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Tension headache among University of Ha'il students

Kareemah Alshurtan[1], Othman Mohammed Othman Alodayli[2], Ali Turki A Alodaili[2], Badar Gazza A Alshammari[2]

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Authors' Affiliation:
[1]Assistant professor of internal medicine, Adult critical care, University of Ha'il, KSA
[2]University of Ha'il Medical student, KSA

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ABSTRACT

Background: Around the world, headache has become a significant public health concern. The most widespread type of primary headache is tension headache (TTH). It can affect daily activities and academic performance. *Aim:* The purpose of this study was to find out how common tension headache is and how well students at the University of Ha'il are aware of it. *Method:* A cross-sectional study conducted among University of Hail students. A self-administered questionnaire was distributed among university students. *Results:* A total of 1027 students completed the study questionnaire (52.6% female's vs 47.4% males). 37 responders were eliminated due to reporting in the last 12 months 0 days of headache, which leave us 990 suffering from a headache. The severity of the discomfort is alarming; 59.6% of the students have been impacted by it and are unable to continue with their everyday activities. 30.6 percent of the time, the discomfort is slight and bothersome, but the activity can be continued. Severe pain accounts for 09.8% of the total, waking students from their sleep. The most common cause of triggering was a lack of sleep (36.6 percent). The most popular measure performed to treat headaches without medication was to take a rest. *Conclusion:* Overall, we concluded that the majority of students, especially females, suffer from a tension headache at least seven days a year, which interferes with their daily activities. Headaches were caused by two important variables. A lack of sleep and worry while studying for an exam.

Keywords: Tension headache, chronic headache, university students, pain.

1. INTRODUCTION

One of the most prevalent problems seen in medical practice is headache (Ravishankar, 2016; Abukanna et al., 2021). Despite the fact that headache disorders have no influence on mortality, the Global Burden of Disease (GBD) discovered that they cause more disability-adjusted life years (DALYs) than any other neurologic illness worldwide (DALYs and HALE Collaborators, 2016). Severe and frequent headaches hinder everyday activities and academic performance, resulting in lost productivity (Kurt and Kaplan, 2007). Primary and secondary headaches are the two categories of headaches (Millea and Brodie, 2002). The most prevalent type of primary headache is tension-type headache (TTH), which has lifetime prevalence between 30% and 78%. There

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is a huge socioeconomic impact (Kaniecki, 2015). Tension headaches are typically bilateral in nature, mild to moderate in intensity and feature a pressing or tightening sensation (Ashina et al., 2021). Usually, nausea and vomiting are not present, but there may be photophobia or phonophobia (Ravishankar, 2016).

TTH is classified into episodic (ETTH) and chronic (CTTH). ETTH appears more frequently than CTTH (1–3%) (Jay and Barkin, 2017). Episodic tension-type headache continuing from 30 min to 7 days are subdivided into infrequent subtype and frequent subtype. Chronic TTH is defined as a monthly headache that lasts 15 days or longer (Krishnan, 2009; Fumal, 2008). Tension headaches can be caused by mentally or emotionally demanding situations (McGeeney, 2009). Muscle tension in the back and/or scalp can cause TTH (Ashina, 2004). Management of TTH should make every attempt to keep the disorder from progressing into a chronic condition. Abortive (mainly pharmacological) treatments for each attack and long-term prophylactic (pharmacological or non-pharmacological) treatments are the two forms of TTH treatments (Fumal, 2008). Previous research has revealed that there is a high frequency of headaches among university students (Birru et al., 2008; Falavigna et al., 2010). Exhaustion, anxiety, and pressure are the most prevalent triggers of tension-type headache (TTH), and students' way of life puts them at a higher risk (Souza-e-Silva and Rocha-Filho, 2011).

2. MATERIAL AND METHODS

A cross-sectional investigation was conducted utilizing a questionnaire of nameless participants in Arabic language was performed among the UOH students' population. The online questionnaire was distributed through social media among UOH students, targeting more than 1000 students from different colleges November – December 2021.

Data analysis

Figures and percentages are used to present the information obtained. To evaluate the relationship between severity and various student attributes, the Chi-square test was performed. A p-value of <0.05 (two-sided) was used to indicate statistical significance. Descriptive analysis for characteristics of basic demographic and student who experiences tension headache is based on frequency and percent distribution. Statistical Packages for Software Sciences (SPSS) version 26 (IBM Corporation, Armonk, New York) was used to conduct all data analyses.

Statistical Analysis

The data are presented as numbers and percentages. The relationship between the severeness and the different characteristics of students had been conducted using the Chi-square test. A p-value of <0.05 (two-sided) was used to indicate statistical significance. All data analyses were executed with the IBM Corporation, Armonk, New York, Statistical Packages for Software Sciences (SPSS) version 26.

3. RESULTS

A total of 1027 students completed the study questionnaire. A total of 37 students were reporting no headache. In all, 460 of them were males (46.5%) and 530 (53.5%) were females. 135 of the study individuals were <20 years (13.6%), 739 of them were between 20 and 25 years (74.6%), and 35 of them were more than 25 (03.5%). Students from different colleges participate in this questionnaire.

Table 1 Basic demographic characteristics of students (n=1027)

Study variables	N (%)
Age group	
<20 years	140 (13.6%)
20 – 25 years	851 (82.9%)
26 – 30 years	32 (03.1%)
31 – 35 years	04 (0.40%)
Gender	
Male	487 (47.4%)
Female	540 (52.6%)
College	
College of Letters and Arts	183 (17.8%)
College of Computer Science and Engineering	127 (12.4%)

College of Medicine	121 (11.8%)
College of Business Administration	111 (10.8%)
College of Preparatory Year	103 (10.0%)
College of Engineering	74 (03.1%)
College of Applied Medical Sciences	60 (05.8%)
College of Pharmacy	51 (05.0%)
College of Shariah-Law	44 (04.3%)
College of Sciences	41 (04.0%)
College of Dentistry	32 (03.1%)
College of Nursing	31 (03.0%)
College of Public Health	25 (02.4%)
Applied College	24 (02.3%)
Estimated family monthly income (SAR)	
<3000	187 (18.2%)
3000 – 9000	283 (27.6%)
9001 – 12000	196 (19.1%)
>12000	361 (35.2%)

Demographic data of the respondents

In total, 1027 surveys were received. Table 1 shows the demographic characteristics of the respondents, age, gender, colleges, and estimated family monthly income. There were more female respondents 540 (52.6%) than male respondents 487 (47.4%). 140 respondents were <20 years (13.6%), 851 of them were between 20 and 25 years (82.9%), 32 of them were between 26 and 30 years (03.1%), and 04 of them were between 31 and 35 years (0.40%). Different college's students participated in the questionnaire. In total, 183 (17.8%) were from the College of Letters and Arts, 127 (12.4%) were from the College of Computer Science and Engineering, 121 (11.8%) were from the College of Medicine, 111 (10.8%) were from College of Business Administration, 103 (10.0%) were from College of Preparatory Year, 74 (03.1%) were from College of Engineering, 60 (05.8%) were from College of Applied Medical Sciences, 51 (05.0%) were from College of Pharmacy, 44 (04.3%) were from College of Shariah-Law, 41 (04.0%) were from College of Sciences, 32 (03.1%) were from College of Dentistry, 31 (03.0%) were from College of Nursing, 25 (02.4%) were from College of Public Health, 24 (02.3%) were from Applied College. The estimated family monthly income (SAR) was distributed into 4 groups, less than 3000 with 187 (18.2%), 3000 to 9000 with 283 (27.6%), 9001 to 12000 with 196 (19.1%), and more than 12000 with n=361 (35.2%) which is the highest responding and highest income.

Table 2 Characteristics of students who experienced tension headache (n=990)

Variables	N (%)
How many days during the last 12 months have you suffered from headache?	
0	0
1-7	348 (35.2%)
8-14	224 (22.6%)
15-30	135 (13.6%)
>30 days	283 (28.6%)
Location of headache	
Varies a lot	254 (25.7%)
Frontal	166 (16.8%)
Alternating right and left side	145 (14.6%)
Whole head	111 (11.2%)
Always bilateral	77 (07.8%)
Right side	72 (07.3%)
Alternating uni-bilateral	60 (06.1%)
Back of the head	57 (05.8%)
Left side	30 (03.0%)

Neck and upper part of the shoulder	18 (01.8%)
Type of pain	
Pressing/tightening	387 (39.1%)
Pulsating	420 (42.4%)
Heaviness	31 (03.1%)
Stabbing	132 (13.3%)
Dull	20 (02.0%)
Severity of pain	
Mild (e.g. annoying but can continue activity)	303 (30.6%)
Moderate (e.g. can't continue your activity)	590 (59.6%)
Severe (e.g. wakes you up from sleep)	97 (09.8%)

Table 2 shows the characteristic of students who experienced tension headache with IHS criteria using these variables: number of days in the previous 12 months suffering a headache, location of headache, type of pain, severity of pain (n=990). More than one-third (35.2%) had headache recurrence for 1 to 7 days in the previous 12 months. Of whom, 25.7% reported headaches in different parts of the head while 16.8% said in front of the head. The most frequent form of pain being experienced was pressing/pulsating (42.4%). With regards to the severity of pain, mild, moderate, and severe pain were reported by 30.6%, 59.6%, and 9.8%, respectively.

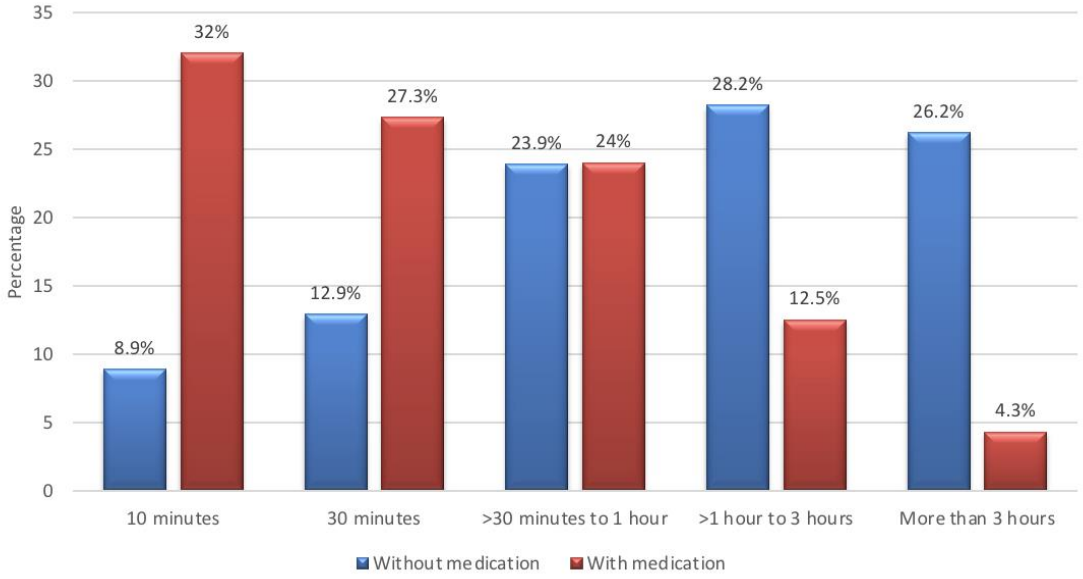

Figure 1 Usual duration of headache with or without taking medication

In Figure 1, illustrates the usual duration of headache with or without taking medication, with a longer headache duration indicating there are no medications used and vice versa. 32% of the students reported that headaches lasted 10 minutes after taking medication compared to 8.9% among those who did not take medication. In contrast, 26.2% reported headaches for more than 3 hours for those who did not take medication compared to 4.3% for those who took medication.

In Figure 2, the most common associated condition of headache was photophobia (36.6%), followed by loss of appetite (25%) and nausea (20.5%). the least reported condition is dizziness. In Figure 3, the most common triggering factor of headache was lack of sleep (36.6%), followed by anxiety with studying for an exam (34.5%) and loud noises (25%). In Figure 4, the most popular action performed to ease headaches without taking medicine was resting, followed by drinking coffee (29.9%) and tying headbands (24 percent). Figure 5 depicted the medication used by the students to alleviate pain. Panadol was the most popular pain management among students (85.5%), followed by Ibuprofen (9.7 percent).

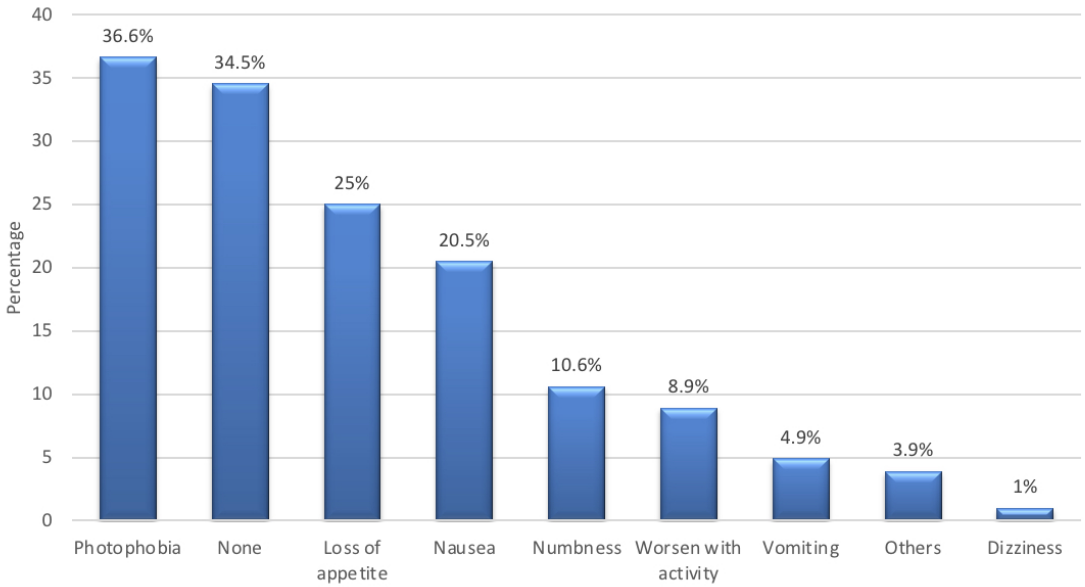

Figure 2 Associated condition of headache

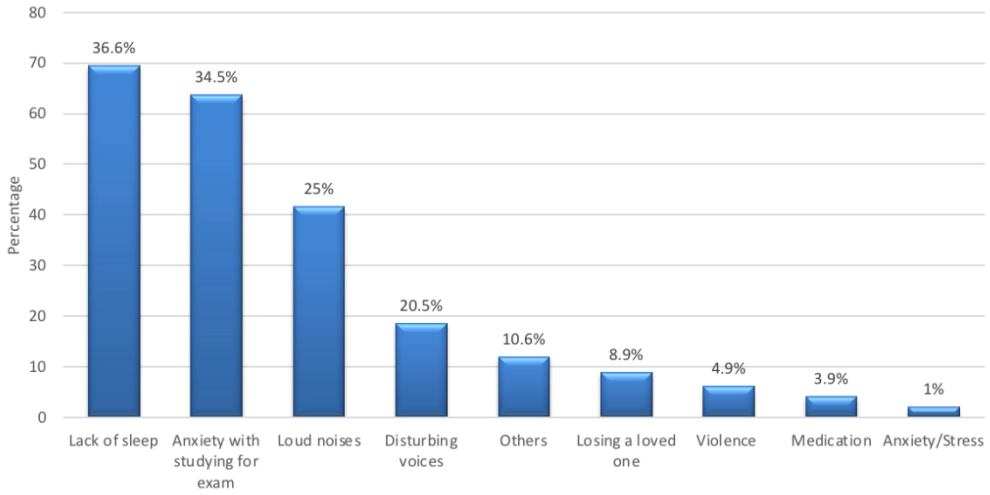

Figure 3 Headache precipitating factors

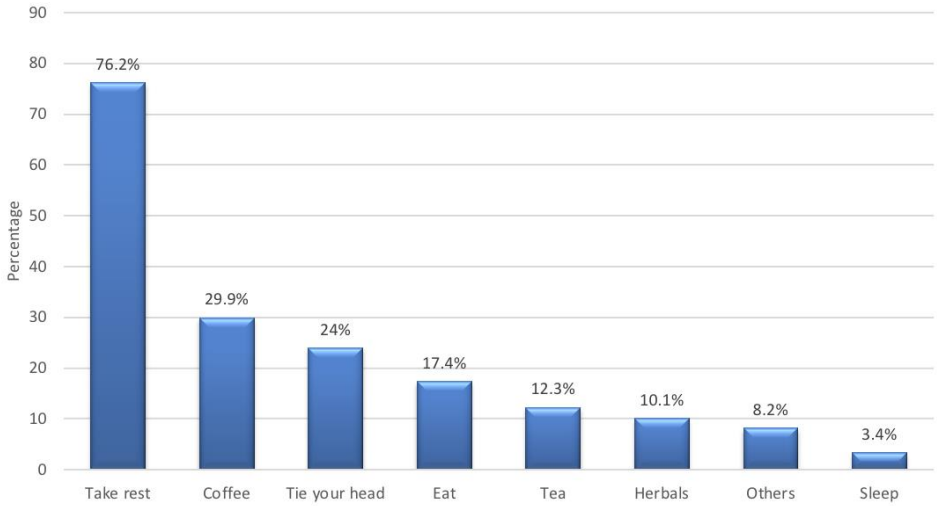

Figure 4 Action taken to relieve headache without medication

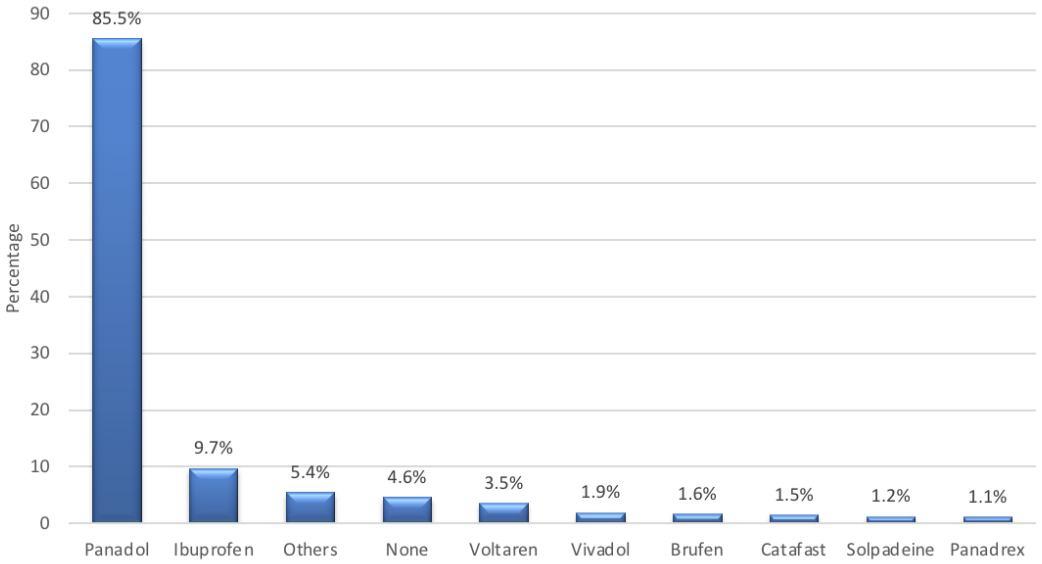

Figure 5 Medication used to relieve pain

Table 3 Relationship between the severity of pain among the basic demographic characteristics and the duration of pain (n=990)

Factor	Mild N (%) (n=303)	Moderate N (%) (n=590)	Severe N (%) (n=97)	P-value §
Age group				
<20 years	47 (15.5%)	77 (13.1%)	11 (11.3%)	
20 – 25 years	254 (83.8%)	483 (81.9%)	83 (85.6%)	0.013 **
>25 years	02 (0.70%)	30 (05.1%)	03 (03.1%)	
Gender				
Male	191 (63.0%)	238 (40.3%)	31 (32.0%)	<0.001 **
Female	112 (37.0%)	352 (59.7%)	66 (68.0%)	
College				
Letters and Arts	41 (13.5%)	110 (18.6%)	30 (30.9%)	
Computer Science and Engineering	31 (10.2%)	78 (13.2%)	14 (14.4%)	
Medicine	57 (18.8%)	55 (09.3%)	02 (02.1%)	
Business Administration	21 (06.9%)	79 (13.4%)	10 (10.3%)	
Preparatory Year	28 (09.2%)	62 (10.5%)	08 (08.2%)	
Engineering	25 (08.3%)	37 (06.3%)	09 (09.3%)	
Applied Medical Sciences	16 (05.3%)	35 (05.9%)	04 (04.1%)	<0.001 **
Pharmacy	25 (08.3%)	22 (03.7%)	03 (03.1%)	
Shariah-Law	22 (07.3%)	11 (01.9%)	05 (05.2%)	
Sciences	07 (02.3%)	26 (04.4%)	08 (08.2%)	
Dentistry	11 (03.6%)	20 (03.4%)	0	
Nursing	08 (02.6%)	19 (03.2%)	02 (02.1%)	
Public Health	06 (02.0%)	18 (03.1%)	01 (01.0%)	
Applied College	05 (01.7%)	18 (03.1%)	01 (01.0%)	
Estimated family monthly income (SAR)				
<3000	37 (12.2%)	118 (20.0%)	29 (29.9%)	<0.001 **
3000 – 9000	76 (25.1%)	170 (28.8%)	27 (27.8%)	

9001 – 12000	59 (19.5%)	118 (20.0%)	14 (14.4%)	
>12000	131 (43.2%)	184 (31.2%)	27 (27.8%)	
How many days during the last 12 months have you suffered from headache?				
1-7	166 (54.8%)	170 (28.8%)	12 (12.4%)	<0.001 **
8-14	66 (21.8%)	139 (23.6%)	19 (19.6%)	
15-30	26 (08.6%)	91 (15.4%)	18 (18.6%)	
>30 days	45 (14.9%)	190 (32.2%)	48 (49.5%)	
Duration of a headache without medication				
10 minutes	47 (15.5%)	22 (03.7%)	0	<0.001 **
30 minutes	68 (22.4%)	59 (10.0%)	01 (01.0%)	
>30 minutes to 1 hour	88 (29.0%)	137 (23.2%)	15 (15.5%)	
>1 hour to 3 hours	62 (20.5%)	202 (34.2%)	22 (22.7%)	
>3 hours	38 (12.5%)	170 (28.8%)	59 (60.8%)	
Duration of headache with medication				
10 minutes	155 (51.2%)	141 (23.9%)	06 (06.2%)	<0.001 **
30 minutes	92 (30.4%)	162 (27.5%)	22 (22.7%)	
>30 minutes to 1 hour	41 (13.5%)	179 (30.3%)	21 (21.6%)	
>1 hour to 3 hours	10 (03.3%)	87 (14.7%)	31 (32.0%)	
>3 hours	05 (01.7%)	21 (03.6%)	17 (17.5%)	

When measuring the connection between the severity of pain according to the basic demographic characteristic and the duration of pain experienced by the students, it was discovered that the prevalence of severe pain was more common among the age group 20 – 25 years ($p=0.013$), gender female ($p<0.001$), those with less than 3000 SAR family monthly income ($p>0.001$) those who had more than 30 days of headache for the last 12 months ($p<0.001$), those who had more than 3 hours duration of a headache without medication ($p<0.001$) and those who developed a headache that lasted more than one hour to three hours with taking treatment ($p<0.001$) (Table 3).

4. DISCUSSION

Tension-type headaches are the most prevalent type of main headache (TTH). TTH can have an impact on daily activities, academic achievement, and productivity (Kurt and Kaplan, 2007). In past literature, there was an emphasis on smaller populations. A wider range study was needed to look into the prevalence of TTH in high education institutions. The present study is conducted to determine the prevalence of tension headaches being experienced by the University of Hail students and understand their awareness of it. According to the findings, one-third of the students had episodic headaches (1–7 days) in the previous 12 months, whereas 40.7 percent had chronic headaches (15 days or more). Furthermore, nearly 60% of students in the university research said they had moderate headaches, 31.9 percent said they had mild headaches, and 9.5 percent said they had severe headaches. These findings are almost identical to those of (Hatem et al., 2018). They discovered that 57.3 percent of 150 medical students had TTH, with 52 percent experiencing episodic symptoms and only 5.3 percent experiencing chronic symptoms.

The most prevalent type of headache among medical students was moderate (58%) followed by mild (40%) and severe (2percent). In another study published by (Ferri-de-Barros et al., 2011), the students indicated that headache symptoms had minimal influence on their daily schedule including social or academic, however, about 36% of those with pre-diagnosed TTH reported worsening conditions since being admitted to the university. According to the preponderance of the literature, females were more seriously affected by headaches than males. This was also true in our research, which revealed that severe headaches were very common among females. Surprisingly, we discovered that those aged 20 to 25 experienced more severe headaches than people of other ages. This is not consistent with the paper of (Desouky et al., 2019). They reported that a remarkably elevated prevalence of headaches had been found among older grades level.

Some papers reported that increasing levels of education had been linked to an increased amount of headaches, or it is associated with studying hours, exposure the stressful conditions, and a family history of headaches (Birru et al., 2008; Al Jumah et al., 2020). It's more likely that as the academic year continued, more students were exposed to stressful conditions, resulting in a rise in headaches among Saudi university students. Such that, Al Jumah et al., (2020), reiterated that the prevalence of Tension-type and migraine headaches in Saudi Arabia could be considerably higher than the average global prevalence. Pressing or tightening pain (42%) was the most frequent type of pain being experienced by students followed by pulsating pain (39.5%), other types of pain were heaviness (13.2%), stabbing (3%), and dull pain (2.2%).

In Iraq (Hatem et al., 2018), constant pressure, pulsating and throbbing were the most typical type of pain for medical students which is almost consistent with our reports. Moreover, lack of sleep (36.6%) was the aggravating factor in headaches. This is not consistent with the literature, based on our investigations; stress was the most commonly mentioned precipitating factor associated with headaches as reported by various papers (Falavigna et al., 2010; Desouky et al., 2019; Yaremchuk and Yaremchuk, 2017). In our study, only 1% of students reported stress as the reason for their headaches, however, more than one-third (34.5%) reported anxiety with studying for the exam as the second most aggravating factor of headaches. It can be observed that 32% of the students indicated that their headache lasted for 10 minutes after taking medications and the most dominant medication being taken was analgesic specifically Panadol (85.5%). For students who preferred to relieve headaches without medication, most of them preferred to take a rest (76.2%), others take a coffee break (29.9%), tie head (24%), and eat (17.4%), hence, we observed that 54.4% of students reported of 1 hour to more than 3 hours duration of headache when not taking medication which was longer than those who took medications.

In this study the prevalence was 990 out of 1027 (96.39%), on the other hand, another study was conducted within a Turkish college was to be found (20.35%) (Kaynak Key et al., 2004). There is a notable difference between the two studies due to the methods. In our study, the most common aggravating factor is Lack of sleep (36.6%) in Turkish college the most frequent aggravating factor was stress (52%) (Kaynak Key et al., 2004). Non-pharmacological action used to relieve was found to be Rest (76.2%) but in (Kaynak Key et al., 2004) rest was found the most used action (58.1 percent). The main analgesics used were Panadol (85.5%). Further, adding more analgesic doses more frequently would lead to adverse effects including hepatotoxicity, withdrawal syndromes, medication overuse headache, and many more (Tepper, 2012; Dyb et al., 2006).

We ran upon certain limits in this research. Firstly, we could not assess accurate prevalence due to different student assumption and thought about the nature of TTH. Moreover, recall bias was reduced by simplifying the questionnaire items. Lastly, because the international headache society criteria were followed, the possibility of observer bias in the diagnosis of headache condition was reduced.

5. CONCLUSION

University students were moderately influenced by tension headaches which hinder them from doing their daily activities. Of all students, females who were in their twenties with less family monthly income were the most affected by the headaches as compared to the other students. Lack of sleep, anxiety about an exam, and loud noises were the most aggravating factors reported by university students. The outcome of this study indicates the need to devise strategies addressing the current dilemma of university students. As the effect of headaches is a detrimental factor for daily activities, the institutional management, policymakers, and Professionals in the healthcare field should collaborate to address the rising occurrence of headaches among students. Recognizing the value of maintaining a balanced life can help to reduce headache progression.

Ethics statements & approval

All ethical issues which were likely to arise from the conduct of the study were considered as part of the preparation and administration of the survey. Survey questionnaires were only shared with those above 18 years who were willing to volunteer information. Ethical approval by Research Ethics Committee at University of Hail, number H-2021-201.

Informed consent

Informed consent was obtained from participants in the beginning of electronic questionnaire

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Conflicts of interest

The authors declare that there are no conflicts of interests.

Data and materials availability

All data associated with this study are present in the paper.

REFERENCES AND NOTES

1. Abukanna AMA, Alenezi NAA, Alenezi AAT, Alenezi MAT. Prevalence and impact of primary headache on quality of life in the general population of Arar, Northern Saudi Arabia. Medical Science, 2021;25(115):2431-2439
2. Al Jumah M, Al Khathaami AM, Kojan S, Hussain M, Thomas H, Steiner TJ. The prevalence of primary headache disorders in Saudi Arabia: a cross-sectional population-based study. J Headache Pain 2020; 21(1):11. doi: 10.1186/s10194-020-1081-1. PMID: 32033539; PMCID: PMC7006418.
3. Ashina M. Neurobiology of chronic tension-type headache. Cephalalgia 2004; 24(3):161-72. doi: 10.1111/j.1468-2982.2003.00644.x. PMID: 15009009.
4. Ashina S, Mitsikostas DD, Lee MJ, Yamani N, Wang SJ, Messina R, Ashina H, Buse DC, Pozo-Rosich P, Jensen RH, Diener HC, Lipton RB. Tension-type headache. Nat Rev Dis Primers 2021; 7(1):24. doi: 10.1038/s41572-021-00257-2. PMID: 33767185.
5. Birru EM, Abay Z, Abdelwuhab M, Basazn A, Sirak B, Teni FS. Management of headache and associated factors among undergraduate medicine and health science students of University of Gondar, North West Ethiopia. J Headache Pain 2016; 17:56. doi: 10.1186/s10194-016-0647-4. PMID: 27216280; PMCID: PMC4877336.
6. Desouky DE, Zaid HA, Taha AA. Migraine, tension-type headache, and depression among Saudi female students in Taif University. J Egypt Public Health Assoc 2019; 94(1):1-9.
7. Dyb G, Holmen TL, Zwart JA. Analgesic overuse among adolescents with headache: the Head-HUNT-Youth Study. Neurol 2006; 66(2):198-201. doi: 10.1212/01.wnl.0000193630.03650.19. PMID: 16434653.
8. Falavigna A, Teles AR, Velho MC, Vedana VM, Silva RC, Mazzocchin T, Basso M, Braga GL. Prevalence and impact of headache in undergraduate students in Southern Brazil. Arq Neuropsiquiatr 2010; 68(6):873-7. doi: 10.1590/s0004-282x2010000600008. PMID: 21243244.
9. Ferri-de-Barros JE, Alencar MJ, Berchielli LF, Castelhano Junior LC. Headache among medical and psychology students. Arq Neuropsiquiatr 2011; 69(3):502-8. doi: 10.1590/s0004-282x2011000400018. PMID: 21755130.
10. Fumal A, Schoenen J. Tension-type headache: current research and clinical management. Lancet Neurol 2008; 7(1):70-83. doi: 10.1016/S1474-4422(07)70325-3. PMID: 18093564.
11. GBD 2015 DALYs and HALE Collaborators. Global, regional, and national disability-adjusted life-years (DALYs) for 315 diseases and injuries and healthy life expectancy (HALE), 1990-2015: a systematic analysis for the Global Burden of Disease Study 2015. Lancet 2016; 388(10053):1603-1658. doi: 10.1016/S0140-6736(16)31460-X. Erratum in: Lancet 2017; 389(10064):e1. PMID: 27733283; PMCID: PMC5388857.
12. Hatem AK, Al-Johar ZA, Idrees RA, Khalaf MA, Shawket WA. The Prevalence of Tension Type Headache among Students of Baghdad College of Medicine in 2018. Indian J Public Health Res Dev 2019; 10(10).
13. Jay GW, Barkin RL. Primary Headache Disorders- Part 2: Tension-type headache and medication overuse headache. Dis Mon 2017; 63(12):342-367. doi: 10.1016/j.disamonth.2017.05.001. PMID: 28886861.
14. Kaniecki RG. Tension-type headache. Continuum (Minneap Minn) 2012; 18(4):823-34. doi: 10.1212/01.CON.0000418645.32032.32. PMID: 22868544.
15. Kaynak Key FN, Donmez S, Tuzun U. Epidemiological and clinical characteristics with psychosocial aspects of tension-type headache in Turkish college students. Cephalalgia 2004; 24(8):669-74. doi: 10.1111/j.1468-2982.2004.00736.x. PMID: 15265056
16. Krishnan A, Silver N. Headache (chronic tension-type). BMJ Clin Evid 2009; 2009:1205. PMID: 21696647; PMCID: PMC2907789.
17. Kurt S, Kaplan Y. Epidemiological and clinical characteristics of headache in university students. Clin Neurol Neurosurg 2008; 110(1):46-50. doi: 10.1016/j.clineuro.2007.09.001. PMID: 17949895.
18. McGeeney BE. Tension-type headache. Tech Reg Anesth Pain Manag W.B. Saunders; 2009 https://doi.org/10.1053/j.trap.2009.03.005
19. Millea PJ, Brodie JJ. Tension-type headache. Am Fam Physician 2002; 66(5):797-804. PMID: 12322770.
20. Ravishankar K. WHICH Headache to Investigate, WHEN, and HOW?. Headache 2016; 56(10):1685-1697. doi: 10.1111/head.12998. PMID: 27796030.
21. Souza-e-Silva HR, Rocha-Filho PA. Headaches and academic performance in university students: a cross-sectional study. Headache 2011; 51(10):1493-502. doi: 10.1111/j.1526-4610.

2011.02012.x. PMID: 22082420.

22. Tepper SJ. Medication-overuse headache. Continuum (Minneap Minn). 2012; 18(4):807-22. doi: 10.1212/01.CON.0000418644.32032.7b. PMID: 22868543.
23. Yaremchuk I, Yaremchuk O. Headache among medical students in Bukovina Region of Ukraine: PS105. Porto Biomed J 2017; 2(5):234-235. doi: 10.1016/j.pbj.2017.07.137. PMID: 32258747; PMCID: PMC6806847.