



Prevalence and Characteristics of Women With Menstrual Migraine in the 2021 United States National Health & Wellness Survey

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Background and objective

- Globally, migraine is a leading cause of disability,^{1,2} and is 2–3 times more common in women than in men.³⁻⁶
- Hormonal factors have an impact on migraine and menstruation is a common trigger.^{7,8}
- Prevalence of menstrual migraine (MM) ranges from 10% to 70% (depending on the population studied and diagnosis criteria).^{7,8}
- MM attacks tend to be longer and accompanied by more severe nausea, and may be more difficult to treat, compared with migraine attacks outside menstruation.⁷⁻⁹
- There is a lack of evidence on current treatments when used for MM specifically.
- A greater understanding of the prevalence of MM, and the characteristics of and treatments used by women with MM, would enable better management of MM and inform the development of treatment for MM.
- The objective of this study was to estimate the prevalence of MM and describe:
 - Demographics and clinical characteristics.
 - Migraine characteristics, including disability (MIDAS).
 - Current treatments used for migraine.

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ICHD-3=International Classification of Headache Disorders 3; MIDAS=Migraine Disability Assessment; MM=menstrual migraine

Methods

- This retrospective cross-sectional study used the 2021 US National Health and Wellness Survey (NHWS).
- NHWS is an annual, self-reported survey, representative of the adult population, to gain the patients' perspective on a wide range of diseases and conditions.¹
 - The US data are weighted so that they are representative of US age and sex distributions.
- For this study, women responding to the migraine module who had a diagnosis of migraine were included, both those who reported their migraines were associated with menses and those who did not.
 - Migraine: lifetime diagnosis of migraine by a physician and experienced migraine in the past 12 months.
 - MM: "Do you experience migraines related to your menstrual cycle?" (yes or no).
- Prevalence of MM was calculated among all women and among pre-menopausal women.
 - Pre-menopausal: 18–39 years of age or 40–55 years of age with regular or irregular menstrual bleeding.
- The demographic and treatment characteristics of pre-menopausal women with and without MM were summarized descriptively.

1. Real-World Evidence. <https://www.cernerenviza.com/real-world-data/national-health-and-wellness-survey-nhws>
MM=menstrual migraine; NHWS=National Health and Wellness Survey

Results

- Of 130.6 million adult women represented by the weighted survey, 19.8 million had migraine, of which 11.8 million were pre-menopausal.
- 6.2 million women experienced MM:
 - Prevalence of MM was 31.0% among all women with migraine.
 - Prevalence of MM was 52.5% among pre-menopausal women with migraine.

	Total US adult women population	Total diagnosed with migraine, female	Diagnosed with migraine, female, pre-menopausal		
			Total	MM	No MM
Total N	42,046	6488	3755	1966	1789
Total weighted	130,552	19,812	11,808	6186	5622

Demographics of pre-menopausal women with migraine

- No statistical comparison was conducted, but women with and without MM were comparable in terms of mean age, BMI, history of obesity, marital status, and employment status.

	MM (weighted n=6186)	No MM (weighted n=5622)
Age, mean (SD), years	33.24 (9.54)	33.22 (8.81)
BMI, mean (SD), kg/m ²	28.93 (8.13)	29.3 (8.33)
Obesity ever, n (%), yes	2243 (38.22%)	2113 (39.79%)
Marital status, n (%)		
Single/not living with partner	2920 (47.21%)	2657 (47.25%)
Married/living with partner	3255 (52.61%)	2955 (52.56%)
Declined to answer	11 (0.18%)	10 (0.19%)
Employed, n (%)		
Yes (full time/part time/self-employed)	4120 (66.59%)	3710 (65.98%)
No	1871 (30.24%)	1714 (30.49%)
Disabled (short term/long term)	196 (3.16%)	198 (3.53%)

Weighted participant (n) data are $\times 10^3$. No statistical comparison was conducted.
BMI=body mass index; MM=menstrual migraine

Migraine characteristics in pre-menopausal women

- Women with MM had worse migraine characteristics (attacks per month, disability) compared with women without MM.

	MM (weighted n=6186)	No MM (weighted n=5622)
Migraine attacks per month, mean (SD)	4.47 (6.52)	3.75 (6.3)
Monthly headache days, mean (SD)	8.41 (7.43)	8.29 (7.59)
MIDAS, mean (SD)	24.76 (34.76)	20.11 (34.79)
MIDAS grade, n (%)		
1 (little or no disability)	1773 (28.66%)	2398 (42.66%)
2 (mild disability)	935 (15.12%)	803 (14.28%)
3 (moderate disability)	1313 (21.22%)	990 (17.60%)
4 (severe disability)	2166 (35.01%)	1431 (25.45%)

Current treatment of migraine in pre-menopausal women

- The use of prescription and/or OTC treatments for MM were common.
- Among prescription treatment users, the majority used acute treatment, with preventive treatment less common.

	MM (weighted n=6186)	No MM (weighted n=5622)
Type of current treatment, n (%)		
Prescription only	1043 (16.86%)	999 (17.76%)
OTC only	2623 (42.40%)	2505 (44.56%)
Prescription and OTC	1960 (31.69%)	1435 (25.53%)
No treatment	560 (9.05%)	683 (12.15%)
Intended use of current treatment, n (%) ^a		
Acute only	1918 (63.88%)	1492 (61.33%)
Prevention only	227 (7.57%)	247 (10.15%)
Acute and prevention	634 (21.11%)	483 (19.85%)

^aDenominator is number of prescription treatment users (n=3003 MM, n=2434 no MM).
Weighted participant (n) data are $\times 10^3$. No statistical comparison was conducted.
MM=menstrual migraine; OTC=over the counter

Treatment of migraine in pre-menopausal women (1)

- Among prescription treatment users with MM, triptans, NSAIDs, and opioids were frequently prescribed acute treatments.

	MM (weighted n=6186)	No MM (weighted n=5622)
Current prescribed acute treatment, n (%) ^a		
Triptan	1103 (36.72%)	828 (34.04%)
NSAID	935 (31.13%)	686 (28.17%)
Opioid	668 (22.23%)	449 (18.43%)
Barbiturate	325 (10.82%)	288 (11.85%)
Ergot	67 (2.24%)	37 (1.51%)
Rimegepant	38 (1.26%)	52 (2.14%)
Lasmiditan	3 (0.10%)	2 (0.10%)
Ubrogepant	86 (2.85%)	49 (2.02%)
Combination analgesic	976 (32.49%)	641 (26.33%)
Other (acute treatment)	53 (1.75%)	37 (1.52%)

^aDenominator is number of prescription treatment users (n=3003 MM, n=2434 no MM).
Weighted participant (n) data are ×10³. No statistical comparison was conducted.
MM=menstrual migraine; NSAID=nonsteroidal anti-inflammatory drug

Treatment of migraine in pre-menopausal women (2)

- Among OTC treatment users, NSAIDs and acetaminophen were frequently used OTC treatments.
- Among prescription treatment users, anticonvulsants were frequently prescribed preventive treatments.

	MM (weighted n=6186)	No MM (weighted n=5622)
Current OTC acute treatment, n (%) ^a		
NSAID	2286 (49.87%)	1768 (44.88%)
Acetaminophen (sole ingredient)	1445 (31.53%)	1065 (27.04%)
Acetaminophen + other (combination) ^b	1330 (29.02%)	1268 (32.19%)
Triptan	41 (0.89%)	35 (0.88%)
Current prescribed preventive treatment, n (%) ^c		
Anticonvulsant	391 (13.01%)	398 (16.34%)
Beta blocker	143 (4.78%)	57 (2.36%)
Antidepressant	182 (6.08%)	122 (5.03%)
CGRP monoclonal antibody	254 (8.47%)	180 (7.38%)
Botox	112 (3.75%)	88 (3.61%)

^a Denominator is number of OTC treatment users (n=4583 MM and n=3940 no MM).

^b Included acetaminophen, acetylsalicylic acid (aspirin), and caffeine and other acetaminophen-containing combination products.

^c Denominator is number of prescription treatment users (n=3003 MM, n=2434 no MM).

Weighted participant (n) data are ×10³. No statistical comparison was conducted.

CGRP=calcitonin gene-related peptide; MM=menstrual migraine; NSAID=nonsteroidal anti-inflammatory drug; OTC=over the counter



Conclusions

- The prevalence of MM was 31.0% among all women with migraine and 52.5% among pre-menopausal women with migraine.
- Demographics of pre-menopausal women with and without MM were comparable in terms of age, obesity, marital status, and employment.
- Women with MM had worse migraine characteristics compared with women without MM:
 - Migraine attacks per month: mean 4.47 (vs 3.75)
 - MIDAS score: mean 24.76 (vs 20.11).
- More than half (56.2%) of women with MM reported moderate-to-severe disability associated with their migraine.
- The use of prescription and/or OTC treatments for MM were common.
- Among prescription treatment users, the majority used acute treatment, with preventive treatment less common.
 - Acute treatments included triptans (36.7%), NSAIDs (31.1%), and opioids (22.2%).



Discussion

- The prevalence of MM in this study is comparable to that reported previously.
 - AMPP study found 53.8% menstrually-related migraine and 5.5% migraine only or predominantly occurring at the time of menses.¹
- The current study confirmed the impact of, and disability associated with, MM.
 - Previous studies also found MM attacks are more severe, of longer duration, are associated with greater impact and disability, and are more resistant to treatment than migraine attacks outside menstruation.¹⁻³
- The use of prescription and/or OTC treatments for MM were common.
- Acute treatment of migraine was common; preventive treatment was less common.
- Some women with MM were using opioids for the acute treatment of migraine.
- This study shows that MM is a common disability that negatively impacts women's ability to function and should be further explored with future research.