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Research Article

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Migraine among Princess Nourah Bint Abdulrahman University Students in Riyadh, Saudi Arabia

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Abstract

Background: *Migraine is a psych neurological disorder that represents a remarkable global and international health problem due to its frequency and substantial disability. Migraine is highly prevalent among university students and it is accompanied with impaired academic performance and limited daily activities. We aimed to determine the prevalence of migraine among PNU students.*

Objectives: *To Estimate the prevalence of migraine among PNU students, in medical and other (non-health) colleges, to identify its common triggers, and assess its severity and effects on the students' life.*

Materials and Methods: *This is cross-sectional, questionnaire based study, of convenient sampling technique. 523 students out of 539 participated students were included. Participants who had two or more headaches in the last 3 months formed the headache group. Afterwards, two preliminary questions were applied to the headache group and participants with at least one affirmative response were asked to perform the validated ID-Migraine test.*

Results: *The mean age of the participants was 20.97±1.6 years; 448/523 students (85.7%) were screened positive for headache. Migraine was detected among 234/523 of the students (45%); 17% were medical and 55% were non-health colleges. Lack of sleep 89.3%, stress74.8%, and menstruation 46.6% were the most triggering factors of migraine. This study showed significant association between migraine headache and studying in non-health colleges (P =0.001). In medical students, the median pain level was III (moderate) and Migraine Disability Assessment Score was I (little).*

Conclusion and Recommendations: *The prevalence of migraine among PNU students was high compared to other studies. Further studies should be carried out by neurologist for more knowledge about migraine among students' population.*

Keywords: Migraine, Prevalence, Females, Student, MIDAS, KSA

Background

Migraine is one of the most prevalent neurological disorders. The public health burden of migraine is substantial due to its high prevalence and prominent temporary disability [1]. It is a disabling painful condition that is more prevalent three times amongst women, especially young and middle aged women [2]. Migraine is highly prevalent among university students and it is associated with impaired academic performance and limited daily activities. It has negative effects among university students, who indeed require constant concentration and high level of performance [3]. Today, migraine becomes of considerable interest among university students due to its negative effects on their concentration, performance and quality of life [2].The prevalence of migraine among medical students ranges from 11 to 40% worldwide [4].

In Saudi Arabia, the number of studies related to the amount of migraine among university students is not much. the aim of this study is to assess the prevalence of migraine headache among female students at Princess Nora University, Kingdom of Saudi Arabia, also to identify the common triggers of migraines among female students in PNU, to assess the severity of migraine and its effects on students life, and to determine the prevalence of migraine in medical and other (non-health) colleges.

Material and Methods

Study Setting and design

A cross-sectional, questionnaire-based study was done among Princess Nora University, during the academic year 2016-2017.

Sample Size

Previous literature showed that the average percentage of migraine in female in Saudi Arabia is 11%. With a margin of error of 4%, level

of confidence of 95 %(α=0.05), beta=0.20 and power of study of 80%, the minimal sample size required to reject the null hypothesis is 415. The study was conducted by convenient sampling technique on 539 female students who filled out the questionnaire, and we excluded 16 participants due to incomplete questionnaires.

Data Collection methods, measurements

The data of this study will be collected from students' self-reports, by filling the validated questionnaire taken from a published studies [5, 6]. The questionnaire data include demographic information (age, sex); a stepwise evaluation is used to determine the prevalence of migraine type headache. Students who replied "yes" to the first question "Did you have two or more headaches in the last 3 months?" were considered as the subjects with headache and asked the preliminary questions.

Participants giving one positive response out of two were considered as the subjects who are likely to have migraine type headaches and asked the 3- item ID Migraine test. Subjects with two positive responses out of those three were considered having migraine headache, and then answer the migraine related questions regarding other family members having migraine, trigger factors, the severity of the pain using the NRS(Numeric Rating Scale) of pain, and then the Migraine Disability Assessment (MIDAS) score was applied, it represents the sum of days missed from work, housework or social activities plus impaired productivity days by at least half at work and in household activities (figure 1).

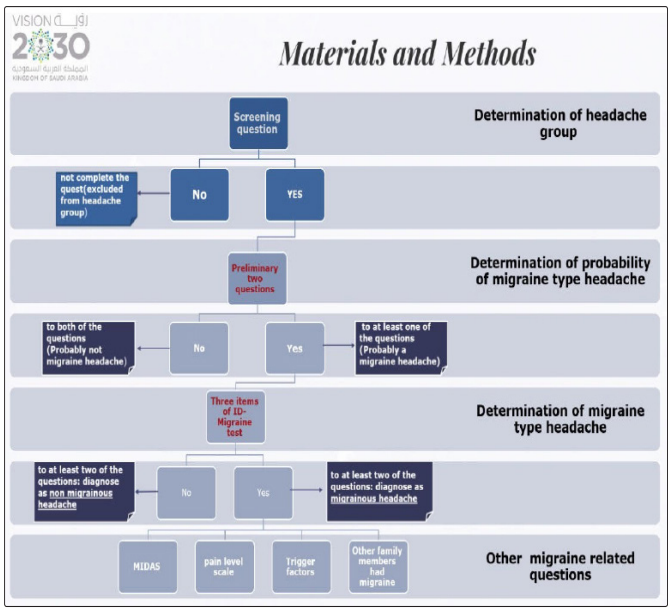

Figure 1: Flow chart of the study

Data Management and analysis

Descriptive statistics in terms of means, standard deviations, median and interquartile ranges were used to describe criteria of the studied sample. Analysis of quantitative data by t-test and association of qualitative variables by chi-square test was conducted. P-value less than 0.05 were considered as statistically significant. Statistical analysis was conducted by SPSS software version 16.

Ethical Considerations

Informed consent was obtained from each of the participants after explaining the objective of the study. The study was conducted after getting approval from the Institutional Review Board (IRB) of Princess Nourah Bint Abdulrahman University.

Results

Out of 539 female students included in this study the study, data collected from 523 participants were analysed. The mean age of the participants was 20.97 ± 1.64, ranging from 17 to 31 years; Socio demographic data of the study group are shown in (table 1).

Table1: Socio-demographic data of study subjects

Social demographic data	Students (N= 523)	
Age (Years): (Mean± SD)	20.97± 1.64	
	N	%
College		
➢ Medical college	82	15.7 %
➢ Health colleges	135	25.8 %
➢ Other	306	58.5 %
Level		
➢ 1-4	279	53.8 %
➢ 5-8	212	40.8 %
➢ 9-12	28	5.4 %
Marital state		
➢ Married	30	5.7 %
➢ Single	488	93.5%
➢ Other	4	8 %
Residence		
➢ With family	467	89.8 %
➢ Student housing	14	4.6 %
➢ Other	29	5.6 %

448/523 students (85.7%) were screened positive for headache. Migraine was detected among 234/523 of the students (45%); 16.7% were medical and 54.75% were non-health colleges (Table 2). This study showed significant association between migraine headache and studying in non-health colleges (P=0.001).

Table2: Socio-demographic data of migraine subjects

Social demographic data	Students (N= 523)	
Age (Years): (Mean± SD)	20.93± 1.57	
	N	%
College		
➢ Medical college	39	16.7 %
➢ Health colleges	67	28.6 %
➢ Other	128	54.75 %
Level		
➢ 1-4	124	53.7 %
➢ 5-8	99	42.9 %
➢ 9-12	8	3.5 %
Marital state		
➢ Married	18	7.7 %
➢ Single	214	99.1%

➢ Other	2	100.0 %
Residence		
➢ With family	204	87.6 %
➢ Student housing	15	6.4 %
➢ Other	14	6.0 %
Family history of migraine		
➢ Yes	91	38.9 %
➢ No	143	61.1 %

Lack of sleep 89.3%, stress74.8%, and menstruation 46.6% were the most triggering factors of migraine (figure 2).

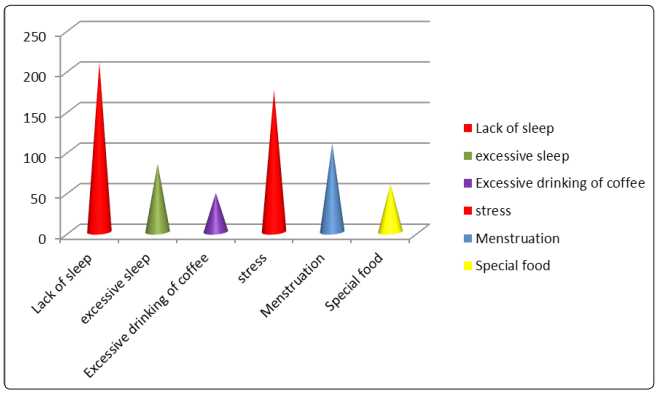

Figure 2: Migraine triggering factors among students at PNU.

The severity of pain level (figure3) and MIDAS score (figure 4) were higher among non-health college students.

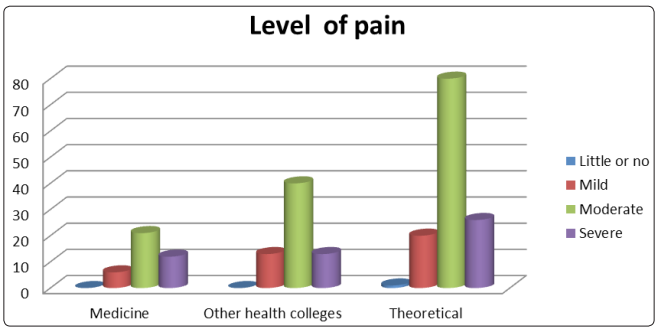

Figure 3: Level of pain among PNU students

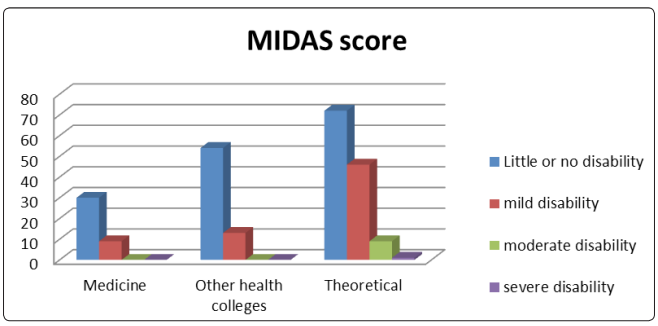

Figure 4: MIDS Score among PNU students

In this study there was a significant relation between the severity of pain and MIDAS score (Table 3).

Midas	**Level of pain**	
	Pearson correlation	.179**
	Sig(2-tailed)	.003
	N	.232

** Sig = 0.05

Table 3: The relation of the severity of migraine and MIDAS score in the three group of colleges.
In medical students, the median pain level was III (moderate) and Migraine Disability Assessment Score was I (little).

Discussion

This is the first registered study that estimates the prevalence of migraine among female students in different colleges of PNU, Riyadh in Saudi Arabia. There are few studies focusing on migraine among university students in Arab Gulf Countries showing noticeable differences in prevalence [1].

Reported migraine prevalence in a study done at king Saud University in Riyadh was 25.7% among 400 female students [1]. Another study also done in Saudi Arabia showed that the prevalence of migraine among female students in Taibah University in was 61.8% [2]. While in other gulf countries it was 12.2% in Oman, and 7.9% in Qatar [7, 8].

Our study results has showed that the migraine headaches prevalence is (45%) relatively similar to other national studies, but high compared to many other international studies in the world. The prevalence of migraine among university students is reported to be 8.9% in a Croatian study among 314 students, 7.0% in a Norwegian study among 5847 students, and 6.4% in a Nigerian study among 376 students [9-11].

Migraine prevalence based on ID Migraine among medical students in PNU was 17%; the prevalence of migraine among medical students is variable worldwide. We found that the prevalence of migraine in our study is low compared to other international studies. The prevalence of migraine among medical students reported to be 27.9% in Kuwait University (21.4% in males versus 31.1% in females) [3]. The prevalence of Migraine among medical students is 22% in Brazil [4], 12.2% in in Oman [8], 14.1% in Nigeria, 33.8% in Nairobi, 13.1% in South East Nigeria, 12.6% in Turkey, and 7.14% in the Southeast of Iran, and 28% in India [11-16).

The difference between our results and other international studies in the prevalence of migraine could be explained by the fact that all the participant students of our study were females, the timing was different if the study were to be conducted during stressful times such as examinations, it would probably increase the prevalence of migraine headaches since the screening test analyses the presence of headache in the previous three months as in this study. Other causes may be genetic characteristics, difference in cultural aspects, or climate and environmental, racial, and socioeconomic status, nutritional habits could also play a role in the differentiation whereas be contributing factors for migraine in these different countries [17]. However, the reason for higher rates in our study could be due to the fact that the diagnosis was based only on a self-administered

questionnaire without physical examination.

In this study, lack of sleep (89.3%) is the most common trigger factor for migraine, followed by stress 74.8%, and menstruation 46.6%; Neyaz etal who showed that life style changes as (change in sleep pattern) in (66.0%) and stress in (56.1%). Whereas in other studies (1, 2, 18) irregular sleep was reported in 80.6%, stress in 83.5% of migraineurs participants.

Unexpectedly, there was significant association between migraine headache and studying in non-health colleges (P =0.001) [1, 2]. This agreed with previous, where migraine prevalence was higher among theoretical collage in comparison to practical collage (26%) and (56%) respectively.

This finding could be assigned to the fact that most female students in non-health colleges get engaged or married earlier than that in Health College with more burden of their emotional stress as a provoking factor for migraine.

Regarding the MIDAS score, the present study showed that 67% had grade I, and 29% had grade II. However in other studies, grade III were present in 23.3% and 26.6% respectively; while grade IV were present in 32% and 42.4 % respectively [1, 19].

Limitation of the study

The migraine students were not interviewed by neurologist, so clinical records and the headache diaries were not utilized.

Conclusions

The study shows that the prevalence of migraine among female students in PNU was high (45%), compared to other studies. Lack of sleep 89.3%, stress 74.8%, and menstruation 46.6% were the most common triggering factors for migraine among PNU students.

This study also showed significant association between migraine headache and studying in non-health colleges (P =0.001).

Recommendations

Since migraine prevalence was high among PNU students, primary care physicians should be aware of its probability for early diagnosis and better management to enhance the students' academic performance. Further larger studies should be carried out by neurologist to have more in depth knowledge of migraine in the students' population.

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