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Prevalence and Severity of Migraines Among Janitors: A Cross-Sectional Study

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ABSTRACT

Background of the study: Millions of people worldwide are affected by migraine, causing low quality of life and compromised work productivity. Its pathophysiology is influenced by various factors such as genetics, environmental triggers and neurovascular changes. It is more predominant in females than males.

Methodology: A cross-sectional study assessed the prevalence and severity of Migraine in Janitors. 150 Janitors completed the Migraine Disability Assessment Questionnaire. Inclusion criteria consisted of janitors aged 20 to 65 years and working 5 to 6 hours per day. Any participant with other systematic illnesses was excluded from the study.

Results: The chi-square tests were applied to find the association. $p<0.005$ shows a positive association between migraine and missing out on their work in janitors. Out of 150 participants, 34 participants had mild migraine, 40 participants had moderate migraine, and 76 participants had severe migraine.

Conclusion: The study concludes that migraines have a significant impact on the severity of migraines and the likelihood of missing out on work among janitors. As the severity increases, so does the work attendance, jeopardizing the quality of life physically and psychologically. These findings highlight the need for effective management strategies and better work ergonomics in occupational settings.

Keywords: *Migraine, disability, association, prevalence, janitors, photophobia, phonophobia*

INTRODUCTION

Migraine is considered a primary restricting disorder that causes extra health burdens on individuals andsociety as well. In the Global Burden of Disease Study, migraine is the second leading cause of disability and is more prevalent in adolescents. Migraine impacts more than just physical pain as it dramatically influences work, household responsibilities, education, relations and social life. It is also said to be the second major contributor to the burden of neurological

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diseases following stroke[1]. Extremely prevalent and classifiable as a debilitating ailment that can lower quality of life and impair job performance, headaches ultimately place a high economic cost on communities. According to the World Health Organization (WHO), headaches afflict 50% of adults globally. These include migraines, cluster headaches, and headaches of the tension variety. Migraines account for over one-third of adult headache cases. A neurovascular illness called migraine is characterized by recurrent headaches that can range in intensity from mild to severe[2]. Migraine is a primary, although not entirely, headache disorder characterized by recurrent episodes of headache often associated with the following symptoms, including nausea, vomiting and photophobia[3].A primary headache disorder called migraine is typically recurrent and of moderate to severe intensity. The third most frequent reason for impairment in people under 50 is migraine. Migraine headaches can be sharp or dull, last 4 to 72 hours, and include photophobia(sensitivity to light) and photophobia (sensitivity to sound), which may or may not be present.They may also be made worse by physical activity[4]. In clinical practice, this type of migraine ismost frequently observed, and it is typically bilateral and periorbital. Vomiting occasionally causes a headache to end. There are frequently different combinations of tiredness, difficultiesfocusing, stiff neck, blurry vision, yawning, and pallor[5]. When a headache goes away, the headusually feels heavy and achy, the scalp may be sore, and there may be much pain[6].More than one billion individuals (14.7% of the world's population) suffer from this chronic health condition, and women are more likely to get migraines than men. According to the Global Burden of Disease, migraine affects a person's capacity to do daily tasks and is the third most common disability among those under 50[7]. In the adult population, females have a higher prevalence of migraine compared to males. Particularly in children and adolescents, nutrition and dietary status are significant migraine triggers. The most commonly cited triggers include fasting, chocolate, cheese, and alcohol. Food triggers may exert their effects indirectly via influencing serotonin and norepinephrine release, which results in vasoconstriction, or directly by stimulating brain stem and cortical neural pathways [8] .If not addressed promptly, it can result in multiple functional limitations and psychological issues such as anxiety, depression and post-traumatic stress disorder. At the same time, episodic migraine can progress to chronic migraine (more than fifteen headache days monthly for a three-month period, of which more than eight aremigraines, in the absence of medication overuse, according to the International Headache Society)[9]. Additionally, it was found that the probability of descendent sickness varies from 60% to 90%when migraine attacks are common in both parents but is only 72% when they are common inmothers. It is around 30% more prevalent among fathers alone. According to research, a person's mother has four times the likelihood of having a migraine history as their father does.According to a study, an increased prevalence of migraines in a population raises the risk of numerous socioeconomic harms from treatment and diagnosis[10].Reduced headache frequency, severity, duration, and impairment are the main goals of treatment. These include using non-steroidal anti-inflammatory medications to treat acuteheadaches[11]. Preventative or prophylactic therapy may be necessary when the patient misses school, home, or social events due to their frequent (more than one headache per week) or incapacitating (causing the patient to miss these activities). Effective management of migrainesrequires behavioural assessment and therapy. This should involve regular exercise, drinking enough water without caffeine, eating enough food and not skipping meals, as well as getting enough sleep (8 to 9 hours each night) [12] . This study aimed to investigate the severity of migraine among janitors as they are exposed to extreme occupational stressors and long physical working hours that may exacerbate their condition. Such risk factors are responsible for multiple health disparities.

METHODOLOGY

It was an observational cross-sectional study. The study was completed within six months after approval from the ethical committee. The sample size was calculated as 150 by using an Epi tool calculator. Given the limited time frame and accessibility of janitors, a convenience sampling

technique was used. Data was collected from DHA, Bahria Society, Metro Station and Orange train station. Inclusion criteria consisted of individuals with ages ranging from 20 years to 65 years who were working 6 to 8 hours per day. People with any cognitive issue, i.e. loss of short or long-term memory and any other systematic illnesses, were excluded from the study.Data was calculated using the Migraine Disability Assessment Scale (MIDAS) developed in 1998 by Stewart and colleagues,which aimed to improve communication between care providers and migraine patients[13]. This questionnaire aimed to assess the prevalence of migraine in janitors. It is comprised of 5 questions regarding the likelihood of missing work and productivity in the last three months and is categorized from minimal to severe disability. Its internal consistency is 0.8, and validity "r" is > 0.7[13].Data was collected and analyzed using the Statistical Package for the Social Sciences (SPSS),version 25. Descriptive statistics were used to describe the data, and a chi-square test was applied.

RESULTS

Table 1 shows a demographic analysis of participants out of a total sample of 150, 50.0% of participants were in an age rangeof 20-35, 38.7% of participants had an age range of 36-50, 31.3% had age 51-65 years. Tables 2 and 3 demonstrated cross-tabulation and association of migraine with stresses and specific times of day. The Chi-square test was used to find out the association. Figure 1 illustrated that 50.7% of janitors suffered from severe migraines whereas 26.67 and 22.67% suffered from moderate and mild migraines, respectively.

	Age	Frequency	Percent
Age	20-35	75	50.0
	36-50	58	38.7
	51-65	17	31.3
Gender	Male	61	40.7
	Female	89	59.3
	Total	150	100.0

Table 1. Demographic details of Participants

Table 1 shows the demographic details of the participants; most patients were 20 to 35 years of age, and 59 percent of females participated in the study

	Value	df	Asymptotic significance (2-sided)
Person Chi-Square	19.741	1	0.003
Likelihood Ratio	18.377	3	0.003
Linear by Linear Association	11.979	3	0.003

Table 2. Cross-tabulation between migraine and specific time

Table 2 shows Cross tabulation between migraine and specific time of day chi-square test, showing significant results as the p-value is <0.05

	Value	df	Asymptotic significance (2-sided)
Person Chi-Square	15.524	4	0.004
Likelihood Ratio	15.683	4	0.004
Linear by Linear Association	4.905	1	0.004

Table 3. Cross-tabulation between migraine and any significant stresses in the last year.

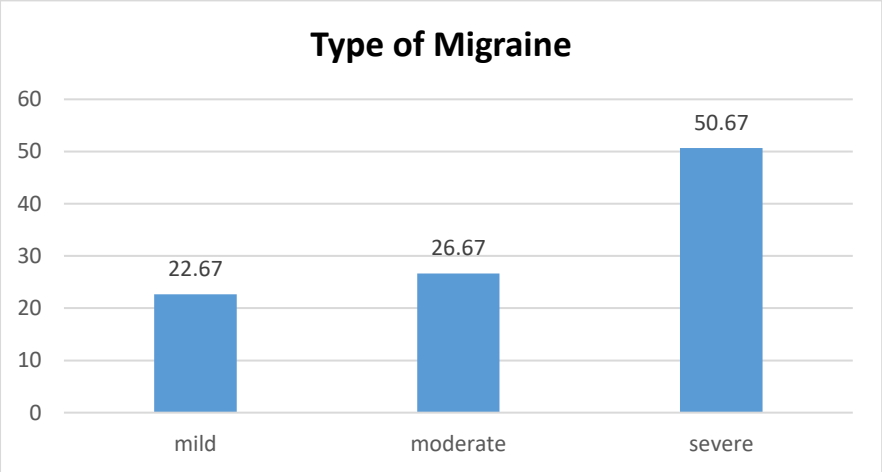

Figure 1. Severity of Migraine

Figure 1 shows that 22.67 % have mild, 26.67 % moderate, and 50.67 % have severe migraines

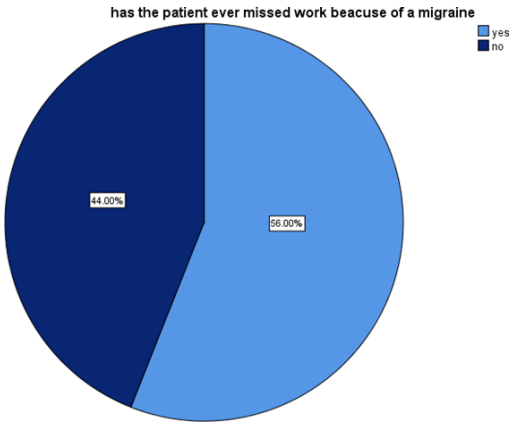

Figure 2 shows that 56.00% of participants missed their work due to migraine.

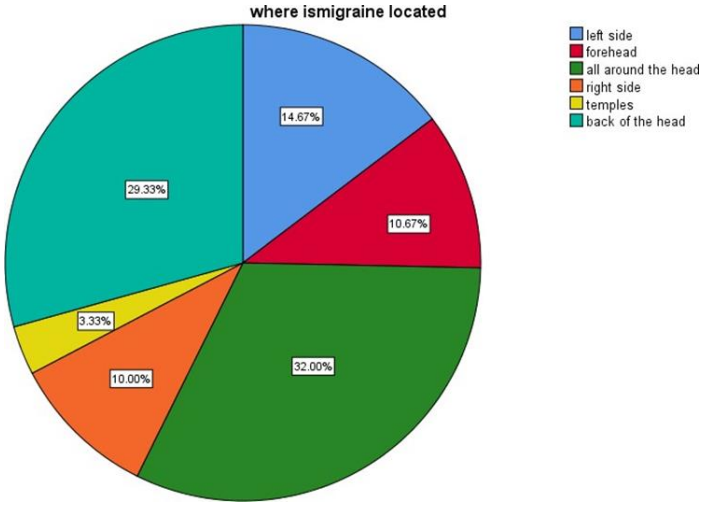

Figure 3 shows the percentages of locations of migraine reported

DISCUSSION

Migraine is a type of neurological disorder that causes sharp, severe throbbing headaches on the back and one side ɗ the head. Vomiting, nausea, stomach pains, confusion pho,tophobia and sound sensitivity frequently supplement it. An attack can last for hours to days, andthe pain can be so severe that it restricts daily living activities. In some people, a warning symptom known as an aura occurs before or with a headache. an aura includes mood swings, irritability, tingling sensations on one side of the face ar,m or leg, and difficulty speaking. Additionally, a few conditions like anxiety, depression, hypertension, and socioeconomicstatus were also found to be significantly associated with migraine.This cross-sectional study was conducted among 150 janitors. In this research study, we chose janitors as the population. We selected it because it was the least researched topic.In my study, 50.0% of participants belonged to the age group of 20–35, 38.5% belonged to the age group of 36–50, and 11.3% belonged to 51–65. Concerning symptoms, the highest percentage of participants had 34.7% mood swings, 14.7% irritability, 51.3% confusion, and 7.3% weakness and numbness in arms and legs. This provides significant insight into the broader prevalence of neurological symptoms among janitors, who often face unique occupational challenges.[7].A similar study was conducted on various professions, such as the general population, medicalstudents, non-medical students, neurologists, teachers, nurses, and physicians. A study conducted in high-pressure workplaces indicated that occupational stress exacerbates the frequency and severity of migraines, a finding consistent with our results. Workplace factors such as inadequate ventilation, exposure to harsh cleaning chemicals, irregular shifts, and lack of ergonomic support may contribute significantly to the higher incidence of migraines among janitors. These factors are often overlooked in public health policies, which tend to focus on broader occupational hazards rather than specific neurological impacts. A population-based study was conducted in China to measure the extensive blowout of migraines and their impact on professional life. Participants with migraine reported an average of 3 lost days of work or household tasks, along with 4 days of reduced yield and efficiency at work [14] . Despite this, awareness about the impact of migraines remains low among janitorial staff. Many participants in this study reported self-treating their symptoms with over-the-counter medications or home remedies, often delaying professional medical consultation. This aligns with findings from other studies, which emphasize the importance of educational programs to enhance understanding of migraine triggers, management, and the potential benefits of early medical intervention.The majority of students reported moderate-to-severe migraines, which is similar to a migraine research that was done. Even though the majority of participants reported having frequent migraine attacks, very few of them sought medical attention, and of those who did,most were men. People

who took migraine medication experienced much shorter migraine symptoms than those who did not, which lasted for a few hours. nother significant observation was the role of gender in migraine prevalence. Our study found that women janitors were disproportionately affected, with female participants eight times more likely to experience migraines than their male counterparts. Hormonal fluctuations, which are well-documented contributors to migraine in women, could partially explain this disparity. However, sociocultural factors, such as the dual burden of work and household responsibilities, likely exacerbate the stress levels for women in this profession.

Family history also played a notable role in migraine occurrence, with 63% of participants reporting a familial connection. This suggests a potential genetic predisposition, underscoring the need for further genetic studies in this population to identify specific hereditary patterns. Moreover, the study highlighted significant psychosocial triggers, including stress, anxiety, and depression, as key contributors to migraine frequency and severity. Interventions aimed at improving mental health support for janitorial staff could potentially reduce the burden of migraines. In our region of the world, where most people turn to self-treatment or homemade medicines, headaches are primarily seen as a nuisance[15].This demonstrates a lack of understanding of migraines and a poor attitude toward their treatment, which was unusual in this study group because medical students are expectedto know better. However, self-medication with analgesics and non-steroidal anti- inflammatory drugs is a reasonably widespread habit.63% of the population reported having a family history of migraines, and the findings indicate a causal relationship between the two.Up to 80% of an incidence have been reported in prior research. Given that migraine's symptoms may not always be immediately apparent, the high sensitivity in this sample couldbe deceiving because the individuals may have mistakenly identified any headache as a migraine[16].A study in India also described somewhat similar results (prevalence of migraine in medicine students was 14%)[17]. Though other literature stated a reasonably higher occurrence of migraine among the population of South East Asian region as 30% in India (18), 48% in Pakistan (19), and 35% in Nepal.. In the studies conducted in different countries like Brazil (12%) (34), Nigeria (14%) (35), Turkey (13%), and Oman(12%) reported slightly lower prevalence of migraine compared to our study. On thecontrary, Saudi Arabia (24%), Nairobi (34%), or Kuwait (28%) reported a higher prevalence of migraine[20].It has been found in this study that the female participants were eight times more prone to migraine than the male participants. This unusually high ratio may be because there were generally more female participants than male participants in the study sample. Out of 150 participants 41.3% had migraine. In addition, out of 150,63 participants, 42% have a family history of migraines [21-23]. The risk factor was high in those participants which were unemployed, has low income andless resources has been found in the result that most of the women participants janitors had more prevalence of migraine than male [24-25]. In general stress, depression, anxiety was regarded as one of the trigger factors of migraine or there is significant association between migraineand anxiety.

Limitations & Recommendations

A relatively smaller size may need more generalizability of findings to the more extensive janitorial staff. The study did not differentiate between types of migraine. Future research should address this limitation by categorizing migraines into subtypes, such as chronic and episodic, to better understand their specific impacts on janitorial workers. Larger-scale studies with diverse occupational groups could also provide comparative insights.

In addition, the study lacked detailed analyses of occupational triggers, such as prolonged exposure to cleaning agents or repetitive physical tasks. Future investigations should explore these factors to develop targeted preventive measures. Examining the role of ergonomic interventions, such as posture-correcting equipment or regular breaks, could also yield actionable recommendations. Future research should investigate migraine's impact on posture and balance. Further research

should be conducted with treatment strategies including education and self-management during working hours. It is also recommended that future studies incorporate qualitative methods, such as interviews and focus groups, to capture the lived experiences of janitors coping with migraines. This would provide a more comprehensive understanding of their challenges and coping mechanisms.

Moreover, workplace health policies should emphasize early intervention and support for janitors experiencing migraines. Employers could collaborate with healthcare providers to develop educational campaigns focusing on recognizing early symptoms, effective self-management techniques, and the importance of seeking professional care. Initiatives like subsidized healthcare access or workplace wellness programs could further alleviate the burden of migraines on this vulnerable population.

CONCLUSION

The findings and results of this study indicates higher prevalence rate of migraine with 50.6% severe disability among janitors. A significant association is present between migraine and likelihood of work absenteeism among janitors which negatively affects quality of life and wellbeing of janitors. This highlights the need for preventive measures and implementation of management strategies to combat migraine.

AUTHORS' CONTRIBUTION:
The following authors have made substantial contributions to the manuscript as under:

Conception or Design: Ghazal Hussain, Subla Noor
Acquisition, Analysis or Interpretation of Data: Maida Mushtaq, Hafiz Hamid Rashid, Almina Shafiq
Manuscript Writing & Approval: Sarah Hussain, Maidah

All authors acknowledge their accountability for all facets of the research, ensuring that any concerns regarding the accuracy or integrity of the work are duly investigated and resolved.

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