapy, 52 (26.13%) students believed that coffee was just as

effective as pharmacological therapy, 28 (14.07%) students believed that coffee had no effect at all, and 22 (11.06%) students believed that coffee was more effective than pharmacological therapy (Figure 6).

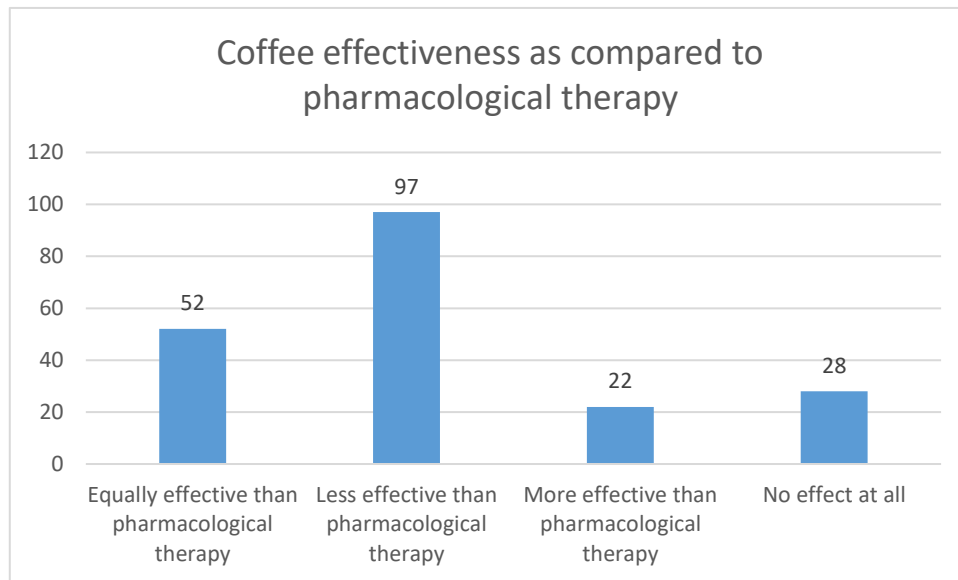


Figure 6. The effectiveness of coffee as compared to pharmacological therapy

When rating the effectiveness of coffee on a scale of 1 to 5 (with 1 being the least effective and 5 being the most effective) 36 students selected 1, 50 students selected 2, 70 students selected 3, 36 students selected 4 and 7 students selected 5. A similar scale was established to rate the aggravation of headaches after consuming coffee (with 5 being the worst and 1 being the least aggravation) and 51 students selected 1, 45 students selected 2, 68 students selected 3, 26 students selected 4 and 8 students selected 5. As for the medication taken by students, 124 students used paracetamol, 91 students used painkillers, 29 students used aspirin and 28 students used diclofenac. Of the 4 students having TTH and taking paracetamol, 3 students used coffee and paracetamol together.

Students who experienced headaches in their everyday lives were screened using the Headache Screening Questionnaire Dutch [16] Version. Of the 199 students who used coffee to relieve their headaches, 93 (46.74%) students were not diagnosed with TTH, 80 (40.2%) students were diagnosed with probable TTH, and 26 (13.06%) students were diagnosed with TTH. Of the 25 students who did not use coffee to relieve their headaches, 13 (52%) were not diagnosed with TTH, 9 (36%) were diagnosed with probable TTH, and 3 (12%) were diagnosed with TTH. The total number of diagnosed cases of TTH in coffee consumers and non-consumers is shown in Table 3. The prevalence of TTH in coffee consumers was found to be marginally higher than in students who did not consume coffee (Table 3).

Table 3. The number of TTH diagnoses among medical students who consume and who don't consume coffee

TTH DIAGNOSIS	STUDENTS WHO DON'T USE COFFEE TO GET RELIEF FROM HEADACHE	STUDENTS WHO USE COFFEE TO GET RELIEF FROM HEADACHE	Grand Total
	(NO)	(YES)	
no TTH	13	93	106
probable TTH	9	80	89
TTH	3	26	29
Grand Total	25	199	224

Regardless of whether the students used coffee or not, of the 308 students, 40 (12.99%) students were diagnosed with TTH, 125 (40.59%) students were diagnosed with probable TTH and 143 (46.43%) students were not diagnosed with TTH.

Among the 18-year-olds, 50% of the cases didn't have the diagnosis of TTH, 35.48% had the diagnosis of probable TTH and 14.52% of the cases did have the

diagnosis of TTH. Among the 19-year-olds, 42.1% of the cases had no diagnosis of TTH, 45.61% had a diagnosis of probable TTH and 12.28% of the cases had a diagnosis of TTH. Among the 20-year-olds, 46.75% of the cases didn't have a diagnosis of TTH, 37.66% had a diagnosis of probable TTH and 15.58% of the cases had a diagnosis of TTH. Among the 21-year-olds, 50% of the cases had no diagnosis of TTH, 37.5% had a diagnosis of probable TTH and 12.5% of the cases had a diagnosis of TTH.

Among the 22-year-olds, 44.12% of the cases didn't have the diagnosis of TTH, 50% had the diagnosis of probable TTH and 5.88% had the diagnosis of TTH. Among the 23-year-olds, 25% of the cases had no diagnosis of TTH, 62.5% had the diagnosis of probable TTH and 12.5 % of the cases did have the diagnosis of TTH. Among the 24-year-olds, 50% of the cases didn't have the diagnosis of TTH, 33.33% had the diagnosis of probable TTH and 16.67% of the cases were diagnosed with TTH.

Among the 170 female students, 74 (43.53%) were not diagnosed with TTH, 74 (43.53%) were diagnosed with probable TTH and 22 (12.94%) students were diagnosed with TTH. Among the 138 male students, 69 (50%) weren't diagnosed with TTH, 51 (36.96%) were diagnosed with probable TTH and 18 (13.04%) students were diagnosed with TTH. The prevalence of TTH among male students is slightly higher than among female students but, as the difference is not significant, it is difficult to discuss the role gender plays in the TTH diagnosis (Table 4).

Table 4. The distribution of students regarding the TTH diagnosis according to gender

Gender	NO TTH	Probable TTH	TTH	Grand Total
Female	74	74	22	170
Male	69	51	18	138
(blank)				
Grand Total	143	125	40	308

The prevalence of TTH in male students is slightly higher than in female students but there is no significant difference. Among the 184 1st-year medical students, 23 (12.5%) students were diagnosed with TTH, 74 (40.22%) were diagnosed with probable TTH and 87 (47.28%) students were not diagnosed with TTH.

Among the 95 2nd-year medical students, 14 (14.74%) were diagnosed with TTH, 38 (40%) were diagnosed with probable TTH and 43 (45.27%) were not diagnosed with TTH. TTH prevalence was slightly higher in 2nd-year medical students as compared to 1st-year medical students (Table 5).

Table 5. The distribution of students regarding the TTH diagnosis according to the year of medical college

	No TTH	Probable TTH	TTH	Grand Total
Internship			1	1
Year 1	87	74	23	184
Year 2	43	38	14	95
Year 3	13	12	2	27
Year 4		1		1
Grand Total	143	125	40	308

The TTH prevalence was slightly higher among the 2nd-year medical students compared to the 1st-year medical students.

The expected range and the observed range values of coffee consumption are close to each other confirming the validity of the data (Table 6).

Table 6. The relationship between the TTH diagnosis and coffee consumption in medical students.

DIAGNOSIS	No Coffee Consumption	Coffee Consumption	Grand Total
no TTH	11.83	94.17	106.00
probable TTH	9.93	79.07	89.00
TTH	3.24	25.76	29.00
Grand Total	25.00	199.00	224.00

The chi-square test value for TTH and coffee is 0.25, the degree of freedom is 2 and the p-value is 0.88. The p-value obtained is greater than 0.05 thereby

establishing that coffee plays no role in relieving tension-type headaches (Table 7 and Table 8).

Table 7. Table demonstrating the chi-square test values for TTH diagnosis against coffee consumption.

(O-E) ² / E	(O-E) ² / E	
	No Coffee Consumption	Coffee Consumption
No TTH	0.12	0.01
Probable TTH	0.09	0.01
TTH	0.02	0.00

Table 8. Table demonstrating chi-square test value (χ^2), the degree of freedom value (df) and the p-value to assess the relationship between TTH and relief provided by coffee.

X²	0.25	Sum of (O-E)²/ E
Df	2.00	(R-1) * (C-1)
p-value	0.88	CHISQ.DIST.RT(X2,DF)

The chi-square value, the degree of freedom and the p-value are used to establish an association between the therapeutic effect of coffee consumption and TTH. There is, however, no association between coffee consumption and TTH.

Since the obtained p-value is greater than 0.05, it is established that there is no proof that coffee has any effect in relieving tension-type headaches. The p-value of 0.88 indicates that under the null hypothesis, these data would have an 88% chance of occurring. Since these data have a high probability of occurring under the null hypothesis, the null hypothesis is likely to be true. The students diagnosed with TTH (13.06%) and probable TTH (40.2%) believed that coffee is likely to relieve their headaches. This may be due to the placebo

effect. In this case, the intake of coffee acts as a placebo curing their headaches. This notion is validated by the fact that 26.13% of the students believed that coffee was equally as effective as pharmacological agents and 11.06% of the students believed that coffee was more effective than pharmacological agents. Although 48.76% of the students believed that coffee was less effective than pharmacological agents in curing headaches, their answer hints that even these students believe that coffee has a role in curing their headaches although it is not as effective as pharmacological agents. The prevalence of TTH in medical students is 12.946%. The prevalence of TTH in coffee users is 13.06%. The prevalence of TTH in students who didn't consume coffee was 12%. This establishes that consuming coffee has no underlying effect on TTH.

DISCUSSION

The results of this study showed no association between the therapeutic effects of coffee and TTH. In addition to that, the prevalence of TTH was only marginally greater in coffee consumers than in students who didn't consume coffee. Nonetheless, a significant number of students believed that drinking coffee was as effective in relieving headaches as pharmacological therapy, establishing that the relief they felt after drinking coffee was the result of a placebo effect.

Our research found that coffee may have an opposite effect to popular belief and aggravate TTH, similar to the findings of a study by Tai MS et al [17] in which coffee was established as a triggering factor for migraine and TTH. Milde-Busch A et al [18] discovered that consuming coffee relates to increased TTH episodes in adolescent age groups, and our current investigation confirms this for young adults.

In the current study, it was discovered that three of four students who had TTH and were taking paracetamol drank coffee and paracetamol together, indicating that the students believed in the healing potential of mixing caffeine and analgesics. These findings are comparable to those of Migliardi JR et al [2], who discovered that caffeine-containing analgesics outperformed both the analgesics alone and the placebo. Students in our study also believed in the practice of drinking coffee and taking analgesics together. In a study conducted by Lipton RB et al [6], it was discovered that combining caffeine with analgesic drugs is more effective in the treatment of TTH than using just the analgesics alone. Although the use of analgesics with caffeine is common in everyday life, no evidence of coffee's contribution to the treatment of TTH has been found.

In the current investigation, male students had a marginally higher prevalence of TTH than female students. This contrasts a prior study by Guruswamy A et al [1], which found that females had a somewhat higher prevalence. This also contradicts the findings of D'Souza PJ et al [12], who discovered that TTH was substantially more frequent in females.

The involvement of female hormones as a triggering factor of TTH was demonstrated in the study by Rasmussen BK et al [8]. In contrast, no such effect of female hormones was observed in the current investigation. In the study by Desouky DE et al [19], the prevalence of TTH in female Saudi students was 29.5%, whereas it was only 12.94% in our study.

Birru EM et al [3] discovered a prevalence of TTH in undergraduate medicine and health science students in Northwest Ethiopia to be 66.81%, compared to 12.946% in our study on undergraduate medical students in India. TTH was found in 40.3% of Kathmandu Valley undergraduate medical students in a study by Shrestha O et al [20]. Rastenyte D et al [21] found that the frequency of TTH was 41.9% in Lithuania.

According to Rasmussen BK et al [8], this large discrepancy may be attributable to differences in TTH precipitating factors such as weather changes and lifestyle conditions.

Coffee has been shown to have neuroprotective properties by Islam MT et al [10]. In our study, no such neuroprotective role was discovered to be beneficial against TTH. It has been demonstrated that coffee has no preventive effect against TTH. Prospective investigations should focus on whether coffee plays a role in the development of TTH. Further research should focus on whether TTH affects one gender more than the other or whether it affects both genders equally.

Limitations of study

Because the sample only comprised of medical students, the study participants are of a younger age group (18-26). Therefore, the results are not valid for the general population, necessitating a bigger multi-centric investigation to reach generalisable conclusions.

CONCLUSIONS

Based on these findings, we were not able to prove the existence of a therapeutic effect of coffee on tension-type headaches (TTH). On the contrary, the prevalence of TTH was found to be marginally higher in coffee consumers. The largest number of students consumed caffeine in the form of coffee, followed by tea and dark chocolate. About 57% students consumed about 1 tablespoon of coffee per day. As for their beliefs, 26.13% of the students believed that coffee is equally as effective as pharmacological agents in treating headache and 11.06% students believed that coffee is more effective than pharmacological agents. The prevalence of TTH in coffee users was 13.06%. The prevalence of TTH in students who do not consume coffee users was 12%. The prevalence of TTH in this study irrespective of coffee consumption is 12.946%. All this data signifies that drinking coffee is a placebo for medical students.

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Ethical approval: Ethical approval was taken.

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ORIGINALNI RAD

**PAN INDIJSKA STUDIJA PRESEKA MEĐU STUDENTIMA MEDICINE O TERAPIJSKOM DEJSTVU
KAFE NA TENZIONU GLAVOBOLJU**

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SAŽETAK

Uvod/Cilj Uvod: Glavobolja tenzionog tipa (GTT) je najčešći tip glavobolje koji pogađa oko 1,89 milijardi ljudi širom sveta. Karakteriše ga tupa i mučna nelagodnost u glavi, osećaj zatezanja cele glave i bolna osetljivost skalpa, vrata i ramena. Kafa je napitak koji se pravi od prženih zrna kafe. Sastojci kafe imaju sposobnost da deluju kao stimulansi CNS-a, čistači slobodnih radikala i imaju antioksidativna svojstva. Glavni cilj ove studije je da se analizira odnos između prisustva GTT-a i konzumacije kafe među studentima medicine. Studija takođe ima za cilj da utvrdi oblik i količinu dnevnog unosa kafe kod studenata medicine, kao i da li oni, za ublažavanje simptoma glavobolje, radije koriste kafu u odnosu na druge farmakološke tretmane.

Metodologija Između 31. avgusta 2023. i 21. septembra 2023. godine izvršena je pan-indijska analiza preseka na nekoliko medicinskih fakulteta u Indiji. Za prikupljanje podataka korišćen je upitnik kome su studenti samostalno pristupali preko internet linkova.

Rezultati: 80% studenata je iskusilo glavobolju u svakodnevnom životu, dok je 51,82% koristilo kafu da umanju svoju glavobolju. Prevalenca GTT -a kod korisnika kafe je iznosila 13,06%. Prevalenca GTT-a kod onih koji nisu pili kafu je bila 12%. Oko 57% studenata je konzumiralo okvirno 1 supenu kašiku kafe dnevno. Po pitanju efikasnosti kafe kao leka za smanjenje glavobolje, 26,13% studenata je smatralo da je kafa podjednako efikasna kao i farmakološka sredstva, dok je 11,06% studenata verovalo da je kafa efikasnija od farmakoloških sredstava.

Zaključak Na osnovu rezultata istraživanja, nismo uspeali da dokažemo postojanje terapijskog efekta kafe na glavobolju tenzionog tipa (GTT). Naprotiv, utvrđeno je da je prevalenca glavobolje tenzionog tipa za nijansu veća kod osoba koje konzumiraju kafu.

Ključne reči: glavobolja tenzionog tipa, kafa, studenti medicine