Prevalence of Menstrual Migraine Among University students and its Impact on Quality of Life

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Background: Menstrual migraine associated with hormonal fluctuations and low pain threshold during the menstrual cycle is common but underrecognized condition. It significantly impairs daily functioning and quality of life yet research into their prevalence and impact remains limited. This study aims to address this gap by exploring the prevalence of menstrual migraine and to find its impact on quality of life as this pain occur along with menstrual pain. This highlights the importance of interventions to improve well-being during periods.

Method: A cross-sectional study with 384 participants was conducted. Data was collected via an online survey incorporating demographic questions, the Menstrual Migraine Assessment Tool (MMAT), and the 12-Item Short Form Survey (SF-12). Pearson's correlation analysed the relationship between menstrual migraines and quality of life using IBM SPSS Statistics version 26.

Results: The study reported 30.2% females having menstrual migraines. Participants with menstrual migraines had lower SF-12 Physical Component Summary (PCS) and Mental Component Summary (MCS) scores compared to those without, with mean PCS and MCS scores of 43.3±5.91 and 38.6±8.21, respectively and an overall SF-12 score of 77.3±6.66. Mental health decline was more pronounced. Pearson's correlation analysis showed a fair negative correlation between menstrual migraines (MMAT) and quality of life (SF-12) ($r = -0.347$, $p < 0.05$), indicating that menstrual migraines reduced quality of life.

Conclusion: Menstrual migraines are prevalent among female university students and adversely affect quality of life highlighting the need for targeted interventions to support their well-being.

Keywords: Prevalence, Menstrual Migraine, University Students, Quality of Life

Introduction

Menstrual Migraine is defined as a migraine that occurs on the first and second days of menstruation in at least two out of three menstrual cycles and does not occur at any other time during the cycle. (Olson & Hansen, 2021). Migraines are severe headaches causing intense discomfort on one side of the head that can be as pulsating or throbbing. Menstrual migraines and hormone headaches occur just before or during menstruation. They can be worsened by motion, brightness, smell, or voice. These symptoms may last from a few hours to several days. (Olson 2021).

These headaches are caused by fluctuating amounts of estrogen and progesterone which regulate menstrual periods. particularly the decline in estrogen levels before menstruation, which may increase susceptibility to migraine attacks. In addition, central sensitization may contribute to increased pain sensitivity and low pain threshold because the central nervous system becomes more responsive to sensory stimuli and females with migraine experience heightened sensitivity to pain, touch, light, and sound (Raffaelli et al., 2023; Suzuki et al., 2022).

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Studies have shown that many females with menstrual migraines also experience symptoms of anxiety and depression, sleep difficulties, discomfort leading to a reduced quality of life. Factors such as age, depressive symptoms, and the frequency and severity of pain all affect the quality of life for patients suffering from menstrual migraines (Luo et al., 2022). In Malaysia, more than 70% of females reported experiencing fatigue, headaches, and changes in appetite during their menstruation. (Azhary et al., 2022).

Understanding the prevalence of the menstrual Migrain and impact on quality of life can help to guage the pain and distress experienced by females along with menses pain. This research is essential to determine the frequency of menstrual migraines and their impact on students well-being, including academic performance, class attendance, and participation in sports and social activities.

The research aims to provide valuable insights that can increase awareness and enhance the quality of life for females with menstrual migraine. Coping strategies, exercise plan and treatment strategies can be planned by the health care providers and physiotherapist to combat this pain.

Methods:

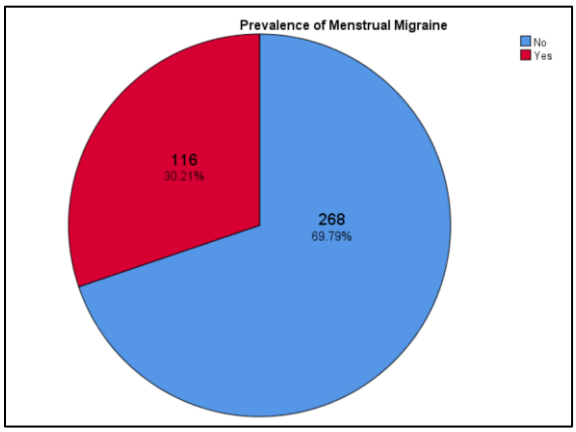
The study is a cross s sectional study design. Duration is 8 weeks conducted at Universiti Tunku Abdul Rahman, Malaysia. The study population is female university students from age 18-25 years. The ethical approval was done by the Ethical Review Committee (SERC) at Universiti Tunku Abdul Rahman (UTAR). Inform consent was obtained from all participants.

A total of 384 female participants were recruited from various universities by social media platforms and convenience sampling was used. Females with regular menstrual cycle and having menstrual Migrain for past 3 cycles were included. Any other headache, eye issue was excluded.

Participants filled the google link questionnaire that consist of demographic information, 12-item Short Form Survey (SF-12) and Menstrual Migraine Assessment tool (MMAT) and were asked to complete the questionnaire and submit. The MMAT questionnaire determine the prevalence of menstrual migraine and SF-12 questionnaire assesses the quality of life affected by menstrual migraine.

Inferential analysis was performed after data collection and a report was obtained. IBM Statistical Package for Social Science (SPSS) software version 26.0 and Microsoft Excel were used to produce study results.

Results



Prevalence of menstrual headache in the study population was found to be 30.2% with 116 out of 384 participants reporting its occurrence.

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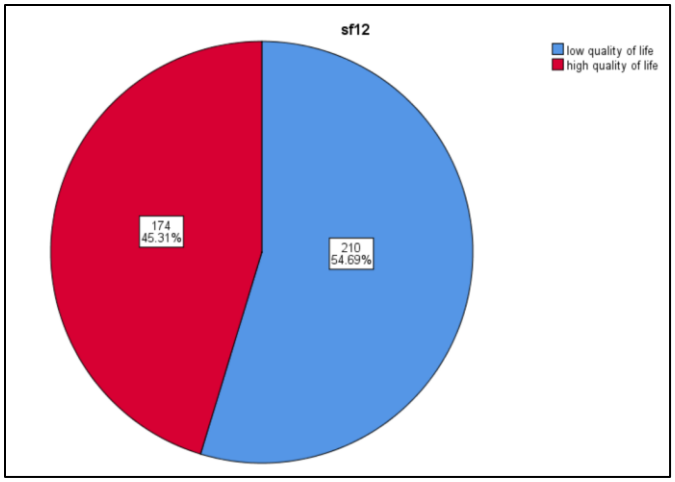
Frequency, mean and standard deviation of menstrual migraine for the participants

MMAT	Frequency, n (%)	Mean ± SD
Yes	116 (0.302)	1.30±0.460
No	268 (0.698)	

The mean MMAT score for participants with menstrual migraine was 1.30 with a standard deviation of 0.460 as shown in above table. One-third of the study population experiences menstrual migraine that impact their quality of life and functional outcomes.

Distribution of quality of life for the participants



The overall quality of life among the participants was assessed using SF-12, with a mean score of 82±9.1. Based on the results, 54.69% of participants (n = 210) reported a low quality of life, while 45.31% (n = 174) reported a high quality of life.

Frequency, mean and standard deviation of Quality of life for the participants

Outcome Measures	Frequency, n (%)	Mean ± SD
SF-12		82±9.1
High quality of life	174 (0.453)	

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Low quality of life	210 (0.547)	
PCS		43.4±6.29
MCS		39.0±8.06

Discussion

Among 384 participants, there are 116 which is 30.2% of female university students have menstrual migraine while 286 which is 69.8% of female university students do not have menstrual migraines. A previous study by Fernández-Martínez et al. (2020) reported a prevalence of menstrual migraine among Spanish university students showed 45.15%. The result of the study is slightly lower than the previous study, even though both studies recruited the same group of participants. However, this study was done on nursing students who might have high stress levels.

Participants who experienced menstrual migraine were likely to report lower scores in both PCS and MCS, highlighting the effect of menstrual migraine on quality of life. The lower Mental Component Summary (MCS) scores imply that menstrual migraines contribute to emotional distress, diminished vitality and social role limitations in addition to physical functionality. The Physical Component Summary (PCS) scores show difficulties with everyday physical tasks, which may relate to the debilitated migraine symptoms during menstruation (Lacson et al., 2010).

Larger sample sizes tend to provide more reliable and generalizable results, possibly accounting for the lower prevalence of menstrual migraine in my study (Sim et al., 2021). Moreover, the broader population in current study included students from diverse courses with varying stress levels, reducing the overall prevalence of menstrual migraine.

Differences between the present study and previous results can be attributed to differences in the study population, sample size, diagnostic criteria. The current study found lower quality-of-life scores among participants with menstrual migraine than among those without it this can imply that menstrual migraine is associated with lesser quality of life in the females.

Conclusion

Future research should look into the efficacy of specific interventions for relieving menstrual migraines and increasing the overall quality of life for university students. Interventions could include stress management programs that use techniques like mindfulness, cognitive-behavioral therapy or relaxation exercises to address the psychological factors that contribute to migraines' severity and improve overall life quality

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