

Assessment of Quality of Life in Young Adults with Migraine

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Abstract

Original Research Article

Migraine is a primary headache disorder with recurring headaches, nausea, vomiting, photophobia, and phonophobia. Migraine is believed to impact more than 10% of the world's population, is most prevalent between the ages of 20 and 50, and is about three times more prevalent in women than in males. Patients with Migraine may have significant medical comorbidity load associated with pain, disability, and activity limitation which in turn affects their Health-related quality of life (HRQOL). Hence, there is a growing need to research the impact of Migraine on patients HRQOL in order to improve the productivity and QOL of patient. The goal of the study was to assess the quality of life in young adults with Migraine. The study also aimed to determine the Migraine triggers in individuals. The severity, duration, and frequency of Migraine attacks were also studied. A total of 84 subjects were enrolled in the study out of which 29.76% (n=25) were Male and 70.24% (n=59) were Female. Stress (42.85%) was found to be the more prevalent trigger. The severity of subjects was assessed, 35.71% are having severe migraine which is more prevalent. y. Almost half (47%) of the patients had migraine episodes 1-2 weeks back followed by 1 month back. . Most of the subjects (44%) had migraine attacks for 4-6 hours. The study concluded that migraine was more prevalent in women. The most common symptoms seen in this study population were pain followed by nausea & vomiting. Out of this study, population stress was the common trigger followed by travel and noise. The results of the current study indicate the quality of life of migraine patients was significantly low almost half and the most affected domain in the majority of the patient was role function restrictive.

Keywords: Migraine, HRQoL, Severity, Duration, and Frequency.

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INTRODUCTION

Headache disorders are the most well-known disorders of the neurological system. A headache is a sign of pain in the face, head, or neck. It may present as a migraine, tension-type, or cluster headache. The World Health Organization has listed the disease as one of the 10 most serious conditions on a worldwide scale (WHO). The worldwide prevalence of active headache disorders is 47%, with migraines accounting for 10%, tension-type headaches (TTH) accounting for 38%, & chronic headaches accounting for 3%. The International Classification of Headache Disorders (ICHD) classifies headaches as either primary headache disorders, such as migraine, or symptomatic headaches, which are a symptom of another condition. Most frequently Migraine starts during puberty. It occurs thrice as frequently in women as in men. Migraine is produced by the activation of a process deep in the brain, which results in the production of pain-causing inflammatory compounds surrounding the head's neurons and blood vessels.

Migraine is characterized by persistent, frequent lifelong attacks.

Patterns of migraine attacks typically

Of moderate or severe intensity, Pulsating in quality, One-sided, With the duration of hours to 2-3 days, Attack frequency is between once a week and once a year, Aggravated by routine physical activity, Nausea (the most characteristic associated feature). Migraines can either have an aura or not. A migraine with aura is characterized by reversible sensory, visual, or other central nervous system-related symptoms. The aura typically manifests prior to the onset of a migraine, but it can also occur concurrently or after the headache has subsided. The visual aura is the most prevalent in migraine patients with aura, followed by speech difficulties and sensory abnormalities. There may be a pins-and-needles feeling that starts in one place and slowly spreads to one side of the body, tongue, and/or faces. Episodic migraines are headaches that occur less

than 15 times each month. Chronic migraines are headaches that occur on 15 or more days per month for more than three months, with at least eight of those days exhibiting migraine symptoms. Multiple risk factors are related to migraine. Gender, genes, and age are non-modifiable factors. Migraine triggers vary from patient to patient. Caffeine, food additives, delayed or skipped meals, and artificial sweeteners are examples.

QoL measurements in migraine patients are essential in their migraine management. The QoL is measured with the migraine-specific quality of life questionnaire. The MIDAS (Migraine Disability Assessment) questionnaire was made to find out how much headaches affect people's lives. The information on this questionnaire also helped primary care providers figure out how much pain and disability your headaches are causing and figure out the best way to treat them.

This study provides better clarity and focuses on the clinical characteristics more effectively. The severity, duration, and frequency of migraine will be well established by this study. Which all results in pushing the limits of the quality of life of migraine patients. The study aids in providing a better knowledge of a person's experience with migraine, at the end of the study new techniques or strategies to cope with migraine could be developed. The study's main aim is to help the population by improving their quality of life.

MATERIALS AND METHODS

Study Site: The study was conducted within a 10 km radius of Acharya Institutes.

Study Design: This is an observational Study.

Study Duration: 6 months

Study Criteria: A total of 84 subjects fulfilling the inclusion and exclusion criteria were included in the study.

Inclusion Criteria:

- a. Patient's Age group is between 18-25 years.
- b. Any gender.
- c. Patients who are diagnosed with migraine have a minimum of 1 attack in a month

Exclusion Criteria:

- a. Individuals not willing to participate in the study.
- b. Patients who are not having migraine attacks for the last 6 months.

Ethical Approval: The study was approved accordance with the guidelines issued by ICMR the Institutional Ethics Committee has issued ETHICAL CLEARANCE to carry on the work.

Data collectors: Self-administered questionnaire and patient profile form was used, distributed and collected by the investigators from the patients or bystanders.

Data collection tool:

- **Self-designed data collection form:** A data collection form will be designed to collect sample demographics, age, sex educational status, employment status, and clinical characteristics.
- **Headache Triggers Sensitivity and Avoidance Questionnaire (HTSAQ):** A questionnaire including 24 of the most commonly reported triggers (e.g., stress, odour, lack of sleep) and two open-ended questions for two individual triggers that can be added.
- **Migraine Specific Quality of Life Questionnaire: A 14-item PRO instrument that measures the impact of migraine across three essential aspects of a patient's HRQL over the past 4 weeks:** role function-restrictive (RR), role function-preventive (RP), and emotional function (EF).
- **MIDAS Test:** A questionnaire composed of five questions that are scored to convert to a MIDAS disability grade, and two additional questions that focus on the frequency and severity of your migraines.

Sampling Technique: A non-probability sampling technique i.e., a convenience sampling method.

Study Procedure: The study will commence after obtaining approval from Institutional Ethical Committee. Subjects for the study will be identified by the investigator by conducting a hospital visit based on the inclusion and exclusion criteria. The purpose of the study will be explained to the participants and their consent will be obtained. Relevant data will be recorded on the data collection form. The data so obtained will be entered into a Microsoft excel sheet and appropriate analysis will be performed to evaluate drug use measures.

Statistical Analysis: Appropriate descriptive statistical analysis will be performed. While applying the formula for sample size it is obtained as 80. All recorded data were entered using Microsoft Excel software and statistical analysis was performed using paired ANOVA, and t-test for determining statistical significance. The results were expressed in terms of a 95% confidence interval and considered statistically significant whenever p is less than 0.05. Descriptive statistics such as mean, standard deviation, and interquartile range were computed for quantitative variables and percentages were calculated for categorical variables. The results were also expressed in the form of diagrammatic representation whenever necessary.

RESULTS & DISCUSSION

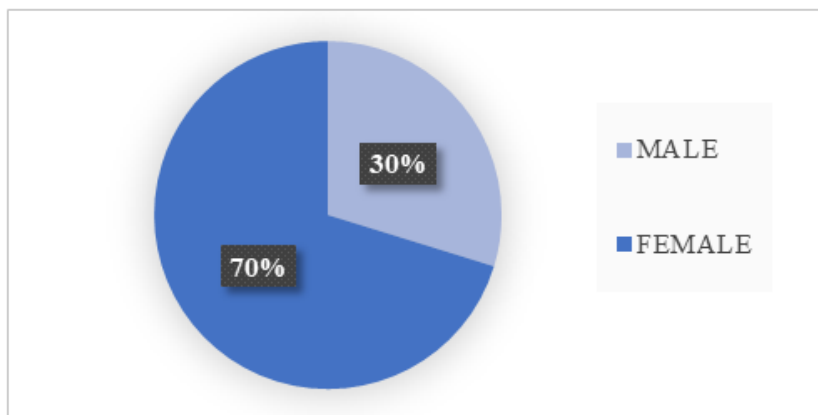
This study included a total of 84 subjects from Soldevanahalli village, Bengaluru rural. The study was conducted for 3 months.

DISTRIBUTION OF SUBJECTS BY GENDER:

Out of 84 subjects in the study, 25 were Male (29.76%) and 59 were Female (70.24%) as shown in Figure 3.

Table 2: Gender distribution of subjects

| Sl. No | Gender | No. of Subjects | Percentage % |
|--------|--------|-----------------|--------------|
| 1 | Male | 25 | 29.76% |
| 2 | Female | 59 | 70.24% |
| 3 | Total | 84 | 100% |

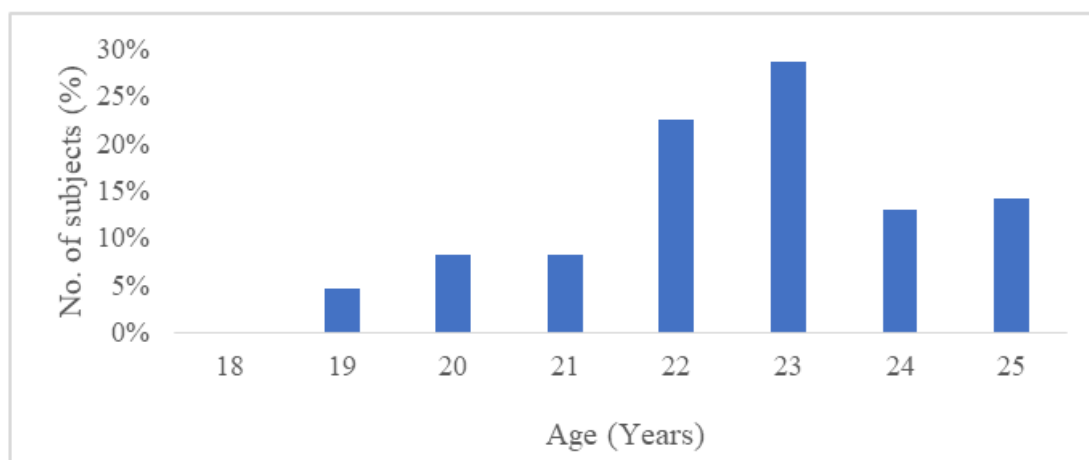
**Figure 3: Gender distribution of subjects****AGE DISTRIBUTION OF SUBJECTS:**

The subjects with an age of 23 years were in majority accounting for 28.57% of the total population and the subjects with an age of 19 years were minimal in

number i.e., 4.76% as shown in Figure 2. The mean age of the study population was found to be 22.58 ± 1.62 years.

Table 3: Age distribution of subjects

| Sl. No | Age | No. of Subjects | Percentage % |
|--------|-----|-----------------|--------------|
| 1 | 18 | 0 | 0.00% |
| 2 | 19 | 4 | 4.76% |
| 3 | 20 | 7 | 8.33% |
| 4 | 21 | 7 | 8.33% |
| 5 | 22 | 19 | 22.62% |
| 6 | 23 | 24 | 28.57% |
| 7 | 24 | 11 | 13.10% |
| 8 | 25 | 12 | 14.29% |

**Figure 4: Age distribution of subjects**

DISTRIBUTION OF GENDER WITHIN DIFFERENT AGES:

Figure 3 shows the gender distribution among different ages. The number of Female subjects was more

than the Males in all ages except the age group 25. The age group 23 had the highest number of subjects (20%) and the patients with ages 23 & 25 had the highest number of Male subjects (8%).

Table 4: Distribution of gender within different ages of subjects

| Age | Male | Percentage % | Female | Percentage % |
|-----|------|--------------|--------|--------------|
| 18 | 0 | 0% | 0 | 0% |
| 19 | 1 | 1% | 3 | 4% |
| 20 | 1 | 1% | 6 | 7% |
| 21 | 2 | 2% | 5 | 6% |
| 22 | 4 | 5% | 15 | 18% |
| 23 | 7 | 8% | 17 | 20% |
| 24 | 3 | 4% | 8 | 10% |
| 25 | 7 | 8% | 5 | 6% |

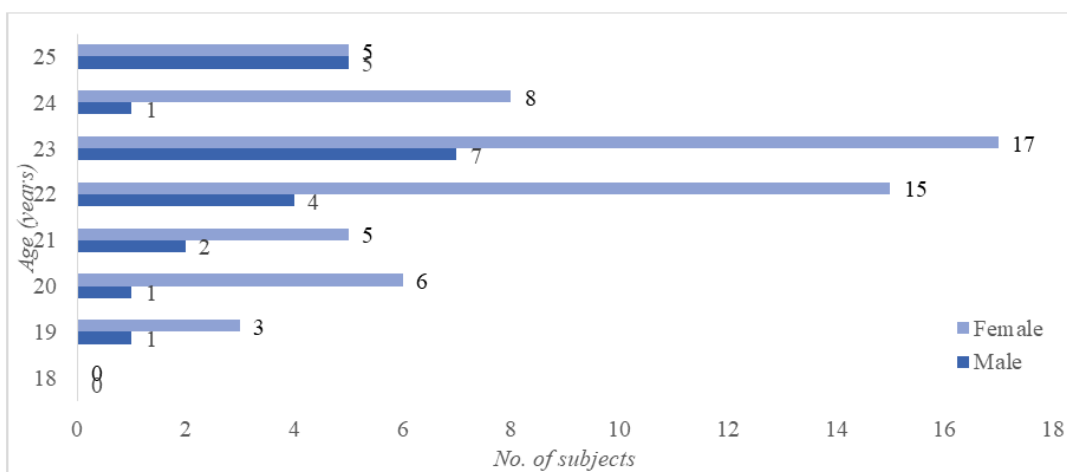


Figure 5: Distribution of gender within different ages of subjects

EDUCATIONAL STATUS:

Out of 84 study subjects, 36% of subjects were undergraduates and 64% of the subjects were graduates.

Table 5: Distribution of educational status of subjects

| Sl. No | Educational status | No. of Subjects | Percentage % |
|--------|--------------------|-----------------|--------------|
| 1 | UG | 54 | 64.29% |
| 2 | Graduate | 30 | 35.71% |

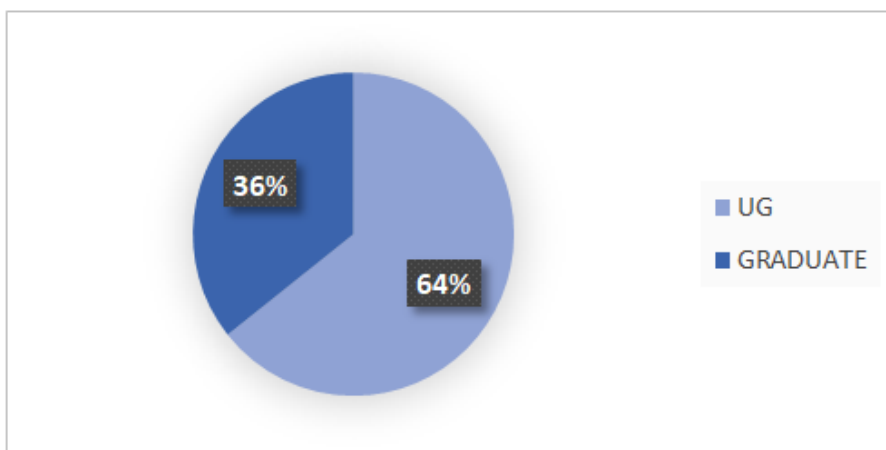


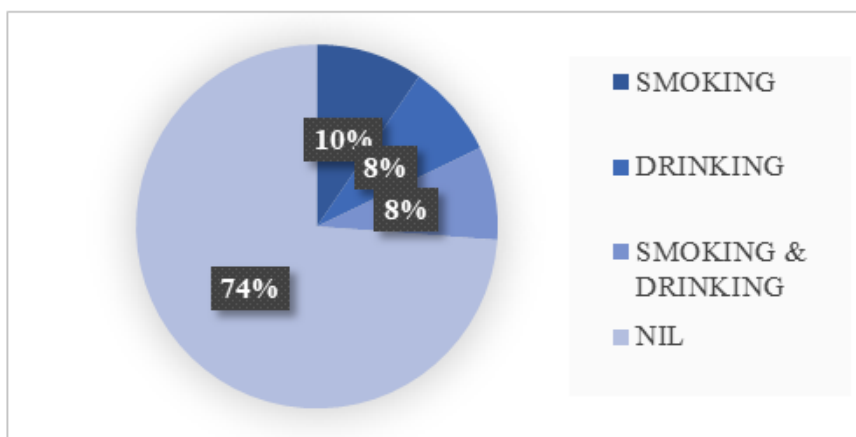
Figure 6: Distribution of educational status of subjects

SOCIAL HISTORY:

Out of 84 migraine subjects, 10% of them were found to be smokers, 8% were drinking and 8% were found to be both smoking and alcoholic.

Table 6: Distribution of social history of subjects

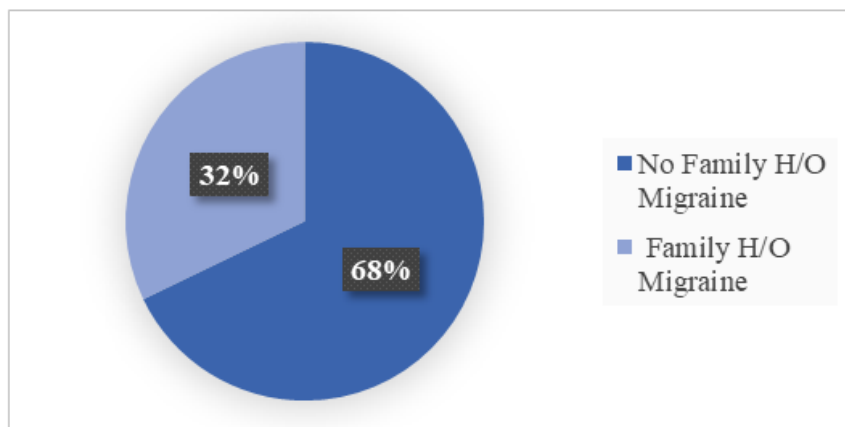
| Sl. No | Social History | No. of Subjects | Percentage % |
|--------|--------------------|-----------------|--------------|
| 1 | Smoking | 8 | 9.52% |
| 2 | Drinking | 7 | 8.33% |
| 3 | Smoking & Drinking | 7 | 8.33% |
| 4 | Nil | 62 | 73.81% |

**Figure 7: Distribution of social history of subjects****FAMILY HISTORY:**

Out of 84 patients, 32% patients are having a family history of migraine, and the remaining 67% were having no family history of migraine.

Table 7: Distribution of family history of subjects

| Sl. No | Family History | No. of Subjects | Percentage % |
|--------|------------------------|-----------------|--------------|
| 1 | No Family H/O Migraine | 57 | 67.86% |
| 2 | Family H/O Migraine | 27 | 32.14% |

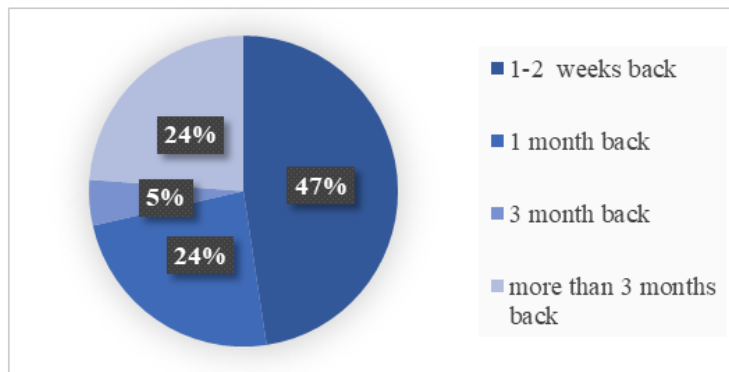
**Figure 8: Distribution of family history of subjects****FREQUENCY OF MIGRAINE EPISODES:**

Out of 84 patients, 47% of patients had migraine episodes 1-2 weeks back, 24% had on 1 month

back, 5% had on 3 months and 24% had their migraine attack more than 3 months back.

Table 8: Distribution of last migraine episodes in subjects

| Sl. No | Last Migraine Episode | No. of Subjects | Percentage % |
|--------|-------------------------|-----------------|--------------|
| 1 | 1-2 weeks back | 40 | 47.62% |
| 2 | 1 month back | 20 | 23.81% |
| 3 | 3 months back | 4 | 4.76% |
| 4 | more than 3 months back | 20 | 23.81% |

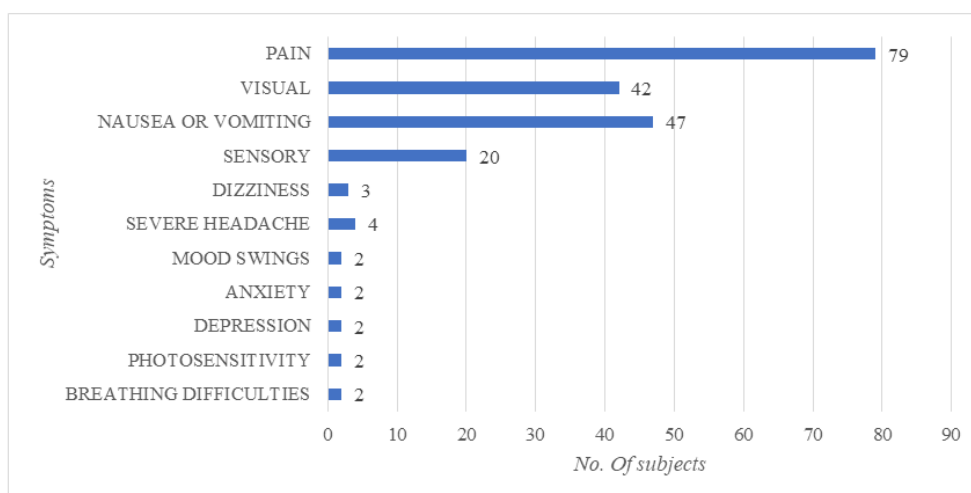
**Figure 9: Distribution of last migraine episodes in subjects****SYMPTOMS:**

The most prevalent symptoms seen in 84 migraine patients were pain in 94% (n=79) followed by nausea or vomiting in 55.95% (n=47), visual problems in

50% (n=42), sensory problems in 23.81% (n=20) and least common symptoms were breathing difficulties, photosensitivity, depression, anxiety and mood swings (2.38%, n=2).

Table 9: Distribution of symptoms of the subjects

| Sl. No | Symptoms | No. of Subjects | Percentage % |
|--------|------------------------|-----------------|--------------|
| 1 | Breathing difficulties | 2 | 2.38% |
| 2 | Photosensitivity | 2 | 2.38% |
| 3 | Depression | 2 | 2.38% |
| 4 | Anxiety | 2 | 2.38% |
| 5 | Mood swings | 2 | 2.38% |
| 6 | Severe headache | 4 | 4.76% |
| 7 | Dizziness | 3 | 3.57% |
| 8 | Sensory | 20 | 23.81% |
| 9 | Nausea or vomiting | 47 | 55.95% |
| 10 | Visual | 42 | 50.00% |
| 11 | Pain | 79 | 94.05% |

**Figure 10: Distribution of symptoms of the subjects**

DURATION OF MIGRAINE ATTACKS:

Out of 84 Subjects, 44 % of subjects had migraine attacks for 4-6 hours, and 32% of patients had

experienced migraine for a duration of 1-2 hours followed by 8-12 hours and more than 12 hours 11.90% each.

Table 10: Distribution of duration of migraine attacks in subjects

| SI. No | Duration of Migraine Attacks | No. of Subjects | Percentage % |
|--------|------------------------------|-----------------|--------------|
| 1 | 1-2 hours | 27 | 32.14% |
| 2 | 4-6 hours | 37 | 44.05% |
| 3 | 8-12 hours | 10 | 11.90% |
| 4 | more than 12 hours | 10 | 11.90% |

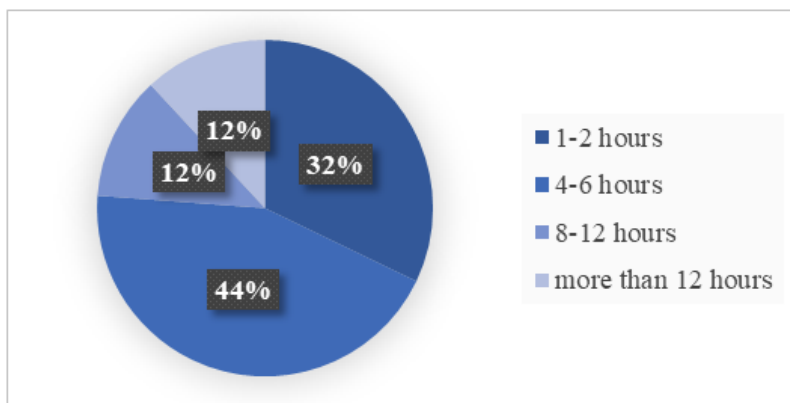


Figure 11: Distribution of duration of migraine attacks in subjects

MIGRAINE-SPECIFIC QUALITY OF LIFE QUESTIONNAIRE:

Role function restrictive (47.41%) is more in the study population followed by role function

preventive (43.93%) and emotional function (40.79%) these domains can be improved by identifying and avoiding the triggering factors and thereby achieving a better QoL.

Table 11: Distribution of raw score of MSQ v2.1

| DOMAINS | RAW SCORES | PERCENTAGE % |
|---------------------------|------------|--------------|
| ROLE FUNCTION RESTRICTIVE | 23.6 | 47.41% |
| ROLE FUNCTION PREVENTIVE | 12.79 | 43.93% |
| EMOTIONAL FUNCTION | 9.12 | 40.79% |

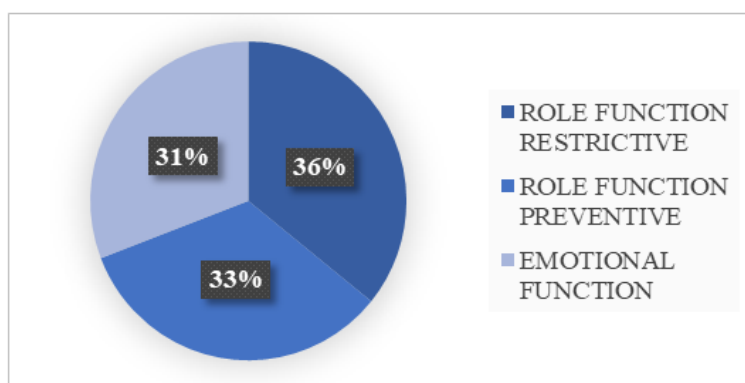


Figure 12: Distribution of raw score of MSQ v2.1

HEADACHE TRIGGERS SENSITIVITY AND AVOIDANCE QUESTIONNAIRE: TRIGGERS:

Out of 84 subjects, Stress (42.85%) was found to be the more prevalent trigger followed by travel (39.29%), noise (38.10%), and the least identified trigger was alcohol (15.48%).

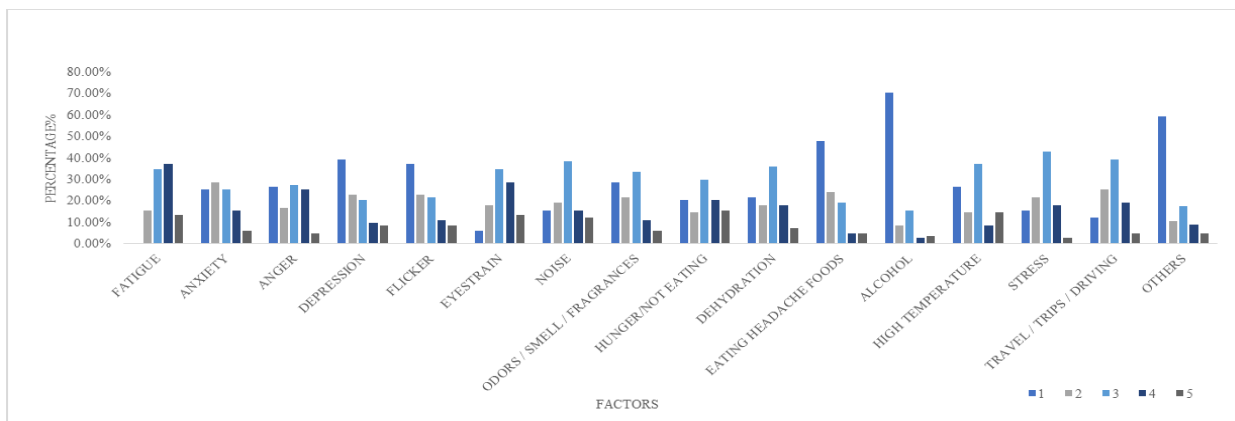


Figure 13: Distribution of factors that triggered migraine attacks in the subjects

Table 12: Distribution of factors that triggered migraine attacks in the subjects

| SL.NO | SCORES | 1 | 2 | 3 | 4 | 5 |
|-------|----------------------------|--------|--------|--------|--------|--------|
| | FACTORS | | | | | |
| 1 | Fatigue | 0.00% | 15.48% | 34.52% | 36.90% | 13.10% |
| 2 | Anxiety | 25.00% | 28.57% | 25.00% | 15.48% | 5.95% |
| 3 | Anger | 26.19% | 16.67% | 27.38% | 25.00% | 4.76% |
| 4 | Depression | 39.29% | 22.62% | 20.24% | 9.52% | 8.33% |
| 5 | Flicker | 36.91% | 22.62% | 21.43% | 10.71% | 8.33% |
| 6 | Eyestrain | 5.95% | 17.86% | 34.52% | 28.57% | 13.10% |
| 7 | Noise | 15.47% | 19.05% | 38.10% | 15.48% | 11.90% |
| 8 | Odors / smell / fragrances | 28.57% | 21.43% | 33.33% | 10.72% | 5.95% |
| 9 | Hunger/not eating | 20.24% | 14.29% | 29.75% | 20.24% | 15.48% |
| 10 | Dehydration | 21.43% | 17.86% | 35.71% | 17.86% | 7.14% |
| 11 | Eating headache foods | 47.62% | 23.81% | 19.05% | 4.76% | 4.76% |
| 12 | Alcohol | 70.24% | 8.33% | 15.48% | 2.38% | 3.57% |
| 13 | High temperature | 26.19% | 14.29% | 36.90% | 8.33% | 14.29% |
| 14 | Stress | 15.48% | 21.43% | 42.85% | 17.86% | 2.38% |
| 15 | Travel / trips / driving | 11.90% | 25.00% | 39.29% | 19.05% | 4.76% |
| 16 | Others | 59.07% | 10.49% | 17.40% | 8.60% | 4.44% |

ANOVA: Single Factor statistics resulted in a p-value of <math><.00001</math>, which is statistically significant, showing that the subjects do not have similar triggers.

AVOIDANCE

Out of 84 study subjects, (33.33%) try to avoid noise followed by stress (30.95%) and eyestrain

(30.95%), and the least reported avoidance factor was found to be alcohol (14.29%).

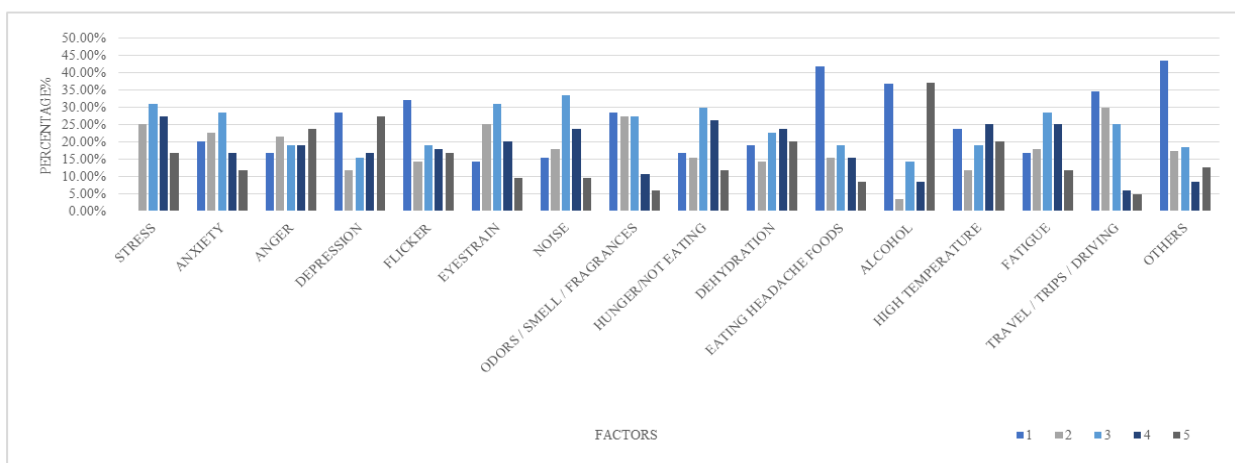


Figure 14: Distribution of factors avoided by subjects

Table 13: Distribution of factors avoided by subjects

| SI.NO | SCORES | 1 | 2 | 3 | 4 | 5 |
|-------|----------------------------|--------|--------|--------|--------|--------|
| | FACTORS | | | | | |
| 1 | Stress | 0.00% | 25.00% | 30.95% | 27.38% | 16.67% |
| 2 | Anxiety | 20.24% | 22.62% | 28.57% | 16.67% | 11.90% |
| 3 | Anger | 16.67% | 21.43% | 19.05% | 19.05% | 23.80% |
| 4 | Depression | 28.57% | 11.90% | 15.48% | 16.67% | 27.38% |
| 5 | Flicker | 32.14% | 14.29% | 19.05% | 17.86% | 16.66% |
| 6 | Eyestrain | 14.29% | 25.00% | 30.95% | 20.24% | 9.52% |
| 7 | Noise | 15.48% | 17.86% | 33.33% | 23.81% | 9.52% |
| 8 | Odors / smell / fragrances | 28.57% | 27.38% | 27.38% | 10.71% | 5.96% |
| 9 | Hunger/not eating | 16.67% | 15.48% | 29.76% | 26.19% | 11.90% |
| 10 | Dehydration | 19.05% | 14.29% | 22.62% | 23.80% | 20.24% |
| 11 | Eating headache foods | 41.67% | 15.48% | 19.05% | 15.48% | 8.32% |
| 12 | Alcohol | 36.90% | 3.57% | 14.29% | 8.33% | 36.91% |
| 13 | High temperature | 23.81% | 11.90% | 19.05% | 25.00% | 20.24% |
| 14 | Fatigue | 16.67% | 17.86% | 28.57% | 25.00% | 11.90% |
| 15 | Travel / trips / driving | 34.52% | 29.76% | 25.00% | 5.95% | 4.77% |
| 16 | Others | 43.45% | 17.27% | 18.45% | 8.33% | 12.50% |

ANOVA: Single Factor statistics resulted in a p-value of .0108, which is statistically significant, showing that the subjects do not have similar avoidance.

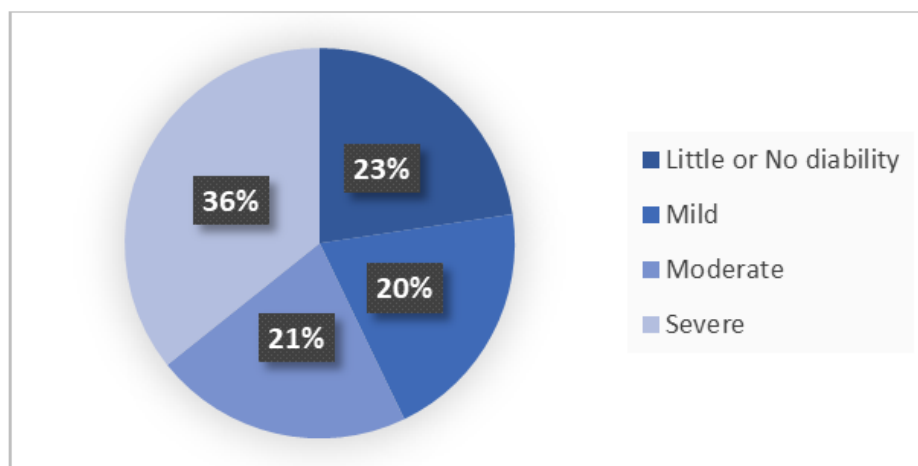
Test for independence: Paired t-test statistics resulted in a p-value of .0014, which is statistically significant, showing that the subjects do not have similar triggers & avoidance.

MIDAS:

The severity of 84 subjects was assessed, 35.71% (n=30) are having severe migraine which is more prevalent followed by little or no disability 22.62%, (n=19), 20.24 % (n=17) subjects were having mild and 21.43% (n=18) having a moderate disability.

Table 14: Distribution of severity of migraine among the subjects

| SI. NO | SEVERITY | NO. OF SUBJECTS | PERCENTAGE % |
|--------|-------------------------|-----------------|--------------|
| 1 | Little or No disability | 19 | 22.62% |
| 2 | Mild | 17 | 20.24% |
| 3 | Moderate | 18 | 21.43% |
| 4 | Severe | 30 | 35.71% |

**Figure 15: Distribution of severity of migraine among the subjects**

The observation study was performed in the selected population for a period of 6 months. A total of 84 were enrolled in the study based on inclusion and exclusion criteria. The subjects were categorized according to age and gender. Out of the 84 subjects who

participated in the study, the majority of them belonged the age of 23 years (28.57%) (n=24), and the number of females (26.76%, n=25) was more than the males (70.24%, n=59). Most of them belonged the age of 23 years (n=17,20%). This result was similar to the result

conducted by Fatima G. AlHarbi *et al.*, (2020) in which 67% were female and were in the age group of 20 to 53 years.

In the present study, the prevalence of pain was found to be 94% followed by nausea or vomiting (55.95%), and visual problems (50%), this result was similar to the study conducted by Raquel Gil-Gouveia *et al.*, (2015) in which pain was the symptom scored with the highest intensity and disability. In our study, a higher score was found in the restrictive domain 47.41% which is contrary to the study conducted by Fatima G. AlHarbi *et al.*, (2020) in which the highest score was found in the preventive domain, whereas the emotional domain was the lowest in both the studies. In this study, it was evident that from the trigger scale stress (42.85%) was the more prevalent trigger which is contrary to the study conducted by Anna Caroli *et al.*, where they mentioned the most frequent triggers in their study; which are related to stress (e.g.: mental stress, conflict). For the scale Avoidance, 33.33% try to avoid noise which is similar to this study

FUTURE DRECTON: This study may be conducted across multiple centers for longer durations for better outcomes.

CONCLUSION

A migraine is a headache that can cause severe throbbing pain or a pulsing sensation, usually on one side of the head. It's often accompanied by nausea, vomiting, and extreme sensitivity to light and sound. Migraine attacks can last for hours to days, and the pain can be so severe that it interferes with your daily activities. The aim of the study was to measure the quality-of-life scores in young adults with migraine along with the identification of the triggering factors and the duration & frequency of the migraine attacks.

The study concluded that migraine was more prevalent in women. The most common symptoms seen in this study population were pain followed by nausea & vomiting. Out of this study, population stress was the common trigger followed by travel and noise.

Quality of life has gained importance as an outcome measure in recent years. The results of the current study indicate the quality of life of migraine patients was significantly low almost half and the most affected domain in the majority of the patient was role function restrictive. Assessment of severity showed that most of the patients were having severe migraine disabilities. Most of the patients have frequent migraine attacks last episode of attacks 1-2 weeks back in this study population. In this study, most patients have a moderate duration of migraine attacks accounting for 4-6 hours of migraine attacks. Urinary tract infection, or UTI, is an infection in any part of the urinary system.

ACKNOWLEDGEMENT

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