



A DESCRIPTIVE STUDY ON TRIGGERING FACTORS OF MIGRAINE AMONG STUDENTS OF SELECTED COLLEGE IN MANGALORE

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ABSTRACT

BACKGROUND OF THE STUDY

Migraine is commonly identified as a neurological disease which can lead to moderate to severe or throbbing pain. Migraine is a medical condition that involves not only headache but can lead to other symptoms also. It is most commonly said to be a recurrent type of headache. It can last for a few hours or even days. Migraine likely starts when overactive nerve cells send out signals that trigger your trigeminal nerve, which gives sensation to your head and face. This cues your body to release chemicals like serotonin and calcitonin gene-related peptide (CGRP). CGRP makes blood vessels in the lining of your brain swell. Then, neurotransmitters cause inflammation and pain. Triggering factors of migraine are mainly defined as the causes which can lead to migraine. There are numerous triggers of migraine mainly based on the demographic variables such as age, gender, education, residency and family history. The main aim of the study among the 50 samples of migraine is to assess the triggering factors and the association of the trigger with the above demographic variables. **Objectives of the study:** To assess the triggering factors of migraine, To find the association between the triggering factors of migraine with selected demographic variables. **Method:** A descriptive study approach has been used in view of accomplishing the main objectives of the study. The tool consisted of demographic proforma along with the structured questionnaire to assess the triggering factors of migraine among the students. The subject consisted of 50 samples who met the inclusion criteria. These samples were selected by non-probability convenient sampling techniques. The formal written permission was obtained from the concerned authority to conduct the study. Informed consent was taken from the samples before collecting the data. The data was analyzed using Descriptive and inferential statistics under SPSS version 16. **Result:** The result shows that 44% of samples belongs to the age group of 20years old, 56% of samples belongs to the age group of 21-25years. 92% samples were female and 8% of sample were male. 74% had an undergraduate education and 26% of samples were postgraduate. 64% of samples were rural, 36% of samples were urban. 66% of samples were not having family history of migraine and 34% of samples were having

family history of migraine.. Migraine triggers included summer weather (86%), stress (40%), and sleep deprivation of 1-3hours (40%). Significant associations were found between education level and migraine triggers ($p=0.010$), age and sleep deprivation ($p=0.025$), and age and aggravating factors ($p=0.032$).

Conclusion: The analysis and interpretation of the data using descriptive statistics. The triggering factors of migraine were assessed using a questionnaire and it has found that there is no significant association between triggers of migraine and selected demographic variables.

Key words: Migraine, Triggering factors of migraine, Association.

INTRODUCTION:

Recurrent headaches are the main symptom of a complicated neurological illness called migraine, which is frequently accompanied by other symptoms like sensory abnormalities. Research indicates that a variety of physiological and environmental triggers can produce migraine attacks in susceptible individuals, even if the precise aetiology of migraines is still unknown. Not everything has triggers. Numerous people have a range of symptoms both before and during a migraine attack, including fatigue, emotional disturbance, poor focus, light or sound sensitivity, nausea, blurred vision, and sleeping. Monthly migraine sufferers typically have one or two bouts. The duration of a migraine attack is more than two days for over two thirds of women and less than half of males. The cumulative effects of migraine can impact all facets of everyday life, including relationships with family, friends, lovers, and the workplace, in addition to the pain and suffering experienced during each attack.¹ A migraine attack may be precipitated by a confluence of events. For instance, a stressed-out college student would forego food and sleep in the lead-up to finals week, which could result in an attack. As with attacks, triggers differ from person to person and attack to attack. The best method to find triggers is to record all the circumstances leading up to a headache in a headache diary.² Any act, event, or change that can cause migraines is considered a trigger for the condition. Certain triggers, like avoiding dehydration, can be easily controlled; others, like stress management, can be more difficult to manage; still others, like weather variations, are uncontrollable. Not everyone is impacted by the same migraine trigger. According to National Migraine Centre research, 79% of patients knew what they believed to be the triggers for their migraines, however the majority believed that many triggers had to occur simultaneously to cause an attack.³ A significant impact on the degree of patients' social engagement and relaxation, migraine is the third most frequent issue affecting 14.7 percent of individuals of both genders. Apart from its impact on the activities of patients, migraine also has a significant effect on leisure time. It is always thought to be crucial to understand the limitations of migraine and how they affect one's quality of life.⁴

Objectives of the study

- To assess the triggering factors of migraine.

- To find the association between the triggering factors of migraine with selected demographic variables.

Hypothesis:

H1: There will be significant association between triggering factors of migraine and selected demographic variables.

METHODOLOGY

RESEARCH APPROACH: A descriptive approach is used to obtain information from the population. A survey is designed to obtain detailed information about distribution and interrelation of phenomenon in a population such as health survey.

RESEARCH DESIGN: The research design used in this study was descriptive research design which was used to assess the triggering factors of migraine among the selected students.

SETTING OF THE STUDY: In this setting the study was conducted at Srinivas group of college's, Valachil, Mangalore. It includes Srinivas group of college's Undergraduate and Postgraduate students.

POPULATION: In this study the population are the Undergraduate and Postgraduate migraine students of Srinivas group of college's, Valachil, Mangalore.

SAMPLE: In this study the sample comprises Undergraduate and Postgraduate migraine students of Srinivas group of college's, Valachil, Mangalore.

Sample Size: In this study the sample size consisted of 50 migraine students of Srinivas group of college's, Valachil, Mangalore.

SAMPLING TECHNIQUE: Non probability convenient techniques would be used to select the samples who need the inclusion criteria.

DATA COLLECTION INSTRUMENTS:

Research instrument is a tool used to measure the concept of interest in a research project that an investigator will use to collect data.

The tool used to collect data consisted of,

Tool 1: Baseline Performa

Tool 2: Multiple choice questions on triggers of migraine

Data collection procedure: Permission was obtained from the concerned authorities to conduct the research study in a Srinivas Group of College's, Valachil, Mangalore. The purpose of the study, the method of data collection and time that would be taken was explained to the subjects for getting the responses. They were also informed regarding the confidentiality terms and the informed consent was obtained from the respondents indicating their willingness to participate in the study. Non-probability convenient sampling technique was used to select 50 samples that fulfilled the sampling criteria. The Demographic proforma and the structured questionnaire were administered to 50 students. The data was collected from 1st April 2024 to 30th April 2024 and the data was compiled for analysis. Approximately 15-20 minutes were allotted for them to answer the items and complete it. The investigator thanked the participants for their active participation in the study.

PLAN FOR DATA ANALYSIS

Analysis is the organizing and synthesizing of data so as to answer research questions and test hypothesis.

The data was analysed using descriptive statistics according to objectives and hypothesis of the study and presented under the following heading

Section 1: The data was analysed by using descriptive statistics

Section 2: The association of research variables was analysed using Chi square test

RESULT:

Organization of the findings:

The data was analysed and presented under the following headings.

Section 1: Description of demographic variables.

Section 2: Description of triggering factors of migraine

Section 3: Association between triggering factors of migraine with selected demographic variables.

SECTION I: DESCRIPTION OF DEMOGRAPHIC VARIABLES

Table 1: Frequency and percentage distribution of subjects according to their demographic variables.

SL.NO	VARIABLES	FREQUENCY(f)	PERCENTAGE (%)
1.	Age in years		
	<20years	22	44
	21-25years	28	56
2.	Gender		
	Male	4	8
	Female	46	92
3.	Education		
	UG	37	74
	PG	13	26
4.	Residency		
	Urban	18	36
	Rural	32	64
5.	Family History		
	Yes	17	34
	No	33	66

The data presented in the table 1 shows the following findings

SECTION II: DESCRIPTION OF TRIGGERS OF MIGRAINE

This section deals with the analysis and interpretation of triggering factors of migraine. Data was analysed using descriptive statistics and represented in the following tables.

Table 2: Frequency and Percentage distribution of Migraine characteristics and symptoms

Sl.No	Variables	Frequency	Percentage
1.	Weather Condition		
	Summer	43	86
	Winter	4	8
	Autumn	1	2
	Rainy	2	4
2.	When do usually have headache		
	During stress	20	40
	Lack of sleep	16	32
	When the weather changes	3	6
	When the light is dazzling	11	22
3.	Sleep Deprivation		
	Less than 1 hours 1-3 hours	16	32
	4-5 hours	20	40
	More than 6 hours	9	18
		5	10
4.	Aggravating factors		
	Exertion	4	8
	Coughing	8	16
	Bending	12	24
	Turning your head suddenly	26	52
5.	Light which worsens migraine		
	Sunlight	25	50
	Blue-green light	6	12
	Fluorescent light	5	10
	Light from electronic gadgets	14	28
6.	Duration between exposure to triggering factor and attack onset		
	<1hour	31	62
	1hour - 12 hour	15	30
	12hour- 24 hour	2	4
	>24 hour	2	4
7.	Onset of headache		
	Morning Afternoon	1	2
	Night	15	30
	Anytime	8	16
		26	52

8.	Location of migraine Left or right of forehead Behind the eyes Top or back of the forehead All of the above	21 5 5 19	42 10 10 38
9.	Intensity of migraine Mild Moderate Severe Very Severe	15 18 14 3	30 36 30 6
10.	Symptoms before migraine Partial loss of vision Upset stomach Dizziness or Vertigo None	13 6 11 20	26 12 22 40
11.	Symptoms during migraine Fatigue Nausea Vomiting Vertigo	20 10 15 5	40 20 30 10
12.	Physical Limitations Temporary loss of vision Difficulty with speech Weakness of arms or legs Confusion	10 9 17 14	20 18 34 28
13	Sleep Disturbance Never Occasionally Often Always	16 25 4 5	32 50 8 10
14.	Occurrence of migraine/month 1-2/month 3- 4/month 5-6/month More than 6/month	29 14 4 3	58 28 8 6
15.	Type of migraine Pulsating feeling Tight or pressing feeling Burning or stabbing feeling Hammer hit feeling	6 14 10 20	12 28 20 40

Table 3: Frequency and Percentage distribution of Migraine trigger factors

Sl.No	Variables	Frequency	Percentage
1	Tea/Coffee Consumption		
	1cup/day	20	40
	2cup/day	23	46
	3cup/day	3	6
	nil	4	8
2	Chocolate Consumption		
	Less than 10	29	58
	Less than 15	9	18
	Less than 20	8	16
	Nil	4	8
3	Skippping of meals		
	Once a day	37	74
	Twice a day	9	18
	Thrice a day	3	6
	All of the above	1	2
4	Sleep		
	4-5 hours	16	32
	5-6 hours	16	32
	6-7 hours	9	18
	7-8 hours	9	18
5	General health of last month		
	Excellent	9	18
	Good	23	46
	Fair	11	22
	Poor	7	14

6	Participation in daily activities		
	Actively participated	7	14
	Less frequently participated Rarely participated	19	38
	Less participated	14	28
		10	20

Table 4: Frequency and Percentage distribution of effects of migraine on daily life

Sl.No	Variables	Frequency	Percentage
1	Days you miss the job/school		
	2-5 days	17	34
	3-8 days	7	14
	5-10 days	2	4
	never	24	48
2	Alleviating factors		
	Rest	35	70
	Exercise	1	2
	Warm Shower	4	8
	Massage	10	20
3	After taking migraine medicine how long migraine last		
	Less than 2 hours	36	72
	3-4 hours	11	22
	5-12 hours	3	06
	12-24 hours	0	0
4	How migraine affects the quality of life		
	Extremely	26	52
	Moderately	11	
	Very little		22
	Not at all	12	
			24

SECTION III: ASSOCIATION BETWEEN TRIGGERING FACTORS OF MIGRAINE WITH SELECTED DEMOGRAPHIC VARIABLES.

This section deals with the association between the triggering factors of migraine with the selected demographic variables. To find out, the Chi- square test was done. To test the statistical significance the following null hypothesis was formulated.

Ho: There will be significant association between triggering factors of migraine and selected demographic variables

Table 5: Association between demographic variables and migraine triggers

Demographic Variable	During stress	Lack of sleep	When the weather changes	When the light is dazzling	χ^2	p-value	Significance
Age in years							Not significant
<20years	10	4	3	5	6.464	0.091	
21-25years	10	12	0	6			
26-30years	0	0	0	0			
Gender							Not significant
Male	1	2	0	1	0.963	0.810	
Female	19	14	3	10			
Education							Significant
UG	12	11	3	11	6.625	0.010	
PG	8	5	0	0			
Residency							Not significant
Urban	8	7	0	3	2.607	0.456	
Rural	12	9	3	8			
Family History							Not significant
Yes	5	6	1	5	1.453	0.693	
No	15	10	2	6			

The study found a significant association between education level and migraine triggers ($\chi^2 = 6.625$, $p = 0.010$), with individuals being more likely to experience migraines triggered by stress, lack of sleep and weather changes, due to dazzling of light. Whereas no significant associations were found between migraine triggers and age, gender, residency, or family history of migraines.

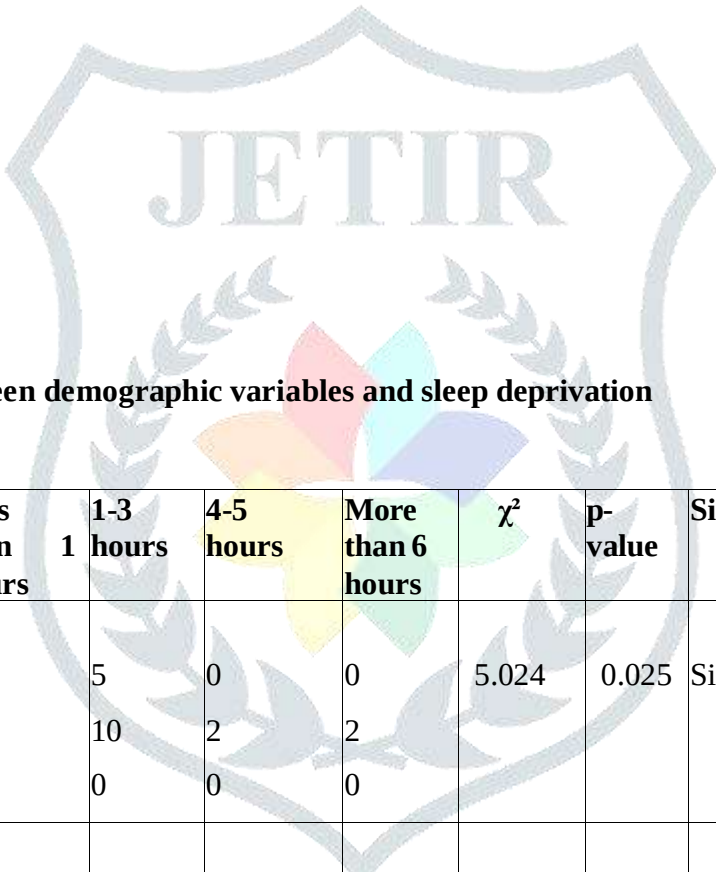


Table 6: Association between demographic variables and sleep deprivation

Demographic Variable	Less than 1 hours	1-3 hours	4-5 hours	More than 6 hours	χ^2	p-value	Significance
Age in years							
<20years	17	5	0	0	5.024	0.025	Significant
21-25years	14	10	2	2			
26-30years	0	0	0	0			
Gender							
Male	2	2	0	0	1.029	0.794	Not significant
Female	29	13	2	2			
Education							
UG	25	10	1	1	2.588	0.459	Not significant
PG	6	5	1	1			
Residency							
Urban	10	6	1	1	0.633	0.889	Not significant
Rural	21	9	1	1			
Family History							
Yes	7	8	1	1	4.756	0.191	Not significant
No	24	7	1	1			

The study found a significant association between age and sleep deprivation ($\chi^2 = 5.024$, $\chi^2 = 0.025$). No significant associations between sleep deprivation and Gender, Education level, Residency, Family history.

Table 7: Association between demographic variables and aggravating factors

Demographic Variable	Exertion	Coughing	Bending	Turning your head suddenly	χ^2	p-value	Significance
Age in years							
<20years	0	7	7	8	8.820	0.032	Significant
21-25years	1	8	1	18			
26-30years	0	0	0	0			
Gender							
Male	0	1	0	3	1.261	0.738	Not significant
Female	1	14	8	23			
Education							Not
UG	0	11	7	19	3.619	0.306	significant
PG	1	4	1	7			
Residency							Not
Urban	1	5	2	10	2.313	0.510	significant
Rural	0	10	6	16			
Family							Not

History	1	5	1	10	3.823	0.281	significant
Yes	0	10	7	16			
No							

The study found a significant association between age and aggravating factors, with age group of >20years and 21-25years are more likely to experience migraines triggered by physical activities such as exertion, coughing, bending and sudden head movements ($\chi^2 = 8.820$, $p = 0.032$). No significant associations were found between aggravating factors and gender, education level, residency, or family history of migraines. This suggests that age is a significant factor in determining the aggravating factors in triggering factor of migraine, with physical activities becoming more significant triggers as age increases.

Table 8: Association between demographic variables and light

Demographic Variable	Sunlight	Blue-green light	Fluorescent light	Light from electronic gadgets	χ^2	p-value	Significance
Age in years							
<20years	6	9	3	4	3.328	0.344	Not significant
21-25years	10	11	6	1			
26-30years							
Gender							
Male	0	1	2	1	5.088	0.165	Not significant
Female	16	19	7	4			
Education UG							
PG	11	17	5	4	3.172	0.366	Not significant
	5	3	4	1			
Residency							
Urban	8	6	3	1	2.257	0.521	Not significant
Rural	8	14	6	4			
Family History							
Yes	4	9	3	1	2.094	0.553	Not significant

No	12	11	6	4			
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Table 9: Association between demographic variables and intensity of migraine

Demographic Variable	Mild	Moderate	Severe	Very severe	χ^2	p-value	Significance
Age in years							
<20years	14	4	1	3	6.776	0.079	Nearly significant
21-25years	11	2	4	11			
26-30years	0	0	0	0			
Gender							
Male	2	1	0	1	1.061	0.786	Not significant
Female	23	5	5	13			
Education							
UG	18	5	3	11	0.985	0.805	Not significant
PG	7	1	2	3			
Residency							
Urban	9	2	1	6	0.860	0.835	Not significant
Rural	16	4	4	8			
Family History							
Yes	6	3	1	7	3.832	0.280	Not significant
No	19	3	4	7			

The study found a nearly significant association between age and intensity of migraine ($\chi^2 = 6.776$, $p = 0.079$). But found no significant association between intensity of migraine and gender, education, residency and family history of migraine.

Table 10: Association between demographic variables and symptoms before migraine

Demographic Variable	Partial loss of vision	Upset stomach	Dizziness or vertigo	None	χ^2	p-value	Significance
Age in years							
<20years	16	4	1	1	1.421	0.701	Not significant
21-25years	21	5	2	0			
26-30years							
Gender							
Male	3	1	0	0	0.467	0.926	Not significant
Female	34	8	3	1			
Education							
UG	28	7	1	1	3.051	0.384	Not

PG	9	2	2	0			significant
Residency							
Urban	15	2	0	1	4.538	0.209	Not
Rural	22	7	3	0			significant
Family							
History	15	2	0	0	3.322	0.345	Not
Yes	22	7	3	1			significant
No							

Table 11: Association between demographic variables and alleviating factors

Demographic Variable	Rest	Exercise	Warm shower	Massage	χ^2	p-value	Significance
Age in years							
<20years	16	6	0	0	2.856	0.240	Not significant
21-25years	20	5	3	0			
26-30years							
Gender							
Male	3	1	0	0	0.284	0.868	Not significant
Female	33	10	3	0			
Education							
UG	28	8	1	0	2.855	0.240	Not significant
PG	8	3	2	0			
Residency							
Urban	15	1	2	0	5.183	0.075	Not significant
Rural	21	10	1	0			
Family History							
Yes	11	4	2	0	1.644	0.439	Not significant
No	25	7	1	0			

The chi-square analysis revealed no significant associations between demographic variables (age, gender, education, residency, and family history) and alleviating factors. Although the residency variable approached significance, it did not meet the conventional threshold.

Table 12: Association between demographic variables and after taking migraine medicine how long migraine last

Demographic Variable	Less than 2 hours	3-4 hours	5-12 hours	12-24 hours	χ^2	p-value	Significance
Age in years							
<20years	13	1	2	6	3.038	0.386	Not significant
21-25years	22	0	2	4			
26-30years							
Gender							
Male	3	1	0	0	12.733	0.005	Not significant
Female	32	0	4	4			
Education							
UG	24	1	3	9	2.220	0.528	Not significant
PG	11	0	1	1			
Residency							
Urban	15	0	0	3	3.683	0.298	Not significant
Rural	20	1	4	7			
Family History							
Yes	14	0	2	1	4.100	0.251	Not significant
No	21	1	2	9			

DISCUSSION

The study reveals that 44% of the sample is under 20 years old, 56% is 21-25 years old, and 0% is 26-30 years old. The majority of the patients are undergraduate students, with 36% being urban and 64% being rural. The study contradicts previous findings, showing a higher incidence of migraines in females (76%) and a higher prevalence of migraines in the 18-30 age group (35%). Triggers for migraines include stress, sleep deprivation, sudden head turning, sunlight, and occasional sleep disturbances. The majority of patients experience moderate intensity migraines, no symptoms before the occurrence, fatigue, and weakness. The study also found no significant association between triggering factors of migraine and demographic variables like age, gender, education, residency, and family history. However, there was a significant association between education level and migraine triggers, age and sleep deprivation, aggravating factors, and the intensity of migraine.

CONCLUSION

The study found no significant association between migraine triggering factors and demographic variables like age, gender, education, residency, and family history. However, there was a significant association between education level and migraine triggers, sleep deprivation, and aggravating factors. The majority of the samples were aged 21-25, with 92% of them females. The majority of the samples were undergraduates and rural residents. Most of the samples did not have a family history of migraine. Migraines were most common during summer, with 40% triggered by stress and 1-3 hours of sleep deprivation. Physical activities and exposure to sunlight worsened migraines. The study also found that 52% of the samples experienced moderate intensity migraines, with 40% experiencing fatigue and 34% experiencing weakness. The study also found that 32% of the samples slept only 4-5 hours during migraines, and 46% of the samples skipped meals.

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